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Research on the Construction of Public Employment Service System in Hebei Province

Tao Yan
Shijiazhuang Posts and Telecommunications Technical College, Shijiazhuang 050021, China

Abstract: Firstly, this paper introduces the meaning and significance of the establishment system of public employment service. Secondly, it analyzes the current development status of public employment service system in Hebei Province and finds that the main problems faced by public employment service in Hebei Province are imperfect supporting system, insufficient capital investment, obvious regional differences and low level of information construction. Finally, starting with the factors of population structure, this paper analyzes the environment of public employment service in Hebei Province, and puts forward the idea of constructing the public employment service system by formulating a unified public employment service standard, further increasing capital investment, and developing a unified public employment service system.

Key words: Public employment service; Establishment system; Service standards

1.INTRODUCTION

Employment is the basic premise to ensure and improve the people's life. Full and stable employment is related to the people's daily life and career development, and will also play a positive role in promoting the harmony and stability of the whole society and the healthy and sustainable development of the country. Employment is not only an economic problem, but also an important social and political problem [1].

Public employment service has always been an important function of the government to solve employment problems and alleviate employment pressure. It needs to provide perfect employment consultation and services for employment groups and employers. At the same time, it needs to supervise and help employers establish employment security mechanisms that meet the requirements, such as "five insurances and one fund" (medical insurance, unemployment insurance, endowment insurance, industrial injury insurance and maternity insurance, housing accumulation fund) , professional title evaluation, personnel file management, etc., so as to continuously optimize the employment market environment, standardize the employment security mechanism of employment groups, and promote the healthy and orderly development of the whole employment market. In order to make a great leap in public employment service and continuously meet the needs of economic and cultural development of Hebei Province, we must build a scientific and perfect public employment service based on the existing public employment service The employment service system has laid a solid institutional foundation for Hebei Province to achieve higher quality and full employment as soon as possible and the rapid development of the province's economy [2-3].

According to the results of the seventh national census of Hebei Province, the total permanent population of Hebei Province at the end of November 2020 was 74.6102 million, an increase of 356700 over the end of the previous year. Among them, the urban resident population was 44.8164 million, an increase of 1.1047 million over the end of the previous year; The proportion in the total population (urbanization rate of permanent residents) was 57.62%, an increase of 1.19 percentage points over the end of the previous year. The labor age population aged 16 to 59 was 45.4228 million, accounting for 59.83% of the total population, a decrease of 0.81 percentage points over the previous year; The population aged 60 and above was 15.1839 million, accounting for 20.00% of the total population, an increase of 0.20 percentage points over the previous year, including 10.1732 million people aged 65 and above, accounting for 13.40% of the total population, an increase of 0.63 percentage points. Throughout the year, 896200 urban jobs were created, an increase of 26200 over the previous year. 277000 unemployed people were reemployed, an increase of 12000 over the previous year. 117000 people with difficulties were reemployed, an increase of 6905 over the previous year. At the end of the year, the registered urban unemployment rate was 3.12%, which was controlled within the expected target of 4.5%.

As a province with a large population, the task of employment in Hebei Province is relatively arduous. The registered unemployment rate in cities and towns in the province is 3.12%. Although it is controlled within the target range of 4.5%, the employment situation of the majority of rural transferred employment labor force is not optimistic. In 2018, the proportion of tertiary industry in Hebei Province exceeded that of secondary industry for the first time, but the proportion of rural labor force engaged in agricultural labor is still more than twice that of economically developed provinces. With the continuous development of production technology and the continuous popularization of fine work, this part of potential rural surplus labor force will become a free labor force to enter the human resources market. It has a strong impact on the current public employment service system. In addition, the structural unemployed, veterans reemployed and college graduates increasing year by year are important service objects of the employment service system of Hebei Province. Facing the increasingly complex public employment service objects and the increasingly severe employment situation, accelerating the standardization construction of public employment service system is an important measure to solve these contradictions and meet these challenges. It is an inevitable choice to improve the quality of public employment service and further improve the quality of employment in Hebei Province.

2. DEVELOPMENT STATUS AND EXISTING PROBLEMS OF PUBLIC EMPLOYMENT SERVICE SYSTEM IN HEBEI PROVINCE

In March 2017, the Ministry of human resources and social security promulgated the general principles of public employment services, terms of public employment services, requirements for facilities and equipment of public employment service centers, service specifications for unemployment registration management, service specifications for employment registration management, service specifications for job assistance, service specifications for job introduction and service specifications for career guidance, Standardize and standardize the service content, service process, service quality, service behavior, service requirements and standards of Public Employment Service Institutions, in order to improve the overall capacity and level of public employment service in Hebei Province, It provides a legal basis and theoretical basis to ensure that all kinds of employment groups can enjoy undifferentiated public employment services in any region of Hebei Province[4-6].

Since the beginning of the new century, the public employment service level of Hebei Province has been developing continuously, and the public employment service system has been improving day by day. However, there is still a big gap with economically developed provinces and western developed countries. There are also many practical problems in the construction of public employment service system, such as the lack of funds available for public employment services, counties The public employment service departments at the district level do not have a strong sense of hardship and are not fully aware of the importance of public employment services. There are great differences in urban and rural public employment service systems, inconsistent public employment service standards in various cities (regions), large differences in infrastructure construction and service levels, employment difficulties for college graduates and vulnerable groups, and inadequate support for independent entrepreneurship. The level of information construction is low.

2.1 The supporting system of public employment services is not perfect

On January 1, 2010, the measures of Hebei Province for the implementation of the Employment Promotion Law of the people's Republic of China was officially implemented. The measures only stipulated the main work and tasks of public employment service institutions at all levels from the macro policy level, and did not give the workflow process and service standards of public employment service institutions at all levels, At the same time, there is also a lack of assessment methods for the performance and service effectiveness of public employment service institutions at all levels, and there is a lack of specific processes, policies and regulations at the policy implementation and operation level, which directly affects the actual implementation effectiveness of this method.

2.2 Insufficient investment in public employment services

According to the requirements of CS [2011] No. 64, the financial departments at all levels shall use the special funds not less than 1% of the regular general budget revenue for employment, and increase the investment year by year according to the financial growth at the same level, so as to meet the continuous and effective employment work of service institutions at all levels. However, from the current operation status of public employment service institutions at all levels in Hebei Province, the funds of public employment service institutions at the provincial and municipal levels are relatively sufficient, the infrastructure and service hall of public service institutions are relatively perfect, the contents and businesses of public employment services can also be effectively developed, and the fund guarantee mechanism of public employment services is in place. However, in the county, township, street and other public employment service institutions, there are few funds and insufficient capital investment, resulting in the poor implementation of the public employment service system. The infrastructure of public employment service institutions is not perfect, and various public employment services such as job introduction, vocational guidance and employment training cannot be carried out effectively.

At the same time, due to the lack of funds, poor public employment service environment and low service level, there are fewer service objects of public employment service institutions such as counties, towns and streets, which seriously affects the assistance effect of these public employment service institutions and limits their regional employment assistance function.

2.3 There are obvious regional differences in public employment services

Due to the imbalance of regional economic and cultural development and the long-term existence of urban-rural dual economy in Hebei Province, the amount of funds invested in the field of public employment services varies greatly among regions, resulting in great differences in the level of public employment services between regions, urban and rural areas, which seriously affects the effect of public employment services in Hebei Province. On the one hand, in economically developed areas, public employment service institutions can obtain more financial support and have better public employment resources. The overall employment market and environment are also relatively superior. They can provide better employment services for all kinds of employment groups and further promote the better and faster development of the quality and level of local public employment services, to obtain more and better public employment resources. On the other hand, in economically underdeveloped areas and vast rural areas, due to the lack of funds, the public employment service resources mastered by public employment service institutions are also relatively scarce, so they cannot effectively carry out public employment service work like economically developed areas, which seriously restricts the improvement of public employment service level in these areas.

In addition, due to the limitations of objective conditions and development level, there are also great differences in public employment service standards in various regions, which virtually increases the difficulty for employment groups to obtain employment services of the same quality across regions, which is not conducive to the healthy development of public employment service system.

2.4 The informatization construction level of public employment service is low

At present, public employment service institutions at the provincial and municipal levels have opened websites and online service halls, but the service websites in various regions are independent of each other, and the cross regional public employment service function has not been realized. Moreover, the functions of these websites and service halls are relatively single, which cannot realize the guidance and service of the whole business process. At the same time, the lack of public employment information service platform and mobile app covering the whole Hebei province greatly restricts the wide dissemination of public employment service information, and limits the cross regional and non-differentiated development of public employment service in Hebei Province.

3. CONSTRUCTION OF PUBLIC EMPLOYMENT SERVICE SYSTEM IN HEBEI PROVINCE

Through the long-term unremitting efforts of public employment service institutions at all levels in Hebei Province, the overall quality and service level of public employment services in Hebei Province have been greatly improved, the employment market and employment environment at the provincial and municipal levels have been significantly optimized, the overall employment rate of employment groups has been significantly improved, and the social contradiction of structural unemployment has been better alleviated, However, there is still a certain gap from the higher quality and fuller employment required in the report of the 19th National Congress. In order to achieve higher quality and more full employment in Hebei Province as soon as possible, improve the quality of public employment service in Hebei Province, it is imperative to build a more scientific and efficient public employment service system. The specific construction ideas are as follows.

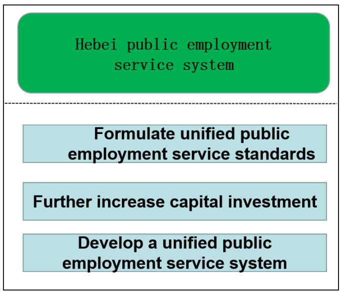

Figure 1. Construction of public employment service system in Hebei Province

3.1 Formulate unified public employment service standards

Looking at the whole Hebei Province, the current public employment service has not established unified service standards and rules, and the service standards and requirements of various regions and departments are also very different. It is impossible to truly realize the objectives and requirements of "let the people run less errands and information services run more", the service pertinence is not strong, and the service efficiency is not high. Therefore, the formulation of the province's unified employment policy, service mechanism, service organization and system guarantee system implementation rules is the only way to ensure the efficient operation of the public employment service system in Hebei Province, and a powerful starting point to promote higher quality and fuller employment in Hebei Province.

In addition, great efforts should be made to improve the laws and regulations related to public employment services, strengthen service standards, continue to promote from top to bottom, provide public employment services to all kinds of employment groups in an all-round way, and further provide institutional guarantee for the healthy development and efficient operation of the public employment service system from the height of top-level design.

3.2 Further increase capital investment

As a basic public service, public employment service needs many grass-roots employments service personnel to work effectively. Therefore, in order to achieve higher quality public employment service, government departments must further increase capital investment to ensure that public employment service departments have enough sources of revenue and expenditure. In terms of fund sources, we should not rely solely on one-time arrangements or temporary financial support. We should establish a fixed mechanism based on demand to ensure that the special funds of public employment service institutions at all levels are enough, institutionalize the source and distribution proportion of special funds, and establish a long-term and effective public employment service fund guarantee mechanism.

While ensuring the capital investment of public service institutions at all levels, it is also necessary to establish a scientific and strict management, use and supervision system of public employment service funds. Improve the scientific and rationality of the use of public employment service funds through scientific, reasonable and perfect procedures for the preparation, implementation and supervision of the budget of special funds for public employment services, to ensure the long-term and orderly development of public employment services in Hebei Province.

3.3 Develop a unified public employment service system

Developing and establishing a unified public employment service system in Hebei Province is an important measure to realize the standardization of public employment service system in Hebei Province. On the one hand, the online access of public employment services and resources can be realized through the public employment service system, so as to improve the efficiency and quality of public employment services; On the other hand, the province's unified public employment service system can realize multiple functions such as big data analysis, employment demand survey and public employment service tracking survey, so as to continuously optimize and improve the public employment service system of Hebei Province through a series of positive feedback mechanisms, make plans for public employment services in advance and carry out public employment services more efficiently.

Through the unified visual identification system of public employment service, public employment service institutions at all levels of provinces, cities and counties set up standard service windows and one-stop service halls according to the organization level, unified public employment service processes and specifications, and promoted standardization construction, so that employment groups can enjoy undifferentiated public employment services in any region of Hebei.

At the same time, relying on the unified public employment service platform and based on the mobile Internet, we will build a universal intelligent public employment information service platform and mobile app for the whole province, comprehensively promote the construction of public employment service system based on the mobile Internet, simplify and optimize business handling processes, realize data sharing, implement online business handling system, and realize employment consultation Self-service for job introduction, employment formalities handling and system guarantee.

4. CONCLUSION

Public employment service has always been an important function of government public departments to solve employment problems and alleviate employment pressure. It is an important matter related to social stability and economic development. This paper puts forward effective countermeasures based on the current situation and existing problems faced by the public employment service system in Hebei Province. Aiming at the problems of imperfect supporting system, insufficient capital investment, obvious regional differences and low level of information construction. This paper puts forward the idea of constructing the public employment service system of Hebei Province by formulating a unified public employment service standard, further increasing capital investment and developing a unified public employment service system.

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Mental Health Evaluation System Based on K-Means Clustering

Yaxun Dai[1, 2], Bingbing Shi[2], Runsheng Lu[3]*
[1]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2] School of Artificial Intelligence, North China University of Technology, Tangshan 063210, China;
[3]School of Mechanical Engineering, North China University of Science and Technology Tangshan 063210, China;
[*]Corresponding Author.

Abstract: Psychological quality is very important for people. In the process of our growth, mental health problems will hinder the growth of minors, so there is an urgent need to study the mental health problems of teenagers. Firstly, the missing values and abnormal values are filled through data preprocessing. By analyzing the distribution of evaluation scores of minors in this area, it is concluded that the psychological status of minors in this area is mostly in sub-health state, and the total standard rate of mental health is 34.1%; Secondly, according to the three indicators of internalized psychological problems, externalized psychological problems and developmental distress, 1476 students are divided into four categories by K-means clustering algorithm: complete health, large psychological problems and low developmental distress, serious externalized psychological problems and certain developmental distress, prominent psychological problems and serious developmental distress. Ten psychological problems of minors in this area were analyzed, and the severity ranking was obtained: obsessive-compulsive symptoms>learning pressure>emotional imbalance>paranoia>anxiety>interpersonal relationship>depression>maladjustment>psychological imbalance>hostility; It also analyzes the impact of gender differences on mental health, and comes to the conclusion that in terms of depression and anxiety, girls are significantly more serious than boys, and in terms of psychological imbalance, boys are significantly more serious than girls. In view of the above research results, we put forward the following suggestions: firstly, schools should further strengthen the mental health education of minors, change the "score only theory" and effectively reduce the learning burden of middle school students. Secondly, they should pay more attention to obsessive-compulsive disorder, teachers and parents should pay attention to communication methods, give them enough patience and understanding, and take care of the unstable emotions of minors, Avoid further deterioration of the relationship between teachers and students and family relations.

Keywords: K-means clustering; Evaluation system; Internalization psychology

1. PROBLEM ANALYSIS

Firstly, by analyzing the distribution of evaluation scores of minors in this area, it is concluded that the psychological status of minors in this area is mostly in sub-health state, and the total standard rate of mental health is 34.1%; Secondly, according to the three indicators of internalized psychological problems, externalized psychological problems and developmental distress, 1476 students are divided into four categories by K-means clustering algorithm:

- Category I: completely healthy (456 persons)
- Category II: large psychological problems and low development problems (378 people)
- Category III: serious externalized psychological problems with certain development problems (351 people)
- Category IV: prominent psychological problems and serious developmental problems (271 people)

Then ten psychological problems were counted, the severity of different psychology was analyzed, the mean and sum of the scores of each index were calculated, and the severity of 10 psychological problems were ranked: obsessive-compulsive symptoms>learning pressure>emotional imbalance>paranoia>anxiety>interpersonal relationship>depression>maladjustment>psychological imbalance>hostility; Finally, it analyzes the impact of gender differences on mental health, and comes to the conclusion that in terms of depression and anxiety, girls are significantly more serious than boys, and in terms of psychological imbalance, boys are significantly more serious than girls.

Based on the above analysis, we draw the following conclusions:

- The mental status of minors in this area is mostly in sub-health state, and the total standard rate of mental health is 34.1%;
- Obsessive-compulsive symptoms, learning pressure and emotional instability are more serious;
- In terms of depression and anxiety, the situation of girls is significantly more serious than that of boys; In terms of psychological imbalance, boys are obviously more serious than girls.

Based on the above problems, we put forward the following suggestions: (1) schools should first further strengthen the mental health education of minors; (2) Guardians of minors and schools should pay more attention to obsessive-compulsive disorder; (3) Schools and parents need to change the "score only theory", effectively reduce the learning burden of middle school students and increase the time for extracurricular activities and social practice; (4) Minors are extremely unstable emotionally and psychologically. Teachers and parents should pay attention to communication methods, give them enough patience and understanding, take care of minors' unstable emotions, and avoid further deterioration of teacher-student relations and family relations.

2. ANALYSIS OF STUDENTS' MENTAL HEALTH

2.1 ANALYSIS ON THE RESULTS OF MENTAL HEALTH EVALUATION SYSTEM FOR MINORS

The model evaluation scores of 1456 minors are drawn into the distribution histogram as shown in the figure below. The number of boxes is set to 5, and the x-axis interval is evenly divided. From the figure, it can be seen that the psychological status of adolescents in this area is dominated by sub-health, followed by complete health, the least completely unhealthy, and the overall mental health status is relatively general.

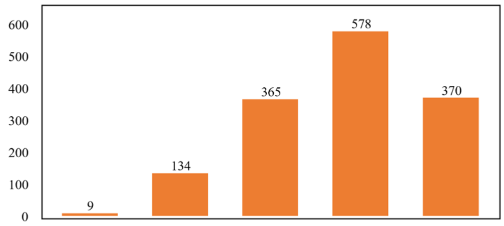


Figure 1 model evaluation score

In order to have a more detailed understanding of the mental health status of minors, we then conducted a further analysis. According to relevant data, personal mental health standards need to meet the following conditions at the same time:

- The score of the questionnaire is between 1-2, which means that the minor's overall mental health is good;
- The score below the line is between 30-39, which means that the minor has a good learning and living state;
- Among the internalized factors of anxiety, depression, paranoia and psychological imbalance, there is only one factor score>2, which means that the minor has at least three common emotional regulation abilities;
- Among the externalized factors of hostility, obsessive-compulsive disorder and emotional imbalance, the factor score of obsessive-compulsive disorder is ≤ 3 points, and the factor score of hostility and emotional imbalance is ≤ 2 points, which means that the minor has a relatively balanced psychology;
- Among the source factors of interpersonal relationship, learning pressure and maladjustment, the factor score of learning pressure is ≤ 3 points, and the factor score of interpersonal relationship and maladjustment is ≤ 2 points, which means that the minor basically does not have the problem of adaptation obstacles.

Table 1 general situation of mental health of minors in this area

Emotional factor	1	2	3	4	5	6	7	8	9	10
nothing(%)	19.3	79.0	92.4	83.3	89.1	77.5	56.0	91.1	71.2	89.7
light(%)	62.0	20.1	7.2	16.4	10.9	22.2	38.0	8.8	27.1	10.1
moderate(%)	18.4	0.9	0.3	0.4	0.07	0.4	6.0	0.1	1.7	0.2
Heavier(%)	0.5	0.07	0.07	0	0	0	0.1	0	0	0
serious(%)	0	0	0	0	0	0	0	0	0	0

Note: 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 in the table respectively represent obsessive-compulsive symptoms, paranoia, hostility, interpersonal tension and sensitivity, depression, anxiety, learning pressure, maladjustment, emotional imbalance and psychological imbalance in the mental health assessment scale for middle school students.

The results of descriptive statistics show that the total compliance rate of minors' mental health in this area is 34.1%, of which the scores of the questionnaire are between 1-2, indicating that all have good mental health status and no serious mental problems; The proportion of offline scores ranging from 30 to 39 is 58.9%, indicating that nearly half of the minors in the region have problems in learning and living conditions; Among internalization factors, the proportion of anxiety factor score ≤ 2 is 85.6%, the proportion of depression factor score ≤ 2 is 93.8%, the proportion of paranoid factor score ≤ 2 is 82.3%, the proportion of psychological imbalance factor score ≤ 2 is 94.8%, and the proportion of at most one factor score ≤ 2 is 93.9%, It shows that minors in this area basically have good emotional self-regulation ability.

Among the externalization factors, the proportion of obsessive-compulsive disorder factor score ≤ 3 points and hostility and emotional imbalance factor score ≤ 2 points is 70.7%, indicating that most of the minors in this area have relatively balanced psychology; Among the developmental distress factors, the factor score of learning pressure ≤ 3 and the factor score of interpersonal relationship and maladjustment ≤ 2 account for 81.7%, indicating that most minors in this area can better adapt to the environment. It can be seen that the mental health of minors in this area is basically good, but the overall compliance rate is very low, and there are still major psychological problems, Among them, the compliance rate of offline performance is the lowest, and we need to focus on the learning and living conditions of minors in this area.

2.2 CLUSTERING OF MINORS WITH DIFFERENT PSYCHOLOGICAL CHARACTERISTICS

In order to classify and discuss the students with different psychological characteristics, 1476 students were classified by K-means clustering algorithm according to the three indexes of internalized psychological problems, externalized psychological problems and developmental distress.

2.2.1 PRINCIPLE OF K-MEANS CLUSTERING ALGORITHM

K-means algorithm is one of the commonly used algorithms in the field of machine learning. Firstly, K objects are randomly selected as the initial clustering center. Then, the distance between each object and each seed cluster center is calculated, and each object is assigned to the nearest cluster center. Cluster centers and the objects assigned to them represent a cluster. Once all objects are assigned, the cluster center of each cluster will be recalculated according to the existing objects in the cluster. This process will be repeated until a termination condition is met. The termination condition can be any of the following:

(1) No (or minimum) objects are reassigned to different clusters.

(2) No (or minimum) cluster centers changed again.

(3) The sum of squares of errors is locally minimum.

Divide the sample set into k classes, which minimizes the following formula:

$$E=\sum_{j=1}^{k}\sum_{x_i\in\omega_j}\left\|x_i-m_j\right\|^2$$

m_j is the centroid of class J. if you want to design an algorithm to obtain the global optimal solution, you must complete C (n, K) clustering and find the clustering result that minimizes e, while K-means clustering is an algorithm to obtain the local optimal solution.In this paper, Euclidean distance is used for distance measurement. The formula of Euclidean distance in n-dimensional space is:

$$D=\left(\sum_{i=1}^{n}(x_i-m_i)^2\right)^{1/2}$$

Description of K-means clustering algorithm:

(1) Select k centroids from n samples;

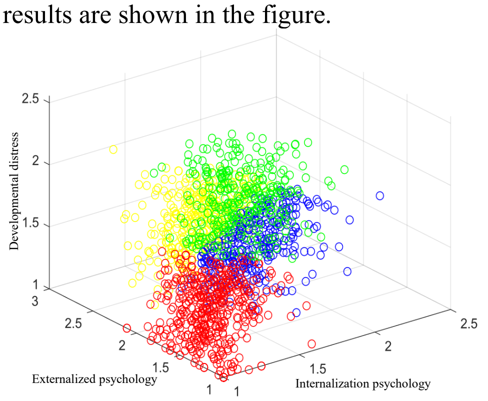
(2) Assign each x in the data set to the cluster represented by the nearest centroid MJ;

(3) After allocation, the centroid will change. Calculate the new centroid and E value;

(4) Repeat (2) and (3) until the maximum number of iterations is reached or the difference between the newly calculated e value and the E value obtained in the previous iteration is less than a given threshold.

2.2.2 CLUSTERING RESULTS

When the number of iterations is 15, there is no change or only slight change in the cluster center, so convergence is realized. 20 samples are missing in the clustering process, and the number of effective samples is 1456. Finally, these 1456 students are classified into four categories, and the results are shown in the figure.



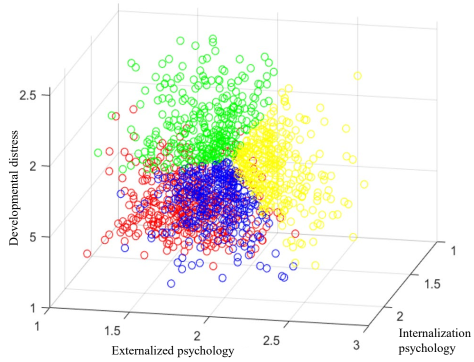


Fig. 2 clustering results

2.2.3 CLUSTER RESULT ANALYSIS

The clustering centers of each category are shown in the following table:

Table 2 final cluster center

Cluster center	1	2	3	4
Internalized	1.218	1.527	1.498	1.689
Externalized	1.517	1.720	2.140	1.825
Developmental distress	1.268	1.539	1.686	1.987

According to the cluster center and sample mean of each class, the cluster members are analyzed and the following conclusions are obtained:

➢ Category I: completely healthy (456 persons)

Totally healthy students are the largest of the four types of students. The remarkable characteristics of these students are internalized psychological problems, externalized psychological problems and developmental problems. They are at the lowest level among 1476 students. They can maintain a good state of vitality, good popularity and promising future development in their daily study and life.

➢ Category II: large psychological problems and low development problems (378 people)

The internalized and externalized psychological problems of this kind of students are relatively at a high level, while the developmental distress is at a medium level. This kind of students have more negative psychology, and there will be some phenomena of anxiety, hostility, paranoia and obsessive-compulsive disorder in their daily life, but it has not had a great impact on their adaptation to school, interpersonal relations and curriculum learning.

➢ Category III: serious externalized psychological problems with certain development problems (351 people)

The main performance of this kind of students is that the internalized psychological problems are at a low level, but the externalized psychological problems are serious, which has caused developmental problems to a large extent. The daily characteristics of this kind of students are hostility and obsessive-compulsive disorder, which affect the interpersonal relationship and adaptation in school.

➢ Category IV: prominent psychological problems and serious developmental problems (271 people)

This kind of students is the least among the four types of students. The remarkable characteristics of this kind of students are internalized psychological problems, externalized psychological problems and developmental problems, which are at a high level among 1476 students. All kinds of psychological problems are more serious in daily learning and life, and have a great impact on their adaptation, interpersonal relationship and curriculum learning in school, There is an urgent need for psychological counseling, as well as teachers' care and guidance.

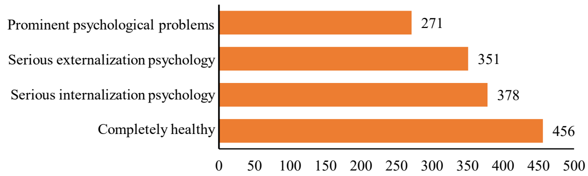


Figure 3 number of minors in four categories

2.2.3 severity of different psychological problems

Make statistics on the ten psychological problems given in the topic and analyze the severity of different psychological problems. First, calculate the mean and sum of each index of 1456 students. The results are shown in the table below:

Table 3 data of 10 indicators

factor	mean	sum	ranking
compulsive	2.4	3499.64	1
pressure	1.879	2736.53	2
imbalance	1.617	2354.85	3
bigotry	1.583	2304.62	4
anxiety	1.5203	2213.53	5
Relationships	1.513	2202.53	6
depression	1.386	2017.83	7
adaptation	1.373	1998.72	8
imbalance	1.3496	1965.04	9
Hostile	1.323	1926.93	10

Visualize the mean of the score of the ten indicators:

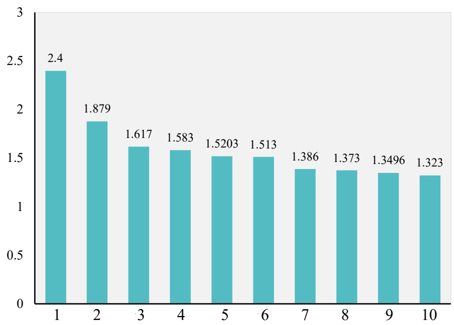


Figure 4 The mean of the score of the ten indicators

We also calculated the radar map of the various factors in the area to more visually reflect the severity of the various psychological problems:

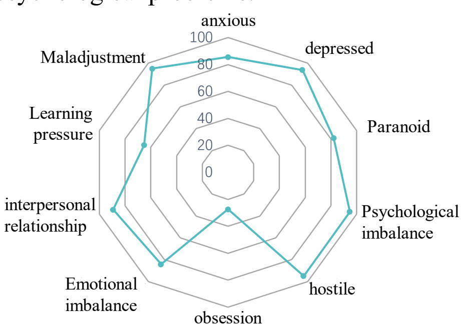


Figure 5 The compliance rate of various factors for minors in the region

The severity of these 10 psychological problems was ranked: obsessive-compulsive symptoms>learning pressure>emotional imbalance>paranoia>anxiety>interpersonal relationship>depression>maladjustment>psychological imbalance>hostility; It is known that the most serious psychological condition of students in the area is obsessive-compulsive symptoms. Obsessive compulsive disorder is a type of anxiety disorder. Its causes are complex. There is no accurate conclusion in medicine. Although mild obsessive compulsive disorder does not affect normal life, the incidence rate of obsessive compulsive disorder among young people is rising rapidly. Moreover, obsessive-compulsive disorder has become one of the 20 diseases that cause the heaviest disease burden among young people aged 15-25. Therefore, guardians of minors and schools should pay more attention to obsessive-compulsive disorder, deeply understand the negative impact of obsessive-compulsive disorder on students' study and life, and find and treat it early.

The second is learning pressure. In recent years, with the rapid development of economy and society, people's pace of life is faster and faster, and the defects of exam oriented education are increasingly exposed. Primary and secondary school students bear more and more learning pressure, which has exceeded their affordability of their age. Excessive learning pressure will cause a series of psychological and health problems, It will even threaten the lives of minors. Therefore, in order to solve the psychological problems of minors, the top priority is to reduce the learning pressure and truly implement the slogan of reducing the burden.

The third problem is sometimes hot and sometimes cold. According to the questionnaire in the attachment, emotional imbalance is manifested in the attitude and emotion of learning, teachers, family members and classmates. Teenagers are an important turning point in life and a transitional period of semi childish and semi mature physical and mental development. Their emotions are both naive and simple left in childhood and thoughtful in adulthood, full of uncertainty. Therefore, guardians and schools should give certain understanding and patience when the situation of minors is unstable, and give good guidance to avoid the expansion of negative emotions, Create unnecessary contradictions.

The remaining seven psychological problems are paranoia, anxiety, interpersonal relationship, depression, maladjustment, psychological imbalance and hostility. These problems occur from time to time among students, but the situation is not too serious, but the relevant departments should also take precautions to prevent these psychological problems from further deterioration.

3. EVALUATION REPORT ON MENTAL HEALTH OF MINORS

Aiming at the mental health problems of minors in this area, the team studied the psychological questionnaire data of 1500 middle school students in this area and found that minors in this area generally have certain psychological problems, which are manifested in obsessive-compulsive symptoms, interpersonal tension and sensitivity, paranoia, anxiety, academic pressure, etc, Through further modeling and data analysis, we draw the following conclusions:

- The overall psychological status is sub-health;
- Obsessive-compulsive symptoms, learning pressure and emotional instability are more serious;
- In terms of depression, the situation of girls is significantly more serious than that of boys; In terms of psychological imbalance, boys are obviously more serious than girls.

Based on the above problems, we put forward the following suggestions:

(1) First of all, the school should further strengthen the mental health education of minors, give full play to the main role of the school, take the mental health education of students as an important part of the quality education curriculum, cultivate students to learn positive cognition, try to avoid negative emotions, guide students to correctly treat setbacks and effectively improve students' ability to resist setbacks, Establish a correct outlook on life and values, so as to change the current situation of students' mental sub-health.

(2) Guardians of minors and schools should pay more attention to obsessive-compulsive disorder, deeply understand the negative impact of obsessive-compulsive disorder on students' study and life, and find and treat it early.

(3) Both schools and parents need to change the "score only theory", effectively reduce the learning burden of middle school students, and increase the time for extracurricular activities and social practice, so as to understand the personality, interests, ideals and other abilities of minors, give priority to encouragement and guidance, and help children establish a good self-awareness, We should not pay too much attention to food, clothing, housing and transportation and academic performance, while ignoring the concern for their mental health.

(4) Minors are in the critical period and transition period of physical and mental growth, and their emotions and psychology are extremely unstable. Teachers and parents in the class should pay attention to the way of communication, give them enough patience and understanding in case of contradictions and conflicts, and do not blindly stand high above others, so as to prevent further intensification of contradictions and further deterioration of teacher-student relations and family relations.

Implementing and strengthening the mental health problems of minors is of great significance for cultivating minors' good psychological quality and will quality and promoting the healthy growth and all-round development of minors. In the real implementation, schools should guide parents to change their ideas, understand and master the methods of psychological education, and jointly create a good growth and education environment for children, Cultivating minors' mental health must be "two pronged".

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Analysis Of the Impact of Environmental Degradation on National Long-Term Projects

Zehui Dou[1, 2], Xiaomeng Yang[3], Renfang Wang[3]*
[1]*Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;*
[2]*College of Artificial Intelligence, North China University of Technology, Tangshan 063210, China;*
[3]*School of Science, North China University of Science and Technology, Tangshan 063210, China;*
[*]Corresponding Author.

Abstract: On the one hand, using the ESV model, taking Danjiang Reservoir and oil refinery as examples, the environmental degradation costs were determined to be USD 29, 439, 600 and USD 9, 963, 100 respectively, and the profit and cost-benefit ratio of the refinery from 2014 to 2018 were analyzed. After accounting for environmental degradation, annual profits have declined, and the cost-benefit ratio has begun to decline in 2016. Investors in land use projects need to consider environmental costs as an important factor. On the other hand, using an oil refinery as a research case, using three-dimensional Hermitian interpolation, the cost and profit of the oil refinery in the next 10 years after environmental degradation are predicted. It is estimated that the cost in 2028 will roughly increase by 5 times that of 2016, and after 2019 Profits are negative, showing a downward trend year by year. Serious environmental pollution will have a great impact on an enterprise. Therefore, land use project investors need to take certain measures in the middle and late stages of the project to slow down the speed of environmental degradation.
Keywords: Environmental degradation; ESV; National long-term projects

1. INTRODUCTION

Danjiangkou Reservoir is an important source of water in the mid-line of China's South-to-North Water Diversion Project. The South-to-North Water Diversion Project diverts water from the Taocha Canal Gate of Danjiangkou Reservoir in the upper and middle reaches of the Han River, passes through Fangcheng Pass, the watershed of the Yangtze River and the Huai River, along the Tangbai River Basin and the Huanghuai Sea. A channel was excavated on the western edge of the plain, and it passed through the Yellow River through a tunnel near Zhengzhou, Henan, and flowed north along the west side of the Beijing-Guangzhou Railway to Tuancheng Lake in the Summer Palace in Beijing. The central line mainly provides domestic and industrial water to more than 20 cities in Henan, Hebei, Beijing, and Tianjin along the water delivery line. The main water canal is 1, 277 kilometers long, and the main water canal to Tianjin is 154 kilometers long. When the first phase of the project was planned, the annual water transfer volume was 9.7 billion cubic meters, and it is expected that it will eventually reach 13 billion cubic meters per year.

In order to better meet the transportation needs of water sources, Danjiangkou Reservoir was constructed again in 2012, and the dam was heightened, so that the water level of the reservoir rose to a drop zone with a drop of 13m around the reservoir, and an additional 305km of land was submerged. . Due to seasonal fluctuations in the water level, pesticides, nitrogen, phosphorus, and heavy metals accumulated in the surrounding farmland will accumulate near the reservoir, and soil erosion near the reservoir will be serious. The construction of the reservoir will affect some catchment areas and the reservoir bay area. Transformation, the water body is gradually eutrophication, and the water quality in the reservoir area is low. When the water quality is good, it is only close to Class II. When the pollution is serious, the water quality even exists in Class V.

Therefore, we selected the area of the five types of land occupied by Danjiang Reservoir after 2012, including cultivated land, water body, woodland, grassland, and wetland for analysis. The reasons for choosing this project for analysis are as follows:

The reservoir project is a national-level project. In recent years, it has made great contributions to the South-to-North Water Diversion Project. The project benefit is higher, which makes the analysis and research more intuitive and the analysis results more convincing;

The project occupies a vast area of land, the types of land included in the project are diverse, and while the project gains benefits, it also has a certain negative impact on the environment. The ecological problems involved in the analysis of environmental degradation Very comprehensive.

2. EXPERIMENTAL

2.1 PROBLEM ANALYSIS

Based on the existing analysis and model design to evaluate the effectiveness of the model, explore the implications of the model for planners and managers of land use projects. First, establish the Costanza model to effectively evaluate the value of ecosystem services, take the development of Danjiang Reservoir as a case study, establish an ecological service value calculation model, and analyze the weight of support services, human services, regulation services, and supply services provided by the ecosystem. Ratios, determine the most influential services, etc., and explore the enlightenment separately for different aspects.As time goes by, establish a three-time Hermite interpolation model to predict the project cost to project benefit ratio in the next ten years, analyze the cost of land use projects that add environmental costs through the prediction results, and judge that it has been established The practicality of the model.

2.2BUILDING AN ESV MODEL BASED ON COSTANZA

Step1: Index selection.We take the ecosystem services near Danjiangkou Reservoir as the first-level indicator of the study, and divide it into 4 basic second-level indicators according to the environmental characteristics around the ecosystem services, and further divide 9 third-level indicators according to the basic indicators, as shown in Table 1. Shown. The first, second and third level indicators are expressed as:A1\B1\B2\B3\B4\C1\C2\C3\C4\C5\C6\C7\C8\C9.

Table 1 Ecosystem classification and related service indicators

Level 1 system	Level 2 system	Level 1 indicator	Level 2 indicator	Level 3 indicator
Ecosystem	arable land	EcoSystem services	Support service	Conserve the soil
				Maintain biodiversity
	Water body		Humanities Service	Provide an aesthetic landscape
			Regulation service	Gas regulation
	Grass land			Hydrological regulation
				Waste disposal
	Wet lands			Climate regulation
			Provision of services	Raw material production
	Wood land			Food production

Step2: An evaluation model that includes the cost of environmental degradation.It is known that with the long-term development of the project, it will cause a certain amount of impact on the surrounding ecological environment, so the cost of environmental degradation must be included. To evaluate the cost of environmental degradation of the project through the relational formula, firstly, it is necessary to obtain the annual pollution data caused to the surrounding environment since the start of the project, as well as the costs and profits generated since the project was launched. Reflect the environmental degradation cost caused by the land project by multiplying the pollution amount and the value of the unit pollution loss. Let the pollution amount be R (variables can be appropriately increased), the original cost is F, the original profit is P, and the loss per unit of pollution Is B (variables can be appropriately increased), the total loss caused by pollution is B1, the cost after environmental degradation is F_1, the cost including environmental degradation is P_1, the original cost-benefit ratio is C, and the cost-benefit ratio including environmental degradation costs Is C1, the formula is expressed as:

$$\mathrm{B1} = \mathrm{R} * \mathrm{B} \tag{1}$$

$$\mathrm{F1} = \mathrm{F} - \mathrm{B1} \tag{2}$$

$$\mathrm{P1} = \mathrm{P} - \mathrm{B1} \tag{3}$$

$$\mathrm{C} = \frac{\mathrm{P}}{\mathrm{F}} \tag{4}$$

$$\mathrm{C1} = \frac{\mathrm{P1}}{\mathrm{F1}} \tag{5}$$

Finally, a final conclusion can be drawn by comparing the original cost and the current cost (including environmental degradation cost), the original cost-benefit ratio and the current cost-benefit ratio (including environmental degradation cost) through icons, so as to give effective suggestions to project managers and planners.

Step3: Construct the equivalent factor table.Using the more scientific equivalent factor table in China, comprehensively scored by experts, as shown in Table 2.

Table 2 Various types of ecosystem service value equivalent factors table

Level 3	Arable land	Water body	Grassland	Wetlands	Woodland
C1	1.47	0.41	2.24	1.99	4.02
C2	1.02	3.43	1.87	3.69	4.51
C3	0.17	4.44	0.87	4.69	2.08
C4	0.72	0.51	1.50	2.41	4.32
C5	0.77	18.77	1.52	13.4	4.09
C6	1.39	14.85	1.32	14.4	1.72
C7	0.97	2.06	1.56	13.6	4.07
C8	0.39	0.35	0.36	0.24	2.98
C9	1.00	0.53	0.43	0.36	0.33
Total	7.90	45.35	11.67	54.8	28.12

Step4: Build an ESV model[1].The calculation formula is (substitute the data from Table 10 and the theoretical formula):

$$SV_j = \sum_{i=1}^{9} A_j E_{ij}\ (i = 1, 2, \dots, 9; j = 1, 2, \dots, 5) \tag{6}$$

$$SV_i = \sum_{j=1}^{5} A_j E_{ij}\ (i = 1, 2, \dots, 9; j = 1, 2, \dots, 5) \tag{7}$$

$$SV = \sum_{i=1}^{9} \sum_{j=1}^{5} A_j E_{ij}\ (i = 1, 2, .., 9; j = 1, 2, \dots, 5) \tag{8}$$

Step5: Result analysis.

Through calculation and literature review, the economic value of one equivalent factor in China around 2012 is 449.1 yuan/hm², as shown in Table 3.

Table 3 Value provided by various ecosystems per unit area in the project area (yuan/hm²/year)

Type 2	Arable land	Water body	Grass land	Wet lands	Wood land
C1	660.18	184.13	1005.98	893.71	1805.38
C2	458.08	1540.41	839.82	1657.18	2025.44
C3	76.35	1994.00	390.72	2106.28	934.13
C4	323.35	229.04	673.65	1082.33	1940.11
C5	345.81	8429.61	682.63	6035.90	1836.82
C6	624.25	6669.14	592.81	6467.04	772.45
C7	435.63	925.15	700.60	6085.31	1827.84
C8	175.15	157.19	161.68	107.78	1338.32
C9	449.10	238.02	193.11	161.68	148.20
total	3547.90	20366.69	5241.00	24597.21	12628.69

According to the literature, large-scale national projects refer to land development and utilization projects with a national construction investment cost of more than 5 billion yuan and a land area of 2, 000 hm². Small-scale community projects refer to land-use development projects with a capital cost of less than 1 billion yuan in national construction and land development and utilization projects with a land area of less than 50hm2.

Taking the Danjiang Reservoir as the analysis object[2], the distribution of the ecological system area occupied by it is shown in Table 4, and the data is visualized to establish the area distribution map of the ecological area occupied by the reservoir area.

Table 4 Ecosystem area distribution table

	ecosystem	Area/hm²
Danjiangkou Reservoir occupies ecosystem area	arable land	13837.8075
	Water body	1022.75
	grassland	2577.33
	wetlands	3661.445
	woodland	81175.6675

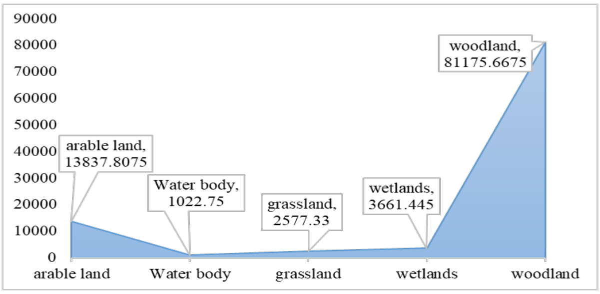

Figure 1 Distribution of ecological area occupied by Danjiangkou Reservoir

It can be seen from the image that the construction of Danjiang Reservoir occupies a large amount of woodland area, and a small part of the water body and grassland area. Because a large amount of woodland is occupied, we believe that this project occupies a great value in humanistic services and adjustment services.

The calculation results are as follows:

Table 5 Calculating results of the ecological service value of different ecosystems in Danjiang Reservoir

	arable land	Water body	grassland	Wet lands	woodland	total	Percentage
B1	154.7	17.6	47.6	93.4	3109.7	3423.0	17.99%
B2	10.6	20.4	10.1	77.1	758.3	876.4	4.61%
B3	239.3	166.2	68.3	720.2	233.5	1427.5	7.50%
B4	577.3	212.3	144.2	910.5	11458.1	13302.5	69.90%
Total	981.9	416.6	270.2	1801.2	15559.6	19029.5	100.0%
Radio	5.16%	2.19%	1.42%	9.47%	81.77%	100.00%	

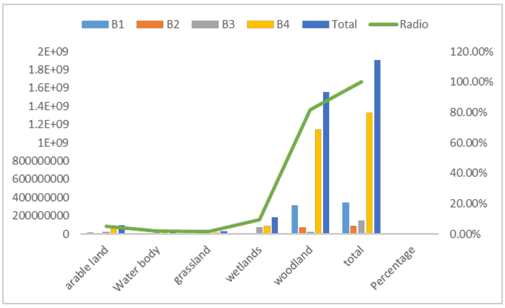

Figure 2 Ecological service value calculation results

The calculated environmental cost of the Danjiang Reservoir construction project is 1, 902948046 yuan. It can be concluded that when the construction of a large-scale project is not included in the cost of the environment, it will have a certain impact on the environment and will have short-term impact on individuals and the country. Economic benefits. However, it is calculated that the benefits of land projects will be lower than the general value after accounting for the cost of ecological services due to environmental degradation. When the project is carried out, considering the ecological environment, more profits can be obtained after long-term accumulation.

The huge value of forest land occupied by this project can be obtained from the image. In terms of forest land occupation, the cost of supply service and support service are the most prominent.

2.3FINAL COST-BENEFIT ANALYSIS

The final cost-benefit analysis needs to be included in the environmental degradation cost. Because the Danjiang Reservoir project's pollution data on the environment is not complete and the degradation cost is not significant enough, the representative oil refinery data is introduced to account for the final cost-benefit of the environmental degradation cost. analyze:

Oil refining is a complex process. The refinery inevitably produces wastewater, carbon dioxide, sulfur dioxide, nitrogen oxides, smoke and other air pollutants. These pollutants are important indicators for measuring environmental pollution, so these indicators are also used to calculate the refining process. The cost of degradation to the environment in

The formula for the degradation cost of various polluted environments is as follows:

$$RL = L * BL \tag{9}$$

RL means sewage degradation cost, L means total sewage discharge volume, BL means sewage treatment unit price

$$RK = K * BL \tag{10}$$

RK represents the purification cost of respirable particulate matter emissions, K represents total respirable particulate matter emissions, and BL represents the unit price of respirable particulate matter purification

$$RU = U * BU \tag{11}$$

RU represents the purification cost of sulfur dioxide emissions, U represents the total sulfur dioxide emissions, and BU represents the unit price of sulfur dioxide purification

$$RD = D * BD \tag{12}$$

RD represents the purification cost of nitrogen oxides emissions, D represents the nitrogen oxides emissions, BD represents the unit price of nitrogen oxides purification

$$RT = T * BT \tag{13}$$

RT represents the processing cost of carbon emissions, T represents carbon emissions, BT represents the unit price of carbon emissions processing

$$Z = RL + RK + RU + RD + RT \tag{14}$$

Z is the total degradation cost.The following is the data of environmental degradation influencing factors of a refinery from 2014 to 2018, as shown in Table 6.

Table 6 Factors Affecting Environmental Degradation of Enterprises

Influencing factors	unit	2014 year	2015 year	2016 year	2017 year	2018 year
Sewage	kt	634.2	451.2	524.4	586.2	563.8
Milli matter	t	159.8	153.8	177.4	158.4	145.1
SO_2	t	1080.2	993.8	1085.4	940.7	940.4
NO_x	t	763.7	676.7	821.3	809	862.1
C	kt	956	950.3	963.6	1049	1049
Oil	kt	3252.5	3487.2	3511.6	3790.1	3903.6

From the data, it can be seen that the annual impact of this project on environmental degradation is mainly sewage discharge and carbon emissions. It can be considered that these two have a greater impact on environmental degradation, thereby affecting the benefits of the project.

Table 7 The company's annual cost-effectiveness (excluding environmental degradation costs)

year	2014	2015	2016	2017	2018
Profit	1922.9 1	8123. 87	19146. 79	24280. 88	23411. 93
Cost	240008 .5	14731 0	116756 .2	172380 .7	225161 .3
Cost-benefit ratio(%)	0.80%	5.51%	16.40%	14.09	10.40

The above table shows the company's profits and costs in recent years, and calculates its annual cost-benefit ratio. The calculation formula is: benefit ratio = profit/cost.

Moreover, we found that the cost of the project was severely reduced in 2015. After surveying the world crude oil prices, we found that due to the decline in world crude oil prices in 2015, the company's costs decreased in 2015, and then there was a trend of recovery in 2017. Table 8 shows.

Table 8 2014-2018 World Crude Oil Price Trend (Unit: USD/Barrel)

2014 year	2015 year	2016 year	2017 year	2018 year
98.95	52.39	43.73	54.19	63.62

By checking the data, we have obtained the unit cost of dealing with various environmental degradation factors in recent years, as shown in Table 9.

Table 9 Processing project cost

Processing item	Sewage	Solid particles	Sulfide	Nitrogen Oxide	carbon emission
Cost (USD/t)	0.14	140.99	148.41	163.25	9.14

By calculating with the above formula, we can get the cost of the project's various environmental degradation.

It can be seen that although sewage discharge and carbon emissions are high, the treatment cost is low, so that the final environmental degradation cost is not obvious. On the other hand, the total amount of data for other influencing factors is relatively low, but the unit volume is processed The cost is high, leading to a significant increase in the final result.

So we use the theoretical formula to calculate the final result of the project after including the environmental degradation cost.The profit and cost-benefit ratio of the previous two times are compared, and the results are as follows:

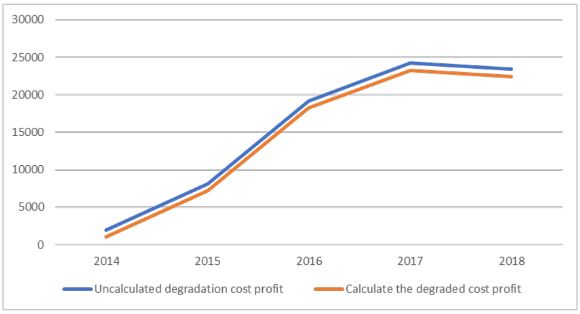

Figure 3 Profit comparison chart

From the above profit comparison chart, it can be found that after accounting for the cost of environmental degradation, the profit has declined, and it has shown an upward trend from 2014 to 2017, and a slow downward trend in 2018. At this time, it can be considered that environmental degradation has begun to affect the project Profit income.

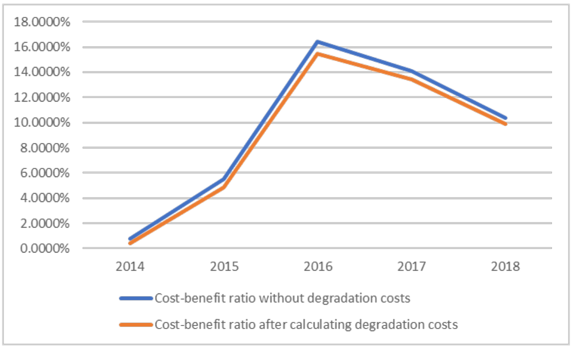

Figure 4 Comparison of cost-benefit ratio

Through the cost-benefit comparison chart, it can be found that after the environmental degradation costs are included, the cost-benefit ratio has a large change from the original benefit ratio, and there is a downward trend. Since 2016, the cost-benefit ratio has dropped significantly, which proves once again After accounting for the degradation cost of the ecological environment, environmental degradation factors have seriously affected the project benefits.

2.4 COST AND PROFIT FORECASTING MODEL BASED ON CUBIC HERMI INTERPOLATION

Taking an oil refinery as an example, we conducted an analysis of the cost-benefit ratio of the refinery under ideal conditions without environmental degradation, and then predicted the cost result of the refinery in the next 10 years through the triple Hermitian interpolation[3]. , As shown below:

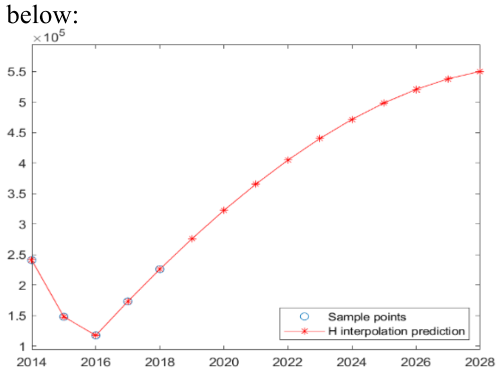

Figure 5 Cost forecast chart

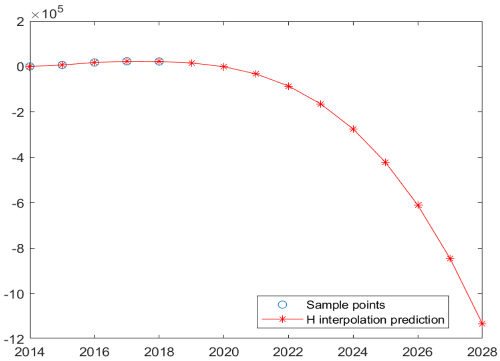

Figure 6 Profit forecast chart

This figure 5 6 shows that when the company does not consider handling environmental issues, the annual cost will eventually rise year by year, and by 2028, the cost of the refinery will increase to nearly five times the 2016 cost due to environmental degradation. It can be seen that companies cannot blindly pursue economic benefits and ignore environmental issues, otherwise they will suffer huge costs due to pollution issues. This is harmful to the company and the environment.

As a result of the huge cost and the conceivable profit, the company will not be profitable from 2020 and will be in bankruptcy, and it will decline year by year until 2028. It can be seen that environmental degradation has caused great harm to the enterprise.

Therefore, whether small land-occupying enterprises or large-scale land-use projects, when they can get the most profit, they must not ignore their investment in the environment. At the same time, it is believed that companies that attach importance to the environment can certainly reduce the harm caused by environmental degradation, and thus have the greatest benefits.

3.CONCLUSION

Over time, establish a cubic Hermitian interpolation model to predict the ratio of project cost to project benefit in the next ten years.

It is estimated that the cost in 2028 will roughly increase by 5 times of 2016, and the profit will be negative after 2019, showing a downward trend year by year. It can be seen that serious environmental pollution will have a great impact on an enterprise. Therefore, land use project investors need to take certain measures in the middle and late stages of the project to slow down the speed of environmental degradation.

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Ordering and Transportation Model Based on TOPSIS and Genetic Algorithm

Jiahao Gao[1, 2], Jiayang Cheng[1, 2], Xiaowang Ding[1, 2]
[1]Mathe Matical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]Yisheng Innovative Education Base, North China University Of Science And Technology, Tangshan 063210, China

Abstract: The construction and decoration company needs to purchase wood fiber and other vegetable fiber materials as raw materials. To ensure the normal operation of the company, the production enterprise needs to formulate a raw material ordering and transportation plan 24 weeks in advance. Our task is to determine which raw material suppliers to select and the corresponding weekly order quantity of raw materials according to the requirements of production capacity. In question 1, firstly, it is recognized that this is an evaluation problem. Then, according to the relationship between order quantity and supply quantity given in Annex 1, the data are integrated and preprocessed. Finally, combined with the knowledge of ratio method and Euler distance formula, a comprehensive evaluation importance model based on TOPSIS is established. In question 2, we choose the top 50 suppliers. Firstly, it is recognized that this problem is a mathematical programming problem. Combined with the natural selection law and 0-1 programming knowledge. Finally, the constraint cond-itions are set according to the orderer's capacity demand, and the minimum supplier number model and minim-um cost model based on genetic algorithm are established.

Keywords: TOPSIS; Genetic algorithm; Euler formula; 0-1 programming

1.INTRODUCTION

This problem can be regarded as supply chain management, which refers to various activities and processes of planning, coordinating, operating, controlling and optimizing the whole supply chain system, and optimizing the total cost.The raw materials used by manufacturing enterprises can be divided into three types:A, B and C.Every year, the enterprise needs to formulate a 24 week raw material ordering and transportation plan in advance to determine the raw material suppliers to be ordered and the corresponding weekly raw material ordering quantity. Due to the particularity of raw materials, the supplier cannot guarantee to supply goods strictly according to the order quantity, and the supply quantity will fluctuate up and down the order quantity line.In order to ensure the needs of normal production, the enterprise should maintain the inventory of raw materials that meet the production needs of two weeks as much as possible.Therefore, the enterprise always purchases all the raw materials actually provided by the supplier.In question 1, through the quantitative analysis of the supply characteristics of 402 suppliers, we can get the suppliers with supply strength, and determine the 50 most important suppliers among these suppliers.In question 2, based on question 1, find out the minimum number of suppliers required to meet the production demand, select which suppliers can minimize the total cost under the condition of meeting the capacity requirements, and formulate the raw material ordering scheme in the next 24 weeks.

2.EXPERIMENTAL

2.1 DATA INTEGRATION AND VISUAL PEPRESENTATION

The supply characteristics of 402 suppliers are quantitatively analyzed.Through data processing, the order quantity and supply quantity of 402 suppliers within 240 weeks are analyzed to obtain the completion degree of the goods supplied by the suppliers. Excluding the impact of external environmental factors, it is considered that each week has the same impact on the supply and order quantity, so it is considered that each part has the same weight.Through the establishment of TOPSIS model, the importance score of each supplier to the enterprise is obtained.According to this index, the 50 most important suppliers are sorted and determined.The general process is shown in Figure 1 .

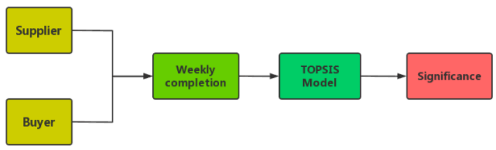

Figure 1. The solution of the first question.

For problem 1, the quantitative analysis of the data in Annex I shows that the supply volume fluctuates within the upper and lower range of the given order quantity.It is specified here that if the fluctuation error does not exceed 5%, it can be regarded as normal supply, that is, the completion degree is 100%.The following calculation formula is given:

$$\alpha = \frac{|K_{ij} - L_{ij}|}{L_{ij}} \quad (1)$$

Where, L_{ij} represents the order quantity of the i-th supplier in week j and the supply quantity of the i-th supplier in week j.

The completion degree is also introduced to represent the order completion degree of the i-th supplier in week j.

The following calculation formula is given:

$$E_{ij} = \begin{cases} 1 & \alpha \le 5\% \\ 1 - \dfrac{K_{ij} - L_{ij}}{L_{ij}} & K_{ij} > L_{ij} \\ \dfrac{L_{ij} - K_{ij}}{L_{ij}} & K_{ij} < L_{ij} \end{cases} \quad (2)$$

After the above operations, the relationship between order quantity and supply quantity can be integrated to facilitate the next step to solve the importance of suppliers to the enterprise.The completion degree of different suppliers in different weeks can be visualized with three-dimensional view, as shown in Figure 2.

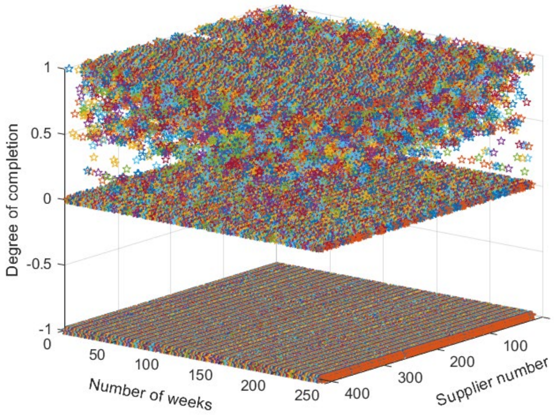

Figure 2.Supplier's weekly completion

The data with negative completion degree appears here because we set the completion degree of suppliers who do not participate in supply this week to - 1, so as to distinguish it from the data with 0 completion degree.As can be seen from the figure, the completion degree of each supplier is evenly distributed, mainly between 0, 0.9 and 1. Combined with the actual situation, the completion ratio of suppliers is either in shutdown, resulting in a completion degree of 0, or there is a certain gap with the order quantity, resulting in a fluctuation of 0.9, which is consistent with the actual situation.

2.2 ESTABLISHMENT OF COMPREHENSIVE EVALUATION IMPORTANCE MODEL

TOPSIS method is mainly applied to comprehensive evaluation problems.The basic principle is to rank the indexes according to the square difference between the optimal value and the worst value, that is, Euler distance. The larger the evaluation value of the evaluation object, the closer it is to the Euler distance of the optimal value and the farther it is to the Euler distance of the worst value.The larger the evaluation value, the closer the evaluation object is to our expected solution [2].

We assume that each supplier has the same weight.Therefore, in the process of establishing the model, the analysis matrix is the completion degree of each supplier in each week.

Set the best and worst values.:Let the optimal value Z_j^+ and the worst value Z_j^- be the maximum and minimum values of the degree of completion in week j, respectively. Mathematical language is interpreted as:

$$Z_j^+ = max\{M_{ij}\}\ (= 1, 2, \cdots, 402)\ (3)$$

$$Z_j^- = min\{M_{ij}\}\ (i = 1, 2, \cdots, 402)\ (4)$$

Calculate the distance.:The Euclidean distance formula is used to calculate the distance to the best and worst value. D_i^+ is the distance between the weekly completion sum of the i-th supplier and D_i^- is the distance between the weekly completion sum of the i-th supplier. The specific formula is:

$$D_i^- = \sqrt{\sum_{j=1}^{m}\left(Z_j^+ - y_{ij}\right)^2}$$

$$D_i^- = \sqrt{\sum_{j=1}^{m}\left(y_{ij} - Z_j^-\right)^2}\ (6)$$

Calculate the evaluation score of the model. C_i is the comprehensive evaluation score of the supplier's i-th supplier. The greater the value, the higher the reliability of the supplier, that is, the greater the importance to the enterprise. The calculation formula is:

$$C_i = \frac{D_i^-}{D_i^+ + D_i^-}\ (7)$$

Where $C_i \in [0, 1]$.

According to the above model preparation, the following mathematical model is established to solve the comprehensive evaluation value of importance:

$$\begin{cases} \alpha = \dfrac{|K_{ij} - L_{ij}|}{L_{ij}} \\ Z_j^+ = max\{M_{ij}\}\ (i = 1, 2, \cdots, 402) \\ Z_j^- = min\{M_{ij}\}\ (i = 1, 2, \cdots, 402) \\ D_i^+ = \sqrt{\sum_{j=1}^{m}\left(Z_j^+ - y_{ij}\right)^2} \\ D_i^- = \sqrt{\sum_{j=1}^{m}\left(y_{ij} - Z_j^-\right)^2} \\ C_i = \dfrac{D_i^-}{D_i^+ + D_i^-} \end{cases}\quad (8)$$

The importance evaluation value and scatter diagram of 402 transporters can be obtained by running the importance evaluation model in MATLAB, as shown in Figure 3.

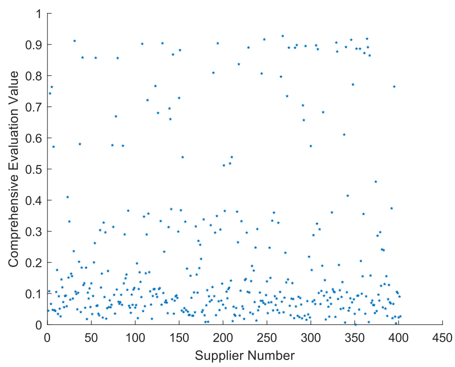

Figure 3. Scatter diagram of evaluation value distribution of 402 suppliers

Sort the importance evaluation values and take the top 50. The results are as shown in Figure 4.

We can see that the highest value can reach 0.9273 and the minimum value is 0.5764. The relative distribution is scattered, which shows that the evaluation accuracy of the model is high and can be used to evaluate the importance of suppliers. In addition, the supply upper limit value of 50 suppliers is given as the weekly supply volume.Since the maximum carrying capacity of each forwarder is 6000 cubic meters, and the requirements in the title are to meet the requirements that only one supplier can find one forwarder every week, the data with the original upper limit value exceeding 6000 becomes 6000.Finally, the top 50 evaluation values are obtained, as shown in Table 1.

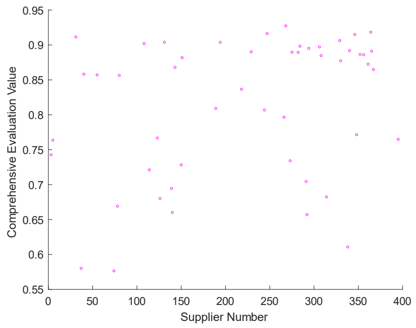

Figure 4.Scatter map of top 50 evaluated values

Table 1. Top 50 suppliers of importancey

Number of top 50 suppliers with evaluation value									
268	364	247	346	31	329	131	194	108	284
306	294	340	365	229	275	282	352	356	308
151	330	361	143	367	40	55	80	218	189
244	266	348	123	395	5	3	273	150	114
291	139	314	126	78	140	292	338	37	74

2.3 ESTABLISHMENT OF THE MINIMUM SUPPLIER NUMBER MODEL AND MINIMUM COST MODEL

Referring to question 1, we should set the selection library to the top 50 suppliers.The first question is to select the least supplier to meet the production demand.This question is solved by 0-1 programming and genetic algorithm.The second question is to solve the most economical ordering scheme.Here we also use 0-1 programming and genetic algorithm to solve it.In the solution of problem 2, we set the supply quantity of each supplier as the fixed value and the maximum value.Since the first question is about how many suppliers are required, we set the loss value to a maximum of 5% to analyze the model.

Since the purchase unit price of class A and class B raw materials is 20% and 10% higher than that of class C raw materials respectively, and 0.6m3 of class a raw materials, 0.66m3 of class B raw materials, or 0.72m3 of class C raw materials are consumed per cubic meter of product.According to the analysis, the price of class a raw materials required for each cubic meter of products is the same as that for ordering class C raw materials, but less class a raw materials are required for the production of each cubic meter of products.Therefore, a needs lower storage space and transportation cost.When selecting suppliers, it has the priority of A> C>B.

Genetic algorithm is mainly used to solve global problems.It is a heuristic learning algorithm that can continuously genetic update when reaching the local optimal solution, and finally reach the global optimal solution.Firstly, for heredity, a population is needed. Each individual in this population has trait differences.After constantly calculating the fitness value of a trait, it determines whether this trait should continue to be inherited or eliminated.After continuous iteration, the traits that are most suitable for growth, that is, the trait genes with the highest fitness, are continuously retained. The population size here can be specified at will and is generally set to more than 50.The gene of a trait represents an independent variable of the model.The coding methods include binary coding, hexadecimal coding and so on.Fitness function is the value of the model under the independent variable.We can encode genes according to different problems, and establish the relationship between fitness function and objective function.The operation process of the algorithm is as shown in Figure 5:

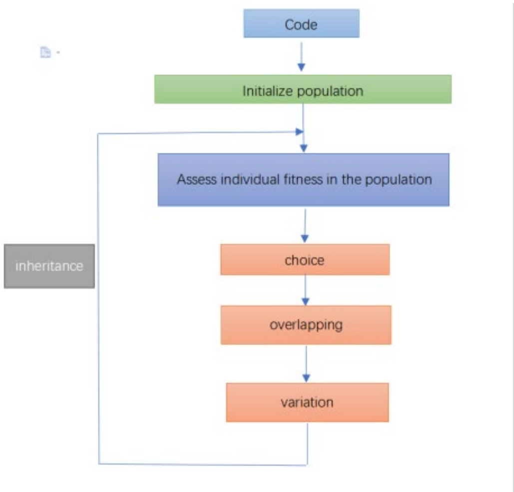

Figure 5. Flow chart of genetic algorithm

For 0-1 planning, we can set 1 as participating in supply and 0 as not participating in supply.This method can be applied to the process of random population genes in genetic algorithm, which simplifies the coding process.

Firstly, the mathematical expression of 0-1 programming is introduced:

$$\beta = \begin{cases} 0 \text{ Not participating in planning} \\ 1 \text{ Participate in planning} \end{cases} \quad (9)$$

Where β represents individual participation.

The selection matrix is introduced as all gene fragments of the whole population.Because randomly generated gene sequences are more in line with the actual needs. Therefore, there is the following formula:

$$M_{xi} = round(rand(0,1)) = \begin{pmatrix} M_{11} & M_{12} & \cdots & M_{1,i} \\ M_{21} & M_{22} & \cdots & M_{2i} \\ \vdots & \vdots & \ddots & \vdots \\ M_{x1} & M_{x2} & \cdots & M_{xi} \end{pmatrix} \quad (10)$$

Where, M_{xi} indicates the value of the i-th supplier corresponding to the x-th individual.

Through the analysis of the problem, we can also roughly limit the number of occurrences of 1, so as to achieve the optimal solution quickly and accurately.

From the selection matrix, we can see that one row of the matrix represents the participation of all individuals in the selection library. We choose to set the number of suppliers in the selection library as the gene length. Namely:

$$length = i \quad (11)$$

Where length represents the gene length and i represents the number of individuals in the selection library.

In the second question, the objective function is to solve the minimum number of suppliers satisfying the production relationship.At this time, we can select the fitness function as the number of 1 in each row of the selection matrix.In the continuous iterative process, there will certainly be individuals who meet the production requirements and have the least number of 1. Described in mathematical language as:

$$minF(M_{xi}) = min(k_i)$$

$$\begin{cases} if(M_{xi} == 1)\ S_i = S_{i-1} + \dfrac{G_i}{Y_\varepsilon} \geq Limit_j \\ Y_\varepsilon = \{0.6, 0.66, 0.72\}, \varepsilon = 1, 2, 3 \end{cases} \quad (12)$$

Where S is the total transportation volume of all selected suppliers, which is equivalent to the production capacity of the manufacturer this week.$G_i$is the supply quantity of the selected supplier. Y_ε represents the corresponding conversion ratio under different categories. $Limit_j$ indicates the capacity to be met in week j.

In the second question, the objective function is the minimum cost. At this time, if the larger the fitness value and the lower the genetic cost, the inverse proportional function is introduced. The specific calculation formula is:

$$\delta = \frac{1}{S} \quad (13)$$

For the model establishment of problem 2, first list all objective functions: minimum number of suppliers and minimum cost.Here, we respectively set the calculation fitness function as the condition to be satisfied by the minimum cost in the genetic algorithm, and then set the condition satisfied by the minimum number of suppliers in the objective function, which will be experienced in each genetic algorithm.This setting can better traverse the minimum number of suppliers.

The specific model is as follows:

$$\begin{cases} length = i \\ minF_1(M_{xi}) = min(k_i) \\ maxF_2(M_{xi}) = max(\delta) \\ M_{xi} = round(rand(0,1)) = \begin{pmatrix} M_{11} & M_{12} & \cdots & M_{1,i} \\ M_{21} & M_{22} & \cdots & M_{2i} \\ \vdots & \vdots & \ddots & \vdots \\ M_{x1} & M_{x2} & \cdots & M_{xi} \end{pmatrix} \quad (14) \\ W_\varepsilon = \{1.2, 1.1, 1\}\ \varepsilon = 1, 2, 3 \\ Q_i = Q_{i-1} + G_i W_\varepsilon \end{cases}$$

$$\begin{cases} if(M_{xi} == 1)\ S_i = S_{i-1} + \dfrac{G_i}{Y_\varepsilon} \geq Limit_j \\ Y_\varepsilon = \{0.6, 0.66, 0.72\}, \varepsilon = 1, 2, 3 \end{cases}$$

Solve the minimum supplier quantity model in the first and second weeks.The results are as Figure 6:

the first and second week with the number of iterations

It can be seen from these two figures that the minimum number of suppliers required in the first week is greater than that in the second week because the first week needs to meet the output of two weeks, so this result is correct. Then the minimum cost models of the first week and the second week are solved. The results are as shown in Table 2 and Table 3:

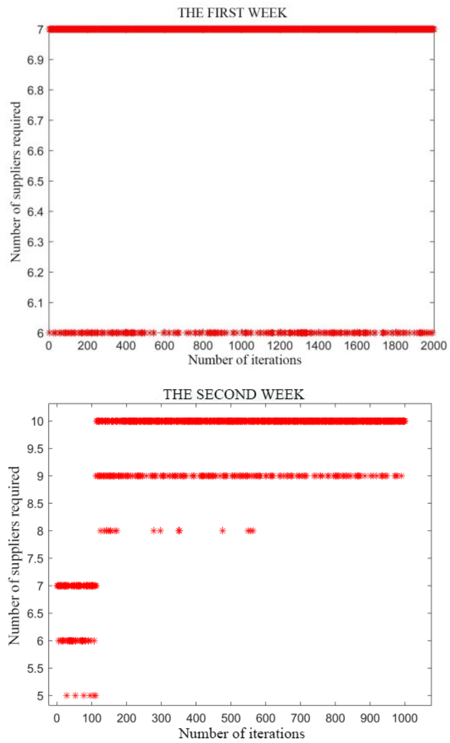

Figure 6. Variation of the minimum number of suppliers in

Table 2. selected suppliers under the condition of minimum cost in the first week

Selected	1	2	3	4	5	6	7	8	9	10
ID	126	139	151	229	282	338	340	348	356	395
Category	C	B	C	A	A	B	B	A	C	A

Table 3. Suppliers selected under the condition of minimum cost in the second week

Selected	1	2	3	4	5	6	7	8	9	10
ID	74	114	131	151	194	273	282	329	338	348
Category	B	A	B	A	C	A	A	A	B	A

From the suppliers and categories selected in the table, we can see that class a products account for the most, which matches the priority we set, and it is verified that selecting class a products can indeed reduce the cost.

3.RESULTS AND DISCUSSION

3.1 EVALUATION OF THE MODEL

On comprehensive evaluation importance model, TOPSIS method is very suitable for finding the relationship between variables under different indicators of the same dimension.It can achieve high accuracy without too much data preprocessing.TOPSIS makes full use of the original data and has less information loss.However, for the index variables in different dimensions, the model can be established only by calculating the weight and constructing the analysis matrix.The so-called best and worst points are not clearly defined, and it is difficult to evaluate some data that can not find the advantages and disadvantages.This method can not solve the problem of evaluation score superposition caused by the correlation between problem indexes.

On the model based on genetic algorithm, Genetic algorithm looks for the problem solution from multiple points in the solution space. With the increase of the number of iterations, there will be more opportunities to approach the global optimal solution, and it is not easy to fall into the local optimal solution. Genetic algorithm can deal with almost any problem. However, when encountering multiple variables, the coding process is complex. A single algorithm can not accurately express the constraints. and too fast to enter the convergence of the iteration.

3.2 APPLICATION OF THE MODEL

In this model, the completion degree of each supplier is determined by TOPSIS method, and then the suppliers that meet the needs are obtained. In this model, each supplier has the same weight, but in real life, the goods supplied by each supplier are different.If we combine TOPSIS method with entropy weight method to analyze the actual situation, we can make the model more accurate and more suitable for practical problems.

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Comprehensive Evaluation of Mental Health of Minors Based on Random Forest

*Yuanli Jia[1, 2, *], Bing Zhang[1, 2], Weixiang Wang[1]*
[1]Mathematical Modeling Innovation Lab, College of Science, North China University of Science and Technology, Tangshan 063210, China;
[2]Mathematical Modeling Innovation Lab, School of Artifical Intelligence, North China University of Science and Technology, Tangshan 063210, China
[*]Corresponding Author.

Abstract: Nowadays, the incidence of minors' psychological and behavioral problems and the prevalence of mental disorders are gradually increasing. The construction of minors' mental health evaluation system is of great significance to the development of all countries. Firstly, According to the data of 1500 middle school students' psychological questionnaire in a certain area, a comprehensive analysis model based on random forest and establish a multi-level evaluation system from the perspective of learning, life, interpersonal communication and self-consciousness. Secondly, the mental health status of minors is analyzed and visually displayed from three aspects. First, analyze the gender performance differences between men and women, and compare the similarities and differences between men and women under different mental state levels. Second, analyze the difference of grade span and compare the changes of various factors. Third, Pearson correlation analysis is used to analyze the correlation between the 10 dimensions of questionnaire scores and offline scores, that is, the correlation between self cognition and explicit characteristics. Finally, according to the research results, write a report to the school and parents and put forward suggestions.
Keywords: Mental health of minors; Random Forest; Comprehensive evaluation; Sensitivity analysis

1. INTRODUCTION

Minors are the backbone of the future society. Their quality is related to the rise and fall of the country. Their mental health is related to the hope and happiness of each family. However, with the further acceleration of the pace of life, the intensification of competition, the increase of learning pressure, the increase of family instability and many other reasons, the mental health problems of minors show a high incidence trend. Many families and minors urgently need effective guidance and help.

In order to explore the important factors affecting the mental health of minors, we mainly studied from the following questions:

Problem 1 Establish the mathematical model of juvenile mental health evaluation system.

Problem 2 Analyze the mental health status of minors in this area.

Problem 3Write a report to the school and parents on the analysis results and suggestions.

2.MODEL ASSUMPTIONS

Assumption1: Assuming that the questionnaire distribution is random and objective.

Assumption2: The situation of the transferred minors is the psychological situation in a long period of time in the near future.

Assumption3: The psychological state of the transferred object is not affected by extreme conditions.

Assumption4:The respondents fill in the questionnaire objectively and accurately.

3.EXPERIMENTAL

3.1 STOCHASTIC FOREST PREDICTION MODEL

In order to facilitate the training and prediction of the prediction model, the random forest algorithm is used to select the index features and select the features with great influence, so as to reduce the number of features when establishing the model, analyze the contribution degree of each feature index on each tree in the random forest, take the average value, and finally compare the contribution between the features, which is measured by Gini index as the evaluation index.

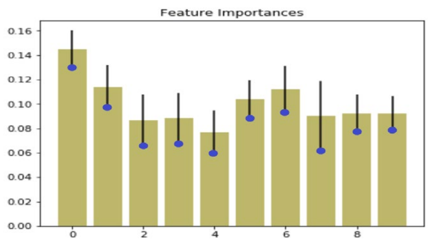

Figure 1. Characteristic importance box diagram

Table 1. Characteristic Importance Box Diagram

Weight	Value	Weight	Value
W_1	0.1701	W_6	0.1087
W_2	0.1130	W_7	0.1347
W_3	0.0591	W_8	0.0648
W_4	0.0887	W_9	0.0913
W_5	0.0783	W_{10}	0.1361

3.2 ESTABLISH AN ONLINE PERFORMANCE COMPREHENSIVE EVALUATION MOEDL

According to the survey results of 1500 students, it is found that the total score of students' mental health is determined by online and offline factors, and the online score is mainly evaluated by the average score of 10 factors. The values of 10 limiting factors, each of which is the result of averaging the six questions given in the questionnaire. In order to clearly and objectively understand the impact indicators of the 10 factors, establish a comprehensive evaluation model with the bottom level of life, learning, interpersonal relationship and self-consciousness, and analyze the impact of the bottom level objective factors on the 10 factors and the impact weight of each factor on online performance.

The online performance comprehensive evaluation model has three layers as a whole: the target layer is the target value of the score on the line, the factor layer is 10 limiting factors of obsessive-compulsive symptoms, paranoia and hostility, and the objective influence layer mainly considers four aspects: learning, life, interpersonal relationship and self-consciousness.

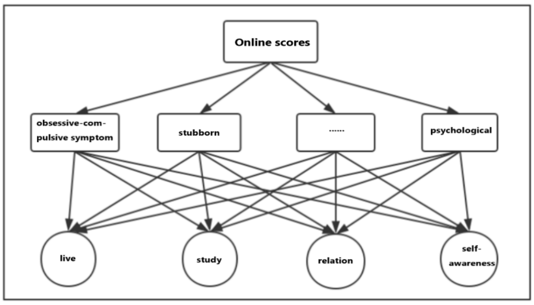

Figure 2.System diagram of online performance comprehensive evaluation model

When determining the weight of each factor at each level, the consistent matrix method proposed by Saaty et al. Is used to compare the two elements in pairs to obtain the degree of importance.Using the method of stacking graph, the influence weights and eigenvalues of the indicators are obtained from 10 matrices, and then stacked together to study the influence degree relationship of the four influence factors in all aspects, so as to increase the hierarchy and integrity of the model.

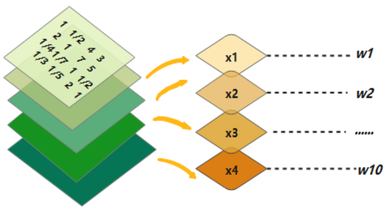

Figure 3. Pairwise comparison matrix and weight diagram

Calculating weight by arithmetic average method.The index weights of 10 limiting factors are calculated by the same method.

The results show that there is no significant difference in the evaluation of online performance among the 10 indicators, but the overall impact on the indicators is still different. The biggest impact is obsessive-compulsive symptoms, and the smallest impact is maladjustment.

Table 2. Factor Weight Value

Objective factor weight/limit factor	X_1	X_2	X_3	X_4
Obsessive-compusive symptom	0.2884	0.5323	0.0675	0.1118
stubborn	0.2275	0.1013	0.3412	0.3300
hostile	0.1801	0.1433	0.5255	0.1511
relation	0.1437	0.0341	0.7362	0.0860
depressed	0.4309	0.1117	0.1382	0.3192
anxiety	0.4568	0.0938	0.0617	0.3877
Academic stress	0.0747	0.8211	0.0041	0.1001
maladjustment	0.3569	0.3008	0.2106	0.1407
Emotional imbalance	0.2392	0.2567	0.1930	0.3111
Psychological imbalance	0.4310	0.3502	0.1080	0.1108
sum	2.8292	2.7453	2.3860	2.0485

3.3 ANALYSIS OF MENTAL HEALTH STATUS OF MINORS

This paper analyzes the mental health status of minors from three aspects: the graded distribution of mental health status of minors and the distribution of mental health status of male and female students at all levels; Influencing factors of psychological grade difference of minors; The correlation between minors' online self cognition and offline explicit characteristics.

On the whole, the grades of minors' psychological status from a to f are 4%, 49%, 38%, 7%, 1% and 1%. It can be concluded that only 4% of minors in this area have good psychological status, and the rest have problems, which are mainly reflected in grades B and C, that is, their psychological status is basically good, but there are problems such as psychological pressure. Only a few of them have major psychological problems.From the perspective of men and women, the psychological status of men and women in grades A to C basically accounts for the same proportion, while in grade F, the proportion of women is much higher than that of men. Therefore, it highlights that women are more likely to have strong psychological pressure or strong psychological problems.

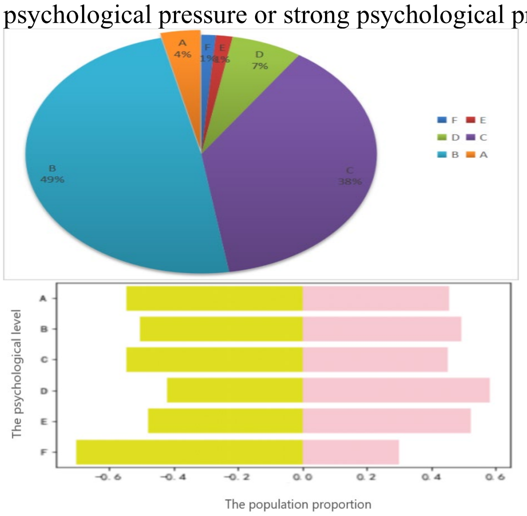

Figure 4. Proportion of psychological grade

Understanding the main factors affecting the differences between psychological grades is of great significance for the treatment of adolescent mental diseases and the prevention of the deterioration of mental diseases. Calculate the average value of all samples of each factor under the adjacent level, compare the changes of each factor for visual display.

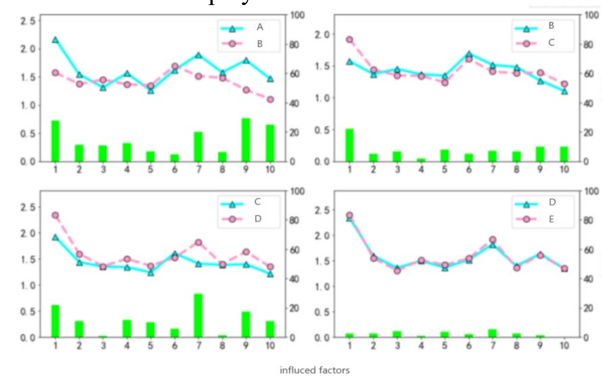

Figure 5. Comparison chart of grade difference factors

There were significant differences in obsessive-compulsive symptoms, learning pressure, emotional imbalance and psychological imbalance between grades A and B; There were significant differences in obsessive-compulsive symptoms between grades B and C; There were significant differences in obsessive-compulsive symptoms, learning pressure and emotional imbalance between grades C and D.Compulsive symptoms, learning pressure, emotional imbalance and psychological imbalance are the main factors reflecting the difference of grade span. Reducing the learning pressure of minors, paying attention to the state of emotional fluctuation and psychological balance and timely counseling are of great significance to the treatment of minors' psychological diseases and the prevention of the deterioration of psychological diseases.

The psychological grade evaluation system is judged from both online and offline. Online is the self cognitive reflection of the respondents, and offline is the reflection of explicit characteristics such as face-to-face diagnosis. Through Pearson correlation analysis, it is of great significance to analyze the correlation between explicit characteristics and self cognition, explore the explicit factors of minors' psychological problems, and make specific research on implicit factors and the formulation of diagnosis scheme.

Correlation between self cognition and explicit characteristics of minors

The psychological grade evaluation system is judged from both online and offline. Online is the reflection of respondents' self cognition, offline is the reflection of explicit features such as face-to-face diagnosis, and through Pearson correlation analysis to analyze the correlation between explicit features and self cognition, we can see which psychological problem factors of minors are easy to be influenced by parents, Teachers and doctors have observed that this is of great significance for the specific research and evaluation of other factors that are not easy to observe and the formulation of diagnosis scheme.

It can be seen from the relevant heat map that obsessive-compulsive symptoms, learning pressure, tension and sensitivity of man-machine relationship, emotional imbalance have the greatest correlation with offline performance, so it shows that these factors are most easily observed; Hostility, anxiety, maladjustment and other factors should not be observed by others. Therefore, teenagers are in puberty and are easy to close themselves. Parents and teachers should pay more attention to the subtle changes of teenagers in these unobservable characteristics, so as to prevent them from happening.Considering the comprehensive factors, the relevant thermodynamic diagram is not shown.

3.4RESULT ANALYSIS

In the process of minors' psychological growth, schools and parents play different roles and influence. Based on the results of the comprehensive model, it is found that the most influential factor in the multi-level evaluation system is obsessive-compulsive symptoms, and girls are more likely to have strong psychological pressure or strong psychological problems. Obsessive-compulsive symptoms, learning pressure, emotional imbalance and psychological imbalance are the main factors reflecting the difference of grade span; Obsessive compulsive symptoms, learning pressure, tension and sensitivity of man-machine relationship, emotional imbalance and offline performance are most correlated.

For a long time, school education has a tendency to pay more attention to intellectual education than moral education, one-sided pursuit of test scores and grades, which has caused pressure to students in varying degrees, and made some students fear and tired of learning; Some schools use moral education instead of mental health, and equate ideological education with mental health education. Most schools are not equipped with full-time and part-time teachers for mental health education, and psychological education courses are not included in the teaching plan. In addition, the communication between the school and parents is not enough, and the family and school can not cooperate in the mental health education of students in time. In terms of parents, parents are eager to "hope for success" and put forward too high requirements for their children's academic performance, causing too much pressure on their children. Some parents are impatient and lack of parent-child communication, resulting in their children not talking at home, not talking in their hearts, and even don't like to go home. Some parents' bad words and behaviors also directly affect the mental health and growth of minors.

3.5 A LETTER TO GOVERNMENT, SCHOOL AND PARENTS

The government should strengthen its leadership over mental health education. A municipal coordination group for mental health education for minors was established, headed by the leader in charge and composed of the publicity department, civilization office, education and other departments to clarify the division of labor, fulfill their responsibilities and form a joint force to ensure the persistence and unremitting efforts of mental health education for minors.The municipal psychological counseling center for minors shall be established, and the financial department shall give financial support to the psychological counseling institutions for minors.Promote school mental health education.

Primary and secondary schools at all levels should bring mental health education into the important content of school education, systematically plan and implement it at different levels, actively explore effective ways and methods of mental health education, and formulate assessment and evaluation standards for mental health education in primary and secondary schools as the basis for measuring school work and professional Title Evaluation of mental health education teachers. Regularly carry out psychological survey, establish student tracking psychological files, and carry out targeted group counseling and individual counseling. Contact professional psychological counseling and treatment institutions to help some students with serious problems in time.Give full play to the role of existing professional psychological teachers in the school, establish a database of psychological counseling experts, organize a team of psychological service volunteers, provide professional and free psychological counseling services for minors, and help minors learn psychological self-help. Organize psychological experts to school regularly.

Parents should pay timely attention to their children's mental health, communicate with their children from the aspects of life and learning, and observe their children's ordinary personality and psychological changes. Strengthen the contact with the school, understand the situation of children with school teachers, and enhance the understanding of mental health of minors.Run parent schools well and improve the level of tutoring. Further rationalize the existing leadership system of parent schools, improve the management mechanism, clarify the responsibilities of relevant departments, standardize, regularize and institutionalize parent schools, closely integrate school education, social education and family education, and promote the physical and mental health of minors.

At present, the attention of all levels of society to the mental health status of adolescents is not high enough, and there are problems in the mental health status of some adolescents.What can solve the problem is the social and family environment in which they live.It is hoped that government schools and parents can adopt these suggestions to enhance the protection of minors' mental health.

4.ERROR ANALYSIS AND MODEL IMPROVEMENT

4.1MISSING VALUE FILLING

KNN algorithm is used for missing value filling. Because the default distance super parameter and weight super parameter will be over fitted or under fitted, there will be errors during filling, and the errors will be large.By comparing two different weight parameters, it is found that the weight parameters have little effect. Next, the error value is determined by adjusting different distance parameters.

Then, by adjusting the different values of distance parameters, judge which parameter can minimize the error value. The specific results are shown in the figure below

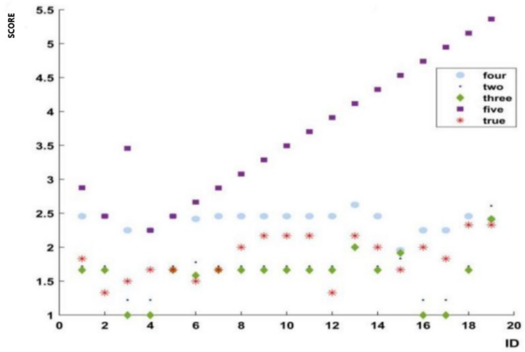

Figure 6. Filling point diagram of ID missing value under different distance parameters

4.2CALCULATION OF INDEX WEIGHT OF COMPREHENSIVE EVALUATION MODEL

It can be seen from question 1 that the weights of 10 limiting factors can be calculated by both methods. Next, the weights of indicators calculated by random forest and those calculated by the established comprehensive evaluation model are compared and analyzed, as shown in the figure below.

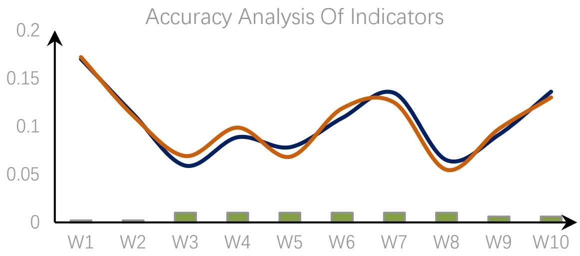

Figure7. Error analysis diagram of index calculation

The index weights of 10 factors calculated by the comprehensive evaluation model established by observing the graph are basically consistent with the weights calculated by the random forest method, and the relative error is within 0.02. However, it is not difficult to find that the parameters of random forest training samples can be changed, so the training results can be adjusted.

4.3 ADJUSTING RANDOM FOREST TRAINING AND TEST SET

Random forest training is a random result, so even if the size of the test set is fixed each time, the training results are different, and the accuracy of the model is also different. After many times of training, it is found that when the size of the test set is fixed, the accuracy of the model is within a certain range.

The size of the test set is fixed by the method of bad circulation training, and the range values of different test set sizes are obtained. The calculation results are as follows:

Table 3. Range Of Model Accuracy For Different Test Set Sizes

Test_size	Precision
0.5	0.9111-0.9377
0.4	0.9213-0.9412
0.3	09001-0.9122
0.2	0.8901-0.8973

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The Utility Model Relates to A Plastic Compression Device

Yueyong Jiang[1,2*], Yumei Gong[1,3], Jiayang Lu[2]
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Mechanical Engineering, North China University of Science and Technology, Tangshan 063210, China;
[3]School of Materials Science and Engineering, North China University of Science and Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: In contemporary society, plastic water bottles are widely used because of their good plasticity, low price, convenient transportation and other reasons. Mainly used for beverage, food, pickles, honey, dried fruit, edible oil, agricultural and veterinary medicine and other liquid or solid disposable plastic packaging containers. Plastic bottles are not easy to break, low cost, high transparency, food grade raw materials and so on. However, while plastic water bottles provide us with all kinds of convenience, they also produce a lot of plastic water bottle waste. With plastic water bottles occupy large size, after the use of plastic water bottles in the process of recycling and distributing internal gas remains, therefore in the process of collecting plastic bottle recycling concentration, transport plastic water bottles of great space, seriously affected the transportation efficiency, reduces the space utilization, increase the use of Labour. Plastic recycling station is in urgent need of recycling plastic water bottles to improve the market income of plastic water bottles, plastic water bottles need to be recycled in the living environment to prevent environmental pollution and occupy space. The recycling of plastic water bottles is generally recovered by manpower, collected by small and medium-sized recycling stations, and transported to large recycling stations for collection and recycling. Therefore, a plastic water bottle compression device with high recovery efficiency, moderate volume and reliable performance is urgently needed. Next, this article will introduce a plastic water bottle compression device, which is suitable for plastic recycling workers and small plastic recycling plants. The device is a plastic water bottle compression device with simple structure, high efficiency, convenient use, easy to carry, saving manpower and time, low labor intensity, low production cost and high degree of automation.

Keywords: Food; Pickles; Honey; Dried Fruit; Edible Oil

1. INTRODUCTION

Feasibility: According to statistics, the global consumption of plastic bottles reached 480 billion in 2016 alone.Six billion bottles are produced annually in the Beijing region alone, according to the data. In 2016, for example, less than half of the plastic bottles sold worldwide were recycled and only 7% were remade into new bottles, with the rest going to landfills or the sea.Plastic waste in the ocean causes hundreds of thousands every year The death of Marine animals also appears in the food chain in the form of microplastics and plastic fragments. A large number of studies have even confirmed that the toxic ingredients of polystyrene foam can penetrate into food and drink, affecting human health, and white pollution is severe.

Therefore, the plastic recycling market is in a blank period. The continuous tapering plastic water bottle compression device is easy to carry, highly automated and efficient. It can compress plastic bottles to reduce the space occupied by plastic bottles, facilitate the recycling of plastic water bottles and help reduce white pollution.Based on the large consumption of plastic bottles and the low recycling efficiency at present, this device has a certain feasibility.

Device description: put the water bottle into the feed port, start the engine to make the compression center wheel rotate.Due to gravity, the water bottle falls naturally between the two teeth of the compression center wheel and the two spring baffles.The center wheel drives the spring baffle to push the water bottle to carry out circular movement. After the water bottle fully enters the compression chamber, the thimble in the exhaust mechanism extends out due to the action of the CAM, and the water bottle is punctured due to the joint action of the thimble and the inner wall.With the rotation of the central compression wheel, the curvature of the inner wall of the compression chamber gradually increases, that is, the distance between the inner wall and the outer side of the central compression wheel is gradually shortened. The water bottle is compressed under the joint action of the central compression wheel and the inner wall, and the discharged air is discharged through the air holes on the cover mechanism on both sides.When passing through the discharge port, the thimble is pushed out again by the CAM to push the water bottle out of the discharge port.The plastic water bottle falls into the collecting device through the water bottle collecting baffle.

Scope of application: all manufacturers need to carry out plastic bottle compression.

Its characteristics are: 1. Simple structure, high efficiency, easy to use, easy to carry, save manpower and time, low labor intensity, high degree of automation, can be used for small and medium-sized recycling occasions.

2. The mechanical vibration of the device can be reduced and the complexity of the device can be reduced by replacing the compression plate with the inner wall of the compression chamber and the fixed frame.

3. Using the CAM mechanism to control the thimble, the plastic water bottle can be punctured at the same time of compression, shortening the operation cycle of the device.

4. Products do not use expensive technology design, low production cost.

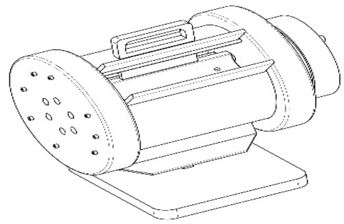

FIG.1 Device effect drawing

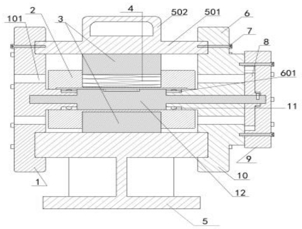

FIG. 2 Front section view of the device

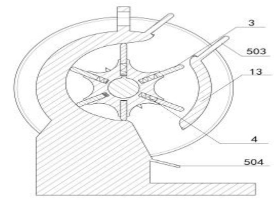

FIG. 3 Side section view of the device

The device comprises a supporting mechanism, a cover mechanism, a transmission mechanism, a compression mechanism, an exhaust mechanism and a compression auxiliary mechanism. The water bottle is placed into the feed port and the engine is started to rotate the compression center wheel.Due to gravity, the water bottle falls naturally between the two teeth of the compression center wheel and the two spring baffles.The center wheel drives the spring baffle to push the water bottle to carry out circular movement. After the water bottle fully enters the compression chamber, the thimble in the exhaust mechanism extends out due to the action of the CAM, and the water bottle is punctured due to the joint action of the thimble and the inner wall.With the rotation of the central compression wheel, the curvature of the inner wall of the compression chamber gradually increases, that is, the distance between the inner wall and the outer side of the central compression wheel is gradually shortened. The water bottle is compressed under the joint action of the central compression wheel and the inner wall, and the discharged air is discharged through the air holes on the cover mechanism on both sides.When passing through the discharge port, the thimble is pushed out again by the CAM to push the water bottle out of the discharge port.The plastic water bottle falls into the collecting device through the water bottle collecting baffle.

Figure 4 working diagram of the device

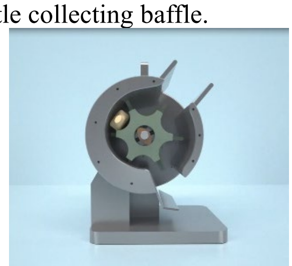

Figure 5 working diagram of the device

As can be seen from the figure 4 and figure 5, when plastic bottles into the device, is blocked by two baffle, then center wheel to rotate, the internal plastic water bottles into the device, because central axis in nested CAM mechanism, in figure 5, thimble was CAM Pierce the plastic water bottles, so removed from the plastic bottle lid in the process of compression this one step, can greatly improve the efficiency of compression.After the plastic bottle is punctured, the distance between the outer shell and the intermediate shaft is shrinking, until the plastic bottle is compressed and finally the plastic bottle flows out of the device from the lower outlet.

From the process, we can see that the device is just a clever use of mechanical structure, including some springs, baffles, cams, during the use of the process, it can be fixed on the truck to transport goods, through the connection of the motor to provide power, the exit can be nested collection bags, users only need to put water bottles into the entrance.

Improvements: An electric push rod can be used, which reduces the complexity of existing units and eliminates the need for hydraulic power components.However, the electric push rod may have some problems such as insufficient propulsion force.In order to improve its level of automation, you can use SCM to control the whole device, improve the overall operation efficiency of the device, higher degree of automation;Because the device cannot compress multiple plastic water bottles at one time, intermittent mechanism auxiliary feeding device can be used instead of manual feeding device, which can cooperate with the device to perform the action of feeding - compression - feeding intermittently, improving the working efficiency of the device.In addition, the fixer that can be put into multiple plastic water bottles at one time can also be added, which can compress multiple plastic water bottles at the same time instead of one plastic water bottle at a time, thus improving the compression efficiency of the device.In addition, electromagnetic push rods can be used. Compared with compression cylinders, electromagnetic push rods can provide greater compression force, and at the same time save the complexity of the device, and do not require hydraulic power components to provide power.

Market analysis: the average service life of each machine can reach 10 years, the rotation speed is 10r/min, the compression efficiency can reach 3600 / hour, the rotation speed can be adjusted according to the type of compressed plastic water bottle and the compression effect, each plastic water bottle is expected to save 70% space.

Continuous shrinkage plastic water bottle compression device unit price: 600 yuan

Cost per unit: 350 yuan Profit per unit: 250 yuan

In 2016 alone, 480 billion plastic bottles were consumed worldwide. Six billion bottles are produced annually in the Beijing region alone, according to the data. In 2016, for example, less than half of the plastic bottles sold worldwide were recycled and only 7% were remade into new bottles, with the rest going to landfills or the sea.

From the news of the 2017 Recycled Plastic Industry

Summit, in 2016, the national domestic recycled plastic reached 18.78 million tons, according to the current price of 5,000 yuan a ton, the output value of more than 100 billion yuan. And plastic bottles as one of the army, recycling market is also worth imagining.

For example, in business districts, recycling stations and recycling centers, the recycling market of plastic water bottles is huge. Plastic water bottle recycling devices with high recycling efficiency, moderate volume and reliable performance are very attractive to consumers in this market.In addition, the product price is moderate, more widely favored by consumers.In addition, schools and residential areas are also potential consumption places of this product, and there is a large market space.

At present, there is no domestic manufacturer specializing in the production of plastic water bottle compression device, plastic horizontal compression device is still in the patent application stage.As far as the existing patents are concerned, the balance between occupied volume and compressed quantity can not be achieved, and the automation degree is low, the stability is poor, and the work efficiency is very low.In addition, there is no clear demand positioning and market prospect planning, and the actual operation and application are poor, and the market value is low.

To sum up, the market for plastic water bottle recycling is huge. The plastic water bottle recycling device greatly improves the recycling efficiency, reduces the transportation space and recycling cost, and will be strongly supported by the recycling station, transportation, recycling center and plastic water bottle manufacturers.

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A Progressively Optimal Steel Cutting Plan Based on Linear Programming

Xueying Jing[1*], Renfang Wang[1], Zehui Dou[2,3]
[1]School of Science, North China University of Science and Technology, Tangshan 063210, China;
[2]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[3]College of Artificial Intelligence, North China University of Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: Small, medium and micro enterprises are in a unique position in my country's economic and social development and are an important force in national economic and social development. Therefore, when banks provide loans to small, medium and micro enterprises, they will evaluate the credit risks such as the strength and reputation of the enterprise to determine the final credit strategy. In order to give the bank id credit strategy when the total annual credit is fixed, it is necessary to determine and quantify the indicators that affect the corporate reputation risk, and then determine whether the default is to be used as the dependent variable to establish a credit risk model based on Logistic multiple regression. The final result is 96.9 %, indicating that the evaluation model is good. Since there is a non-linear relationship between the customer churn rate and the annual interest rate of different reputation levels, the function between them is fitted. The bank's income is the objective function, and the bank's annual interest rate and quota are the decision variables, and a credit strategy based on multiple linear regression is established. The model shows that the maximum income that the bank can achieve is 3,178,407 yuan. In addition, considering that companies will encounter emergencies, such as natural disasters, accidents, 1public health incidents, and social security incidents, they need to be analyzed separately. In the establishment of credit risk models, the impact index of emergencies should be added to adjust the multiple linearity. The returned credit strategy model can obtain the corporate compliance rate, loan interest rate, and loan amount under five corporate categories.

Keywords: Logistic multiple regression; fitting; Topsis algorithm; multiple nonlinear regression

1.INTRODUCTION

In recent years, my country's small, medium and micro enterprises have developed rapidly, and their role and status in economic and social development have gradually increased. Small, medium and micro enterprises are in a unique position in economic and social development. They are a new force in national economic and social development and an important force in promoting domestic employment, people's livelihood, and entrepreneurial innovation.

However, due to the relatively small scale of small, medium and micro enterprises lacking mortgage assets, and the evaluation of the strength and reputation of enterprises by banks is an important part of bank loan management. In today's society, banks lend to small, medium and micro enterprises with few mortgage assets. It is bound to bear greater risks. Therefore, banks scientifically formulate credit strategies for small, medium and micro enterprises based on credit strategies, corporate transaction information and influence, and lend to companies with strength and stable supply-demand relationships, which have high reputation and low risk. Of companies providing interest rate concessions and establishing a scientific, accurate, and reasonable credit strategy to accurately determine risks is a necessary means to safeguard their own development interests, which is of great significance.

2. EXPERIMENTAL

2.1 CREDIT RISK ASSESSMENT MODEL BASED ON LOGISTIC MULTIPLE REGRESSION

Here yi (indicating whether the contract is in default) has only two possible values, yi=1 (no) and yi=0 (yes), and the conditional probability of yi [1] is as follows:

$$\pi(x_i) = P(y_i = 1|x_{i1}, x_{2i}, \dots, x_{pi}) = e^{\beta_0+\sum_{k=1}^{p}\beta_k x_{ki}}/(1 + e^{\beta_0+\sum_{k=1}^{p}\beta_k x_{ki}} \quad (1)$$

$$P(y_i = 0|x_{i1}, x_{2i}, \dots, x_{pi}) = 1/(1 + e^{\beta_0+\sum_{k=1}^{p}\beta_k x_{ki}}) \quad (2)$$

Among them, xi=(x1t,x2i,...,xpi)' are p-dimensional covariates, i =1,2,...,n. n is the number of observation points, and p is the number of covariates.Take the natural logarithm of odds to get a linear function

$$\mathrm{g}(x_i) = \beta_0 + \sum_{k=1}^{p}\beta_k x_{ki} = x_i{}'\beta \quad (3)$$

Where $\pi(x_i)=P(y_i=1|x_{1i},x_{2i},\ldots,x_{pi})$ is the probability of occurrence of the event when the value of $x_{1i},x_{2i},\ldots,x_{pi}$ is given given the independent variable.

First, determine the factors affecting corporate credit risk, including corporate life span, corporate strength, credit rating, and sales void rate, which are expressed as {x_1,x_2,x_3,x_4,x_5}. Then, quantify these indicators as follows:

Life time w1: For output invoice information, count the invoice time in it, and determine the life span of each enterprise (unit: month). See Appendix 1.

Corporate strength w2: The strength of an enterprise's ability depends mainly on its sales ability and purchasing ability. The sales ability reflects the popularity of the company, and the purchase ability reflects the scale of the company. Therefore, the strength of the enterprise is quantified as the sum of the purchase price tax and the sum of the output price tax.

Reputation level w3: Set the reputation level to 1. For example, if the company's reputation level is A, the reputation rating A is 1, and the rest B, C, and D are 0. The results are shown in Appendix 1.

Output void rate w4: Count the number of voided invoices in the output invoices of each enterprise, and put the number of voided votes in all the votes of the enterprise to obtain the output void rate of each enterprise. According to economic significance, the higher the output void rate, the higher the number of votes that the company has returned, and the worse the company's credit rating.

In order to establish the corporate reputation risk, the reputation risk is based on whether the default is a dependent variable, and the result of default is yes or no, so logistic multiple logistic regression is used to predict the default rate of the company.First, determine the logistic multiple regression results according to SPSS, as shown in the following table:

Table 1 Model fitting information

Model	Model fitti-ng condition	Likelihood ratio test		
	-2 log-likelihood	chi-quare	degree of reedom	significance
Intercept	26.825	-	-	-
finally	18.352	8.473	6	.005

Read the last column through the model fitting information table, and the significance P=0.000<0.1 indicates that the model has statistical significance and the model passed the test.Therefore, the function equation can be obtained as:

$$y = \frac{1}{1 + e^{-(0.009*x_1 + 6.49x_2 + 1.621x_3 - 17.879x_{41} - 0.373x_{42} + 2.548x_5)}} \quad (4)$$

The original data is classified by the obtained decision equation, and the comparison result with the original classification is as follows:

Table 2 Classification table

Measured	predict		
	0.00	1.00	Correct percentage
0.00	95	0	100.0%
1.00	3	0	0.0%
Overall percentage	100.0%	0.0%	96.9%

The final accuracy rate is 96.9%, the category accuracy rate is high, and the model classification result is good.

2.2 THE RELATIONSHIP BETWEEN CUSTOMER CHURN RATE AND LOAN INTEREST RATE FOR DIFFERENT CREDIT RATINGS

The total loan amount required by various enterprises will decrease as the customer churn rate increases. After processing the data in Annex III, it is found that the customer churn rate and interest rate of the three types of enterprises present a high degree of secondary correlation, as shown in the figure. Therefore, we fit the relationship between interest rate and customer churn rate as shown in Figure 1.

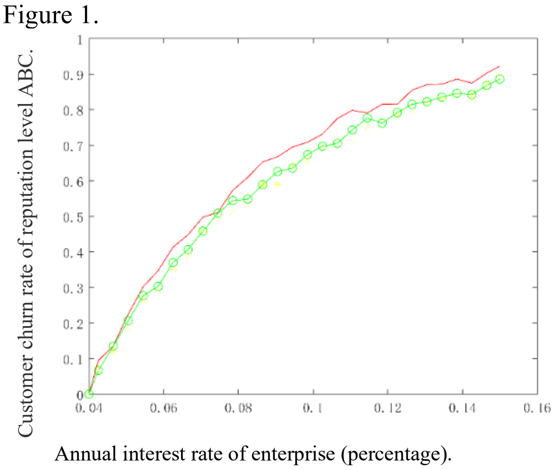

Figure 1 shows the relationship between annual interest rate and customer churn rate

Through analysis, it is found that the annual interest rate is a non-linear function of customer churn rate. Therefore, the relationship between the annual interest rate and the customer churn rate is determined using the fitting algorithm, which can be expressed as:

$$\begin{aligned} f(a_1) &= 0.1423a_1^2 - 0.02316a_1 + 0.4538 \\ f(a_2) &= 0.141a_2^2 - 0.01025a_2 + 0.04433 \\ f(a_3) &= 0.1308a_3^2 - 0.000446a_3 + 0.04389 \end{aligned} \quad (5)$$

The respective relationships are shown in fig. 2, fig. 3 and fig. 4.

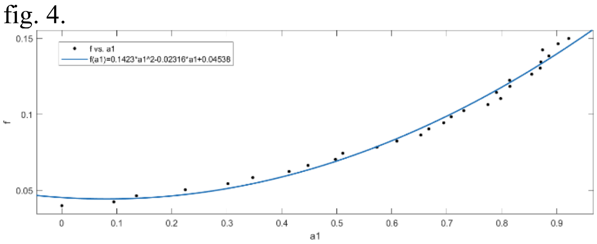

Figure 2 Relationship between customer churn rate and annual interest rate under Grade A.

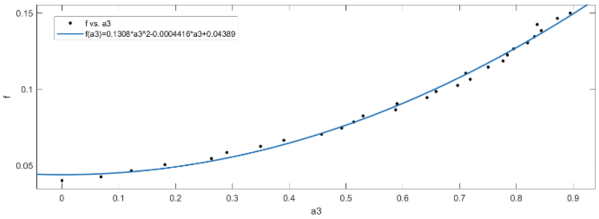

Figure. 3 Relationship between customer churn rate and annual interest rate under B level.

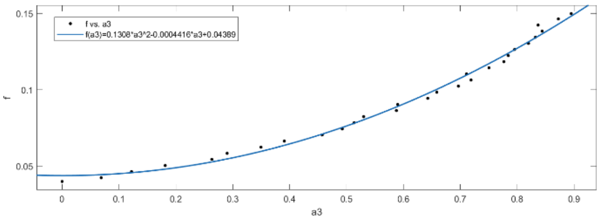

Figure. 4 Relationship between customer churn rate and annual interest rate under C level.

2.3 CREDIT STRATEGY MODEL BASED ON REGRESSION OF MULTIPLE NONLINEAR MODELS

Non-linear programming is a method of solving optimization problems with one or several non-linear functions in the objective function or constraint conditions.

The model first selects the appropriate target variable and decision variable, and establishes the functional relationship between the target variable and the decision variable, which is called the objective function. Then the various constraints are abstracted. Get some equations or inequalities that the decision variables should satisfy, which are called constraints. The general mathematical model of the nonlinear programming problem can be expressed as finding the unknowns $x_1, x_2, x_3, \ldots, x_n$, so that they meet the constraints: $g(x_1, x_2, x_3, \ldots, x_n) \geq 0$ and $h(x_1, x_2, x_3, \ldots, x_n) = 0$, and make the objective function $f(x_1, x_2, x_3, \ldots, x_n)$ reach the maximum or minimum. Among them, f, gi, and hi are all real-valued functions defined on a certain subset D (domain) of n-dimensional vector space R_n, and at least one of them is a nonlinear function.

Step1: The establishment of variables. The main consideration when the bank lends to an enterprise is the amount of income that the enterprise generates to the bank. Therefore, determine the bank's income as the dependent variable, and the independent variables are the amount (the money lent to the company) and the annual interest rate.

Step2: The establishment of constraint conditions. Since the amount of bank loans to enterprises ranges from 100,000 to 1 million, according to the size of the enterprise, enterprises are classified into three levels, namely large, medium and small enterprises. The corresponding quota range is shown in Figure 5. And because the annual interest rate limit of banks is 4%~15%.

Step3: The establishment of the objective function. Because the bank's income is the interest added by the enterprise, that is: the product of the annual interest rate and the quota, the objective function is established as:

$$\max\,(a_1 b_1 + a_2 b_2 + a_3 b_3) \tag{6}$$

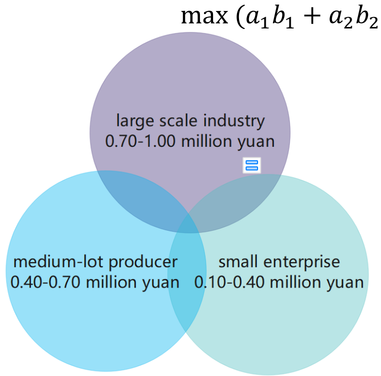

Figure 5 Enterprise's quota classification

Step4: Establishment of nonlinear multiple regression model.Know the constraint conditions and objective function of the nonlinear regression model from Step1, Step2, and Step3, and obtain the model as:

$$\max\,(a_1 b_1 + a_2 b_2 + a_3 b_3)$$

$$S.t.\begin{cases} f(a_1) = 0.1423a_1^2 - 0.2316a_1 + 0.4538 \\ f(a_2) = 0.141a_2^2 - 0.01025a_2 + 0.0443 \\ f(a_3) = 0.1308a_3^2 - 0.000446a_3 + 0.043 \\ 0.04 \leq a_i \leq 0.15 \\ 70 \leq b_1 \leq 100(1 - f(a_1)) \\ 40 \leq b_2 \leq 70(1 - f(a_2)) \\ 10 \leq b_3 \leq 40(1 - f(a_3)) \end{cases} \tag{7}$$

Step5: The bank's optimal credit strategy.

Finally, the quota of the model is $[a_1, a_2, a_3] = [0.07, 0.1085, 0.1476]$, when the annual interest rate is $[b_1, b_2, b_3] = [70, 65.7387, 34.3199]$, the bank's income is the largest, and the maximum income is 3178407 yuan. Based on the optimal return result of nonlinear programming, the bank's optimal credit strategy for an enterprise is obtained [2], as shown in the figure:

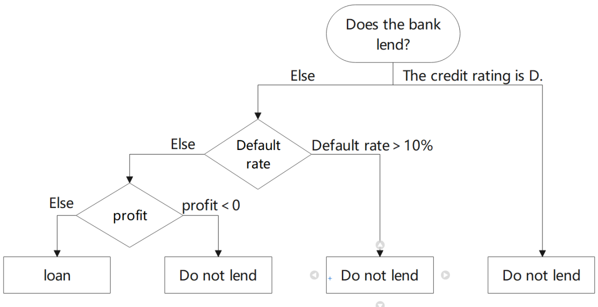

Figure 6 Bank credit strategy

When deciding whether to lend to a company, a bank first considers whether the bank's credit rating is D-level, if it is D-level, it will not lend directly; if it is not D-level, consider the company's default rate, if the company's default rate is greater than 10% , Do not lend directly; if the default rate is less than 10%, the company's annual profit is considered. If the company's profit is less than 0, the bank will not lend directly; if the profit is greater than or equal to 10, the bank will lend, and according to the former's nonlinear programming model Determine the amount and interest rate of the loan.

2.4 Establishment of topsis model based on entropy weight method

This article defines the interval of invoicing time in the company's output information as the lifetime (in months); and screens out invoices with the same invoice number to determine the number of units of the purchaser; based on the number of invalid invoices in the input information and output information, Obtain the invoice invalidation rate of each enterprise.

We extracted six indicators based on the given data: life span, total purchase price tax per unit quantity, total input price tax, output invoice void rate, input invoice void rate. Use the topsis algorithm [3] the comprehensive score of the enterprise.

Proceed as follows:

Step1: We assume that there is an evaluation object (enterprise) and m evaluation indicators. First, the m evaluation indicators are normalized to obtain the normalization matrix:

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1m} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nm} \end{pmatrix} \tag{8}$$

The second is to eliminate the dimensional influence of the data, and to standardize A, by the standardized formula:

$$z_{ij} = x_{ij} / \sqrt{\textstyle\sum_{i=1}^{n} x_{ij}^{\,2}} \tag{9}$$

The standardized matrix of each indicator can be obtained:

$$Z = \begin{pmatrix} z_{11} & \cdots & z_{1m} \\ \vdots & \ddots & \vdots \\ z_{n1} & \cdots & z_{nm} \end{pmatrix} \tag{10}$$

Step2: By calculating the proportion of the i-th sample under the j-th index, the probability matrix P is obtained:

$$p_{ij} = \frac{z_{ij}}{\sum_{i=1}^{n} z_{ij}} \quad (11)$$

Step3: Calculate the information entropy of each indicator, use normalization to obtain the entropy weight of each indicator, and the information entropy calculation formula of each indicator:

$$e_j = -\frac{1}{\ln n}\sum_{i=1}^{n} p_{ij} \ln(p_{ij}) \quad (j = 1,2,\cdots,m) \quad (12)$$

After normalization, the entropy weight of each indicator can be obtained:

$$W_j = d_j / \sum_{j=1}^{m} d_j \quad (j = 1,2,\cdots,m) \quad (13)$$

Define the maximum and minimum values in the standardized matrix:

$$Z^+ = (Z_1^+, Z_2^+, \cdots Z_m^+) = (max\{z_{11}, z_{21}, \cdots z_{n1}\}, max\{z_{12}, z_{22}, \cdots z_{n2}\}, \cdots, max\{z_{1m}, z_{2m}, \cdots z_{nm}\}) \quad (15)$$

$$Z^- = (Z_1^-, Z_2^-, \cdots Z_m^-) = (\min\{z_{11}, z_{21}, \cdots z_{n1}\}, \min\{z_{12}, z_{22}, \cdots z_{n2}\}, \cdots, \min\{z_{1m}, z_{2m}, \cdots z_{nm}\})$$

Define the distance and the minimum distance between the i-th evaluation object and the maximum value as:

$$D_i^+ = \sqrt{\sum_{j=1}^{m}(Z_j^+ - z_{ij})^2} \quad (16)$$

$$D_i^- = \sqrt{\sum_{j=1}^{m}(Z_j^- - z_{ij})^2} \quad (17)$$

Then the unnormalized score of the i-th evaluation object can be calculated:

$$S_i = \frac{D_i^-}{D_i^+ + D_i^-} \quad (18)$$

Finally get the normalized score:

$$\tilde{S}_i = S_i / \sum_{i=1}^{n} \tilde{S}_i \quad (19)$$

Through the above topsis model [4], the comprehensive score of each enterprise is calculated and classified according to the comprehensive score: 0~0.25 is D grade; 0.25~0.5 is C grade; 0.5~0.75 is B grade; 0.75~1 is A grade . You can get the credit rating of each company, some of the ratings are as follows:

Table 3 Evaluation results of part of the corporate reputation

enterprise	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Credit rating	D	A	C	C	C	C	B	C	B
enterprise	10	11	12	13	14	15	16	17	18
Credit rating	C	C	C	D	B	C	C	C	B
...									
enterprise	294	295	296	297	298	299	300	301	302
Credit rating	D	D	D	D	D	C	D	D	D

According to the obtained credit rating, the Fisher discriminant analysis is used to perform category back-judgment, and the life span, the total output price tax, the total input price tax, and the output invoice invalidation rate are used as the evaluation indicators, and 50 of the 302 companies are selected. A company canceled the results of its reputation evaluation, and Fisher's discrimination can be used to obtain the correct rate of discrimination and classification of 302 companies and the classification results of 50 companies.

After category review, it can be found that the 50 enterprise categories are the same as those determined by the topsis entropy method, and there are 96.4% correct classifications of 302 enterprises.

2.5 Establish a non-linear regression credit strategy planning model

On the basis of the first question, still aiming at the largest annual net income of the bank and the best probability of default, a multi-objective planning model is established to find the bank's credit decision to the enterprise.

Step1: The establishment of variables. The main consideration when the bank lends to an enterprise is the amount of income that the enterprise generates to the bank. Therefore, determine the bank's income as the dependent variable, and the independent variables are the amount (the money lent to the company) and the annual interest rate.

Step2: The establishment of constraint conditions. Since the total amount of bank loans to enterprises is 100 million yuan, according to the size of the enterprises, enterprises are classified into three levels, namely large, medium and small enterprises. The corresponding quota percentage is shown in Figure 7. At the same time, the binding range of the bank's annual interest rate is 4% to 15%.

Step3: The establishment of the objective function. Because the bank's income is the interest added by the enterprise, that is: the product of the annual interest rate and the quota, the objective function is established as:

$$\max\,(a_1b_1 + a_2b_2 + a_3b_3) \quad (20)$$

Know the constraint conditions and objective function of the nonlinear regression model from Step1, Step2, and Step3, and obtain the model as:

$$\max\,(a_1b_1 + a_2b_2 + a_3b_3)$$

$$S.t.\begin{cases} f(a_1) = 0.1423a_1^2 - 0.2316a_1 + 0.4538 \\ f(a_2) = 0.141a_2^2 - 0.01025a_2 + 0.0443 \\ f(a_3) = 0.1308a_3^2 - 0.000446a_3 + 0.043 \\ 0.04 \le a_i \le 0.15 \\ 5000 \le b_1 \le 10000\big(1 - f(a_1)\big) \\ 2000 \le b_2 \le 3000\big(1 - f(a_2)\big) \\ 0 \le b_3 \le 2000\big(1 - f(a_3)\big) \end{cases} \quad (21)$$

Step5: The bank's optimal credit strategy.

Finally, the quota of the model is $[a_1, a_2, a_3] = [0.07, 0.11, 0.149]$ under A, B, and C levels, and the annual interest rate is$[b_1, b_2, b_3] = [7500, 2350, 946]$, the bank's income is the largest, the maximum income is 5840426 yuan.

2.6. CREDIT ADJUSTMENT STRATEGY UNDER THE INFLUENCE OF UNEXPECTED FACTORS

Types of emergencies: According to the "Emergency Response Law of the People's Republic of China", emergencies refer to natural disasters, accident disasters, and public Health incidents and social security incidents. Among them, natural disasters refer to abnormal phenomena that occur in nature. The harm caused by natural disasters to human society is often shocking and unpredictable. Most of the major impacts are sudden disasters such as earthquakes, tsunamis, typhoons, floods and other gradual disasters [5]. Accidents and disasters often have disastrous consequences. They occur in the process of people's production and life. They are directly triggered by people's production and activities. They violate people's will and cause a lot of economic losses and other accidents. Public health incidents are emergencies that endanger people's lives and health, such as the new crown pneumonia epidemic. Social security incidents refer to sudden and forceful presses that threaten the peace and security of society and the security of public announcements, such as terrorist attacks and economic security incidents.

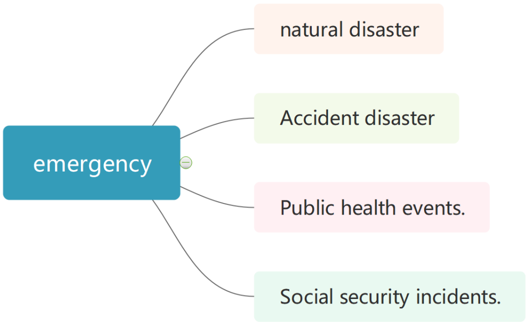

Figure 7 Classification of emergencies

As different emergencies have different impacts on various industries and companies, we build models based on the impact on credit adjustment strategies and analyze the different categories of these four types of emergencies. First, we analyze the four types of emergencies. The impact index is evaluated.

During the outbreak of the new crown epidemic, the government introduced many relevant support policies, including relevant support policies for banks. Through the search of relevant policy information and literature, it can be found that during the period of epidemic prevention and control of stock loans for small and micro enterprises, renewal or extension is due, and the new loan interest rate and interest rate are respectively reduced by 10% according to the original contract interest rate. It can be seen that the annual interest rate Ki of bank loans for corporate lending industry i is reduced to (1-10%) Ki.

According to the data collected by the National Bureau of Statistics, the impact of the outbreak of the new crown epidemic on different industries is different. The incidence of the epidemic on the transportation industry A., the entertainment industry B., the retail industry C., the accommodation industry D., and the catering industry E. The online education industry, financial industry, and information technology industry have played a certain role in promoting the impact. We divide the industry into two categories, online and offline. Among them, the influence of online companies is relatively small and can be ignored. In addition to self-employed outdoor companies, almost all of them have been affected more severely and for a long time. In response to this, the business capabilities of companies in different industries have decreased, and credit risk evaluation indicators have changed accordingly. According to the online survey, the impact of small, medium and micro enterprises is collected, and there is no obvious change in the online industry. Among other industries, micro-enterprises were the least affected, with an overall decrease of 5%, small enterprises as a whole fell by 15%, and medium-sized enterprises were the most affected, with a decrease of 20%.

We divide the evaluation system into four indicators, including life span w1, corporate strength w2, credit rating w3, and sales rejection rate w4.

A logistic regression model was established through the relevant data, and the correlation coefficient of the index in the regression equation was fitted by the index. Build the model as follows:

$$\ln \frac{p_i^{'}}{1-p_i^{'}} = y_0 + y_1 a + y_2 b + y_3 c + y_4 d + y_5 e \qquad (22)$$

Formula (21) can be used to find the compliance rate of 302 companies, where the closer the p'value is to 0, the credit of the loan applicant is poor, and the closer the p'value is to 1, the credit of the loan applicant is better.

Use MATLAB's fmincon function to solve the answer. The bank's credit strategy after comprehensively considering the corporate credit risk and the impact of the epidemic on the company is as follows:

Table 4 Bank credit adjustment strategies

Enterprise category	Enterprise compliance rate	Loan interest rate	Loan amount
A.	32.028%	6.25%	100017
B.	40.439%	9.4%	849863
C.	60.677%	11.2%	999988
D.	34.495%	7.6%	317698
E.	45.9044%	6.4%	100002

3. RESULTS AND DISCUSSION

3.1RESULTS

A credit strategy model based on multiple linear regression is established with the bank's income as the objective function and the bank's annual interest rate and line as the decision variables. It is concluded that when the line of credit is 0.07,0.1085,0.1476, and the annual interest rate is 70,65.7387,34.3199, the bank's maximum income is 3178407 yuan. After that, the credit risk of 302 enterprises was quantified, and the credit rating was determined as Grade A based on TOPSIS algorithm: 0.75 ~ 1; Class b: 0.5 ~ 0.75; Grade c: 0.25 ~ 0.5; Grade d: 0~0.25, and then the credit risk model established by Logistic regression is used to evaluate the risk, and the classification result reaches 96.4%, which indicates the goodness of the evaluation model. Finally, a credit strategy model based on multiple linear regression is established, and it is concluded that when the credit line is 0.07,0.11,0.149 and the annual interest rate is 7,000, 2,350, 946, the bank's maximum income is 5,840,426 yuan.

3.2 Advantages of model

This model is a multi-classification model, which has many indicators and covers a wide range. It has the advantages of high accuracy of prediction rate, low requirement of data characteristics and fast training speed, and can comprehensively and effectively assess the risk of personal credit. This paper preprocesses the data, which makes the data more concise, true and reliable, and the model is considered comprehensively. The model used in this paper is simple and convenient, which reduces the difficulty of solving the problem, and is simple, efficient and easy to understand and apply. In the case of unknown credit rating, this paper uses topsis entropy weight method to classify the rating, which is more convincing. In the multi-objective programming model, it is considered to maximize the bank's benefits and minimize the risks.

3.3Model shortcomings

The factors considered in the model are limited, and the problem of customer churn rate is not considered in the multi-objective programming model. In addition, the influence of different national policies can also be considered. There is no quick and effective data preprocessing method. If big data is encountered, the operation will be tedious and take a long time. If the probability of default is more than 10%, it is considered that the probability of default is too large, and the condition of not granting loans is not convincing. The credit rating is not given in the data in Annex 2, and there may be small errors in the classification by topsis entropy weight method.

3.4 Extension of the model

We can combine the current specific policies, rationally adjust the index variables and other factors, and increase the practicality of the credit risk assessment model. Through more complex knowledge such as game theory, enrich the credit risk assessment model of banks, increase the game and contact between customers and banks, and improve the accuracy of the model. In the multi-objective programming model, the customer churn rate and the possibility of enterprise default are considered, and then the loan amount and annual interest rate of the enterprise are calculated, which is more accurate. The model can be extended to any company to grade customers and decide whether to serve the customers.

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Research On the Supply Chain Planning Based on the 01 Linear Planning Model

Xuanyang Lin[1], Ziyue Wang[2], Yiyang Zhao[2]*
[1]School of Materials Science and Engineering, North China University of Science and Technology, Tangshan, 063210, China;
[2]School of Yisheng college, North China University of Science and Technology, Tangshan, 063210, China
[*]Corresponding Author.

Abstract: This paper studies the problem of ordering and transfer scheme from the perspective of a manufacturer of a building and decorative plate. Compared to similar studies, this paper aims to highlight the choice of transporter and supplier schemes under different conditions. This paper is a review study on the issue of ordering and transport protocol options. It is composed of four parts. The first part is an overview of the quantitative identification of the 50 most important supplier issues through hierarchical analysis. The second part mainly involves the discussion of solving the most economical ordering and transport problems under the minimum number of suppliers using the 01 linear planning model. In Part 3, we focus on the transport and ordering scheme with the lowest production cost and the least loss. The fourth part is the end of the whole article. Based on the actual situation, the company can increase the weekly capacity by 116.76% and determine the order and transfer plan for the next 24 weeks. The results of this study are expected to have positive effects on relevant studies, which are mainly reflected in the choice of product ordering and transfer scheme in economic planning and production arrangement, so as to reduce the production cost and solve the problems related to enterprise planning.
Keywords: 01 Linear planning model; Analytic Hierarchy Process; enterprise production; supply chain

1.INTRODUCTION

Figure 1 supply chain

Table 1 known conditions

	A	B	C
Consumted Materials(m-3)	0.6	0.66	0.72
Weekly capacity(m3)	$2.82*10^4$		
Transportation for each home Ability(m3/week)	6000		
Establish the cost of the c material as 1			
material cost	1.2	1.1	1
transportation cost	1	1	1
warehousing expense	1	1	1

The raw materials used by a building and decorative plate manufacturer are mainly wood fiber and other vegetable fiber materials, which generally can be divided into three types of A,B,C s.Determine the raw material supplier and the corresponding weekly raw material order quantity (called "order quantity") according to the capacity requirements, determine the third party logistics company and entrust it to transfer the supplier's weekly raw material supply quantity to the enterprise warehouse, as shown in Figure 1,Table 1.

Note: (1) Supplier cannot guarantee the supply strictly according to the order quantity, the actual supply quantity may be more or less than the order quantity;

(2) in order to ensure the normal production needs, the enterprise should keep as much as possible to meet the production needs for two weeks, Inventory of the raw materials requested;

(3) No matter the supply is greater than or less than the order, the enterprise always buys all the raw materials actually provided by the supplier.

2. MODEL BUILDING

2.1 DATA PROCESSING

In order to find the 50 most important suppliers, quantitative analysis of 402 suppliers, especially indicators affecting the production of enterprises, such as supply continuity, supply stability and supply capacity. Through the hierarchical analysis method, the weights were determined to get the score of each company, and then arranged in descending order to get the 50 most important suppliers.

The final purchase scheme and the transfer scheme need to be given later. Therefore, according to the basic idea of planning problems, starting from the three directions of decision variables, target functions and constraints, we will conduct different condition constraints, analyze the planning class, and gradually obtain the final answer.

3. ESTABLISHMENT AND SOLUTION OF THE MODEL

3.1 Solving Problem based on Analytic Hierarchy Process:

Analytical Hierarchy Process,AHP [1] is funded by the American transport operator(T.L.Satty) was proposed in the late 1970s.He decomposed the relevant elements of the evaluation problem into objectives, criteria, scheme levels, is a multi-level weight analysis method; it combines people's subjective judgment, is a concise systematic analysis and evaluation method combining qualitative and quantitative analysis.

The main characteristic of this method is to mathematical the deep analysis of the nature of complex decision problems, influencing factors and their internal relationship, using the quantitative information with less, so as to solve the complex problems of multi-objective, multi-standard or no structural properties.

Its idea to solve the problem: first of all, the complex problems are hierarchical, according to the nature of the problem and the goal to achieve, the problem into different components, and according to the membership and correlation degree between the factors, to form a disjoint level.Secondly, it will guide the evaluator to obtain a measure of each scheme or measure of relative importance under a certain criterion.Finally, the priority of these schemes or measures under the criterion can be obtained using a single-criterion ranking calculation method.

The basic steps for hierarchical analysis are as follows:

1, establishes a hierarchical model, the relationship between the factors in the system, the hierarchical model of the system, generally divided into three levels, the top layer is the target layer, the bottom is the scheme layer, the middle is the standard layer or index layer. If the hierarchy is more, more complex, the middle standard layer is added,as shown in Figure 2 .

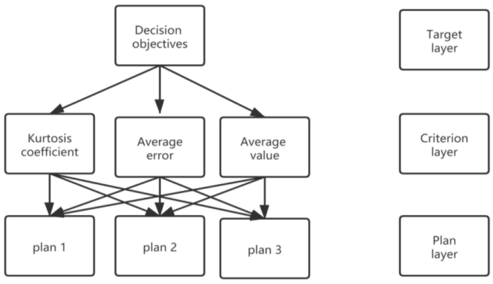

Figure 3 Hierarchical analysis diagram

A pairwise comparison matrix is constructed, with a pairwise comparison between the factors at the same level regarding the importance of a certain criterion in the previous level, and a pairwise comparative judgment matrix:

$$A=(a_{ij})_{n\times n}=\begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix}$$

The single ranking right vector was calculated and the consistency test was done. The maximum eigenvalue and its corresponding feature vector were calculated for each pairwise comparison matrix, using the consistency index, random consistency index and consistency ratio.If the test passes, the feature vector (after normalization) is the weight vector.

The total ranking right vector was calculated and the consistency test was done, the synthetic weight of the system object was calculated, and then the total ranking consistency ratio is tested:

$$CR=\frac{a_1CI_1+a_2CI_2+\cdots+a_mCI_m}{a_1RI_1+a_2RI_2+\cdots+a_mRI_m}\quad (CR<0.1)$$

Three metrics of this paper are obtained by the band function KURT,AVEDVE,AVERAGE of excel:

Pedality coefficient, mean error, mean [2].Each can represent the supplier of supply continuity, supply stability and supply capacity, according to a number of production volume and ordering relationship, we think for the importance of supplier selection indicators, supply capacity> supply stability> supply continuity, so we decide the largest supply capacity empowerment, followed by supply stability, and finally the supply continuity.The weights were 5,3,2, respectively, and used as the weights required for hierarchical analysis.The actual weighted value of each supplier is calculated from the above weights and select the appropriate supplier.Appropriate scaling was determined by pairwise comparisons between the factors.After the establishment of hierarchy, it is necessary to compare the proportion of factors and subordinate indicators. In order to achieve quantitative to quantitative transformation. This process needs to combine the expert score to finally get the judgment matrix table [3].

For example, the three influence factors of the supplier choice (respectively kurtosis coefficient, average error and average value) are evaluated (that is, expert evaluation), and finally get the weight of the three influence factors.The 1-5 point scale method is used, for example, the average relative average error is more important, when the average is 3 points, then the average error relative to the average is the penultimate value of 1 / 3 or 0.3333 points.The average error is more important than 2 points relative to the kurtosis coefficient, and the peak degree coefficient is 0.5 points relative to the average error.

If the A factor is very important relative to the B factor, then score 5 points (up to 5 points), then the B factor is 1 / 5 or 0.2 points relative to the A factor,as shown in Table 2.

Table 2 Weighted table

	coefficient of kurtosis	average error	average value
coefficient of kurtosis	1	1.5	2.5
average error	0.66	1	1.67
average value	0.4	0.6	1

The purpose of this step is to calculate the weights values, and if the weights need to be calculated, the feature vector values are calculated first, and Matlab provides the feature vector indicator. Also the maximum eigenroot value (CI) was obtained for the next step of the consistency test using [4] ,as shown in Table 3.

Table 3 Results of the AHP hierarchical analysis

Results of the AHP hierarchical analysis				
project	feature vector	weighted value	Maximum eigenvalue	CI
Coefficient of kurtosis	0.2010	20.0%	2.9943	-0.0028
Average error	0.3123	30.0%		
Average value	0.4868	50.0%		

According to our supplier supply importance model, the 50 most important suppliers have the following results (from top to bottom, from left to right, diminishing importance),as shown in Table 4:

Table 4 Supplier selection results

1	S229	**18**	S247	**35**	S211
2	S361	**19**	S284	**36**	S339
3	S108	**20**	S031	**37**	S058
4	S340	**21**	S365	**38**	S317
5	S275	**22**	S040	**39**	S134
6	S329	**23**	S346	**40**	S219
7	S151	**24**	S260	**41**	S250
8	S282	**25**	S211	**42**	S304
9	S131	**26**	S339	**43**	S094
10	S268	**27**	S058	**44**	S399

11	S308	**28**	S317	**45**	S278
12	S306	**29**	S134	**46**	S197
13	S330	**30**	S219	**47**	S279
14	S194	**31**	S365	**48**	S378
15	S356	**32**	S040	**49**	S331
16	S352	**33**	S346	**50**	S166
17	S143	**34**	S260		

3.2 When the supplier quantity is hourly,solving problem based on 01 linear planning model:

In this question, mainly focus on the supply stage, rather than the transport stage, need to find the minimum number of suppliers, then each supplier to supply the production company, whether to supply the maximum supply, such decision-making problems, we choose 01 linear planning model [5].

In practical management, many problems can not be attributed to mathematical models of linear planning, but mathematical models of integer planning can be established by setting logic variables [6].For example, site selection decision-making: As the business develops, a manufacturing company must build one to two new factories in ground A or ground B, and also consider building a warehouse.If the warehouse is located at the same location as the plant, transportation costs are saved (if the plant is not prepared, no warehouse is required).The key is whether the new plant is built in ground A or B, and a warehouse that must be considered at the new location.When excluding financial considerations, the two sites are equal, and management believes that decisions should be made on the basis of the financial analysis.

For such a problem is actually "yes-no" or "have" no " problem, can use the integer planning 0-1 integer variable to determine the objective function, build mathematical model.

We assume the loss rate during transport as 2% and the manufacturer receives as 98% of the supply.We separate 402 suppliers according to the type of supply of A,B,C. The suppliers of A,B,C three materials are 146,134,122. You can see that raw material B(blue) and raw material C(purple) have a strong periodicity [7],as shown in Figure 3:

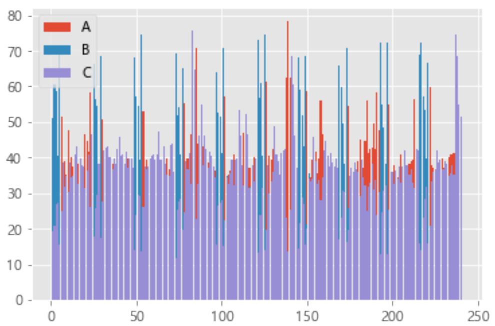

Figure 4 Comparison diagram of the weekly supply ratio of the three raw materials

As shown in the figure, the upper limit of the supply quantity provided by each supplier is the maximum supply value of the store at this cycle point every year in the previous period.In this way, the monthly supply limit of each supplier for each year is a fixed value.We set the weekly supply limit of the A supplier as: MA ,146 lines representing 146 suppliers and 24 columns representing the maximum value at that time node of each year.

$$MA=\begin{pmatrix} 2 & 0 & \cdots & 1 \\ 65 & 64 & \cdots & 84 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & 1 \end{pmatrix}$$

It can also be obtained MB , MC .

Take the supplier supplying A as an example, use the 01 variable matrix, and set the selection matrix of 146 suppliers for 24 weeks: $\boldsymbol{S}_{\mathbf{A}}$ as the decision variable of this small question.1 Represents to choose the supplier, and according to the maximum supply quantity of the purchase, 0 means that it does not purchase.

The planning model is solved by the number of suppliers.When written as a mathematical expression, we use the above selection matrix $\boldsymbol{S}_{\mathbf{A}}$ we add 24 selection data in each column of a store. If this data is not equal to 0, then the store is selected in the supply process.Similarly, we're right $\boldsymbol{S}_{\mathbf{B}}$, $\boldsymbol{S}_{\mathbf{C}}$ do so.That is, the objective function z_1 the expression is [8]:

$$\min z_1 = num\left(\sum_{i=1}^{24}(S_A)_{ij} \neq 0\right) + num\left(\sum_{i=1}^{24}(S_B)_{ij} \neq 0\right) + num\left(\sum_{i=1}^{24}(S_C)_{ij} \neq 0\right)$$

In order to ensure normal production, the company should maintain raw material inventory for not less than two weeks of production.Here is A,B,C raw materials to calculate the provided production capacity, and then add, the final value should be greater than the required capacity 2.82×10^4 cubic meter.Special attention, for the situation of the first week, the raw materials required for the first and second weeks should be purchased in the first week, so the corresponding capacity is 5.64×10^4 cubic meters.The specific mathematical expression is:

$$98\%\times\left(\frac{S_A\cdot MAX_A}{0.6}+\frac{S_B\cdot MAX_B}{0.66}+\frac{S_C\cdot MAX_C}{0.72}\right)\geq\begin{pmatrix} 5.64\times10^4 & & & \\ & 2.82\times10^4 & & \\ & & \cdots & \\ & & & 2.82\times10^4 \end{pmatrix}$$

The results is as shown in Figure 4:

1	**2**	**3**	4	**5**	6	**7**	8	9	**10**	11	12	13	14	15	16	17	18	19	20
21	22	**23**	24	**25**	26	27	**28**	29	**30**	**31**	32	33	34	35	36	**37**	38	39	**40**
41	**42**	43	44	45	46	47	48	49	50	51	52	53	**54**	**55**	56	57	58	59	60
61	62	63	64	65	**66**	67	68	**69**	70	71	72	73	**74**	**75**	**76**	**77**	78	79	**80**
81	82	83	84	85	**86**	87	**88**	**89**	**90**	91	**92**	93	94	95	96	97	**98**	99	100
101	102	103	**104**	105	106	107	**108**	109	**110**	111	112	**113**	**114**	**115**	116	**117**	118	119	120
121	122	**123**	124	125	**126**	127	128	**129**	130	**131**	132	133	134	135	136	137	**138**	**139**	**140**
141	142	**143**	144	145	**146**	147	148	149	**150**	**151**	**152**	**153**	**154**	155	156	**157**	158	159	160
161	162	**163**	164	165	166	167	168	**169**	170	171	**172**	173	**174**	**175**	176	177	178	179	**180**
181	182	183	184	185	**186**	187	188	**189**	190	**191**	192	193	**194**	195	196	**197**	198	**199**	200
201	**202**	203	204	205	206	207	**208**	209	**210**	211	212	**213**	**214**	215	**216**	217	**218**	219	220
221	222	223	**224**	225	**226**	227	**228**	**229**	230	231	**232**	**233**	234	235	236	237	238	**239**	240
241	242	243	**244**	**245**	**246**	**247**	248	249	250	251	252	253	**254**	255	**256**	257	**258**	259	260
261	262	**263**	264	265	**266**	**267**	**268**	269	**270**	271	272	**273**	274	**275**	276	277	278	279	**280**
281	**282**	283	284	285	286	287	288	289	290	**291**	**292**	293	**294**	295	296	297	298	299	**300**
301	302	303	304	305	**306**	**307**	**308**	309	**310**	311	312	**313**	**314**	315	316	317	318	319	320
321	322	323	**324**	325	326	327	328	**329**	**330**	**331**	332	**333**	334	335	336	337	**338**	339	**340**
341	342	343	344	345	**346**	347	**348**	349	350	351	**352**	353	354	355	**356**	357	358	359	**360**
361	**362**	363	**364**	**365**	366	**367**	368	**369**	370	371	372	373	**374**	375	376	377	378	379	380
381	382	**383**	384	385	386	387	388	389	390	391	392	393	394	**395**	396	397	398	399	400

Figure 5 Supplier Select Map

This small question or the planning model of the supply process, which requires the most economical raw material purchase scheme.At the same time, this request is to purchase the raw materials from the 127 suppliers obtained in the previous question.Here, we still classify the suppliers according to the type of goods supplied.So, we assume that for A raw materials, take the first week as an example, the matrix composed of the first week of each store is H_A , this is a matrix of 127 lines and 1 column.And it is defined in the same way: H_B, H_C.

The requirement of this small question is the most urgent weekly raw material purchase plan, the minimum of cost.The composition of the cost here is the cost of the A,B,C raw material.According to the assumption in the question stem, the enterprise always buys all the raw materials actually supplied by the supplier, so the cost calculation should be determined according to the supply quantity provided by the supplier, rather than the order quantity of the enterprise.Based on the unit price of the raw material A,B,C, we know that the objective function z_2 the expression is

$$\min z_2 = 1.2\times\sum_{i=1}^{X}(H_A)_{ij} + 1.1\times\sum_{i=1}^{X}(H_B)_{ij} + 1\times\sum_{i=1}^{X}(H_C)_{ij}$$

In order to ensure normal production needs, the company should maintain the inventory of raw materials for not less than two weeks as far as possible.The provided production capacity is calculated for A,B,C raw materials, and then the final value should be greater than the required capacity 2.82×10^4 cubic meter.Special attention, for the situation of the first week, the raw materials required for the first and second weeks should be purchased in the first week, so the corresponding production capacity is 5.64×10^4 cubic meters.

Taking the first week as an example, the specific mathematical expression is:

$$98\%\times\left(\frac{\sum_{i=1}^{X}(H_A)_{ij}}{0.6}+\frac{\sum_{i=1}^{X}(H_B)_{ij}}{0.66}+\frac{\sum_{i=1}^{X}(H_c)_{ij}}{0.72}\right)\ge 5.64\times10^4$$

The supply received at a supplier that week will not exceed the maximum supply the supplier can provide in that week.Take the first week as an example, the specific mathematical expression is:

$$H_A \le MA.1$$

In these, $MA.1$ represents the first column of the weekly supply ceiling matrix MA set previously [9].

3.3 Handling of the transporter forms

Given the number of transporters and the type of cargo, we assumed that all data in the transporter table were not relevant.Moreover, because the location of the transporter and the supplier and the warehouse is unknown, assuming the difference between the transporter is only the loss rate, everything else is the same.So the mean, variance and median are used as transporter criteria and the number of orders received for five years.For the calculation of 0, the variance and the median, only the order was received,as shown in Table 5,Figure 5.

Table 5 8 Index and scores of major operators

	ID	Number of orders	Mean value	Variance	Order proportion	Score
0	T1	238	1.921807	0.435424	0.991667	1.456737
1	T2	238	0.925652	0.231296	0.99167	0.95866
2	T3	116	0.188955	0.120258	0.483323	0.336144
3	T4	102	1.58368	2.206622	0.425	1.00434
4	T5	82	2.928261	3.249525	0.341667	1.634964
5	T6	214	0.552937	1.68129	0.891667	0.722302
6	T7	238	2.086812	2.039742	0.991667	1.539239
7	T8	202	1.022124	1.19074	0.841667	0.931895

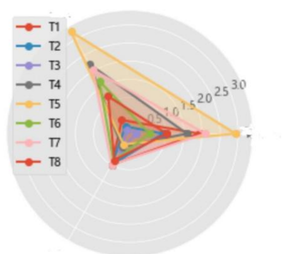

Figure 6 Transporter scoring radar map

3.4 When purchasing as many A classes as possible and purchasing as few C classes as possible,solving problem based on 01 linear planning model:

Small with the third question, compared with the second question removed the provisions of the minimum number of suppliers, instead to purchase as much as possible A and C raw materials as little as possible, target function into double target function, but the decision variables and constraints basically did not change, so still use the second question model, just need to set A more c less weight in the program.

We assume that for A raw materials, take the first week as an example, the matrix composed of the first week of supply of each store is, this is a matrix of 146 lines and 1 column.And it is defined in the same way,.Meanwhile, assume 402 rows and 8 columns the cooperation matrix between the supplier and the transporter.

This small question has two objective functions:

(1) purchases as many A as possible and as few C raw materials as possible.This objective function, which we can express by assignment, we set A:C=100:1:

$$\max z_3 = 100\times\sum_{i=1}^{146}(H_A)+1\times\sum_{i=1}^{122}(H_C)$$

(2) The transport loss rate of the transporter is as small as possible:

$$\min z_3 = \begin{pmatrix} H_A \\ H_B \\ H_C \end{pmatrix}\cdot S_Z\cdot\rho_1$$

From this, we can derive the transport scheme.

3.5 When the most products are produced,solving problem based on 01 linear planning model:

Compared with the second question, the fourth small question removes the minimum number of suppliers, and the target function is almost the same as the third question, but the decision variables and constraints are basically unchanged, so the model of the second question is still used.

We assume that for A raw materials, take the first week as an example, the matrix composed of the first week of supply of each store is, this is a matrix of 146 lines and 1 column.And it is defined in the same way.Meanwhile, assume 402 rows and 8 columns the cooperation matrix between the supplier and the transporter.

This small question has two objective functions:

(1) purchases as many A as possible and as few C raw materials as possible.This objective function, which we can express by assignment, we set A:C=100:1:

$$\max z_3 = 100 \times \sum_{i=1}^{146} (H_A) + 1 \times \sum_{i=1}^{122} (H_C)$$

(2) The transport loss rate of the transporter is as small as possible:

$$\min z_3 = \begin{pmatrix} H_A \\ H_B \\ H_C \end{pmatrix} \cdot S_Z \cdot \rho_1$$

$$production\ capacity = \frac{\text{Full open supply - Original supply}}{\text{Original supply}} * 100\%$$

By adjusting the number of suppliers and allocating the supply quantity, the final capacity increase can reach 116.76%.

From this, we can derive the transport scheme.

4.MODEL CHECKING

4.1 Analysis consistency consistency analysis

There is possible logic errors when constructing the judgment matrix, such as A is more important than B, B is more important than C, but C is more important than A.Therefore, we need to use the consistency test for problems, analyzed using the CR value, the CR value less than 0.1 means the consistency test, otherwise the consistency test is not passed.If the data does not pass the consistency test, it is necessary to check whether there are logical problems, and re-enter the judgment matrix for analysis.

For CR, CR=CI/RI,CI value has been obtained when finding the eigenvector, and RI value directly checks the table.

The results in this problem have a CI value of-0.0028 and a RI value of 1.9642, corresponding to a CR value of-0.0055,as shown in Table 6.

Table 6 Hierarchical analysis and validation results

Summary of the consistency test results				
Maximum feature root	CI	RI	CR	Conformance test results
2.9943	-0.0028	1.9642	-0.0055	Pass

5.EVALUATION, IMPROVEMENT AND GENERALIZATION OF THE MODEL

5.1.The advantages of the model

5.1.1. This paper adopts the planning class model to analyze the production planning scheme. The linear planning process is simple and easy to solve.

5.1.2. This paper adopts the simulation process to bring theoretical values into the model for simulation, and the data results have more scientific basis.

5.2.The shortcomings of the model

The accuracy of the data is high, only planning constraints on linear problems, and large computation.

5.3.Improvement of the model

The method of solving the linear planning problem, that is, when solving the feasible solution of the constraint Ax=b, it is directly obtained by the rotation operation without having to introduce artificial variables, and then the optimal solution is obtained using the traditional simplex solution.

5.4.The generalization of the model

Linear planning is one of the static optimization mathematical planning methods for the decision system.It is widely used as a mathematical means in management decision making in modern decision making, and can be used to solve scientific research, engineering design, production arrangements, military command and economic planning.

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Optimized Design of Ordering and Transportation Plan of Enterprise Raw Materials

Chaoqiang Liu[1,2,3], Yuxin Han[1,2,4], Xiangkun Zhao[5]
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]Engineering Computing and simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[3]School of Mechanical Engineering, North China University of Science and Technology, Tangshan 063210, China;
[4]North China University of Technology to Promote Innovative Education Base, Tangshan, Hebei 063210, China;
[5]College of Science, North China University of Science and Technology, Tangshan 063210, China

Abstract: The modern manufacturing product market is changing rapidly, too much or too little company material reserves are not conducive to the development of the company. The raw material ordering process is the most basic link in the production chain, and it is also the basis for ensuring stable production and stable economic returns for enterprises. The traditional optimal solution is mostly obtained by establishing a planning model. However, the planning model also has some insurmountable shortcomings. For example, when the constraint conditions change dynamically, there are higher requirements for the establishment of the planning model. Similarly, when the internal parameters of the planning model need to be changed, the robustness of the model is particularly important. Therefore, this paper introduces the use of Monte Carlo simulation and step search methods to establish a mathematical model of the optimization plan to overcome the deficiencies of the above-mentioned planning model. This thesis takes the C problem of the 2021 National College Students Mathematical Modeling Competition as an example, focuses on the process of establishing the optimization model of raw material procurement and transportation schemes.
Keyword: Solution optimization; Monte Carlo simulation; Exhaustive method; Step search

1. INTRODUCTION

The raw materials produced by a building and decorative board company are A, B, and C wood fiber materials. The company's annual production cycle is 48 weeks. The company determines the weekly order quantity and transshipment from the supplier 24 weeks in advance according to the capacity requirements.The company transports the materials to the warehouse for storage according to the supplier's supply.It is known that the company's weekly production capacity is 28,200 cubic meters, of which, each cubic meter of product consumes 0.6 cubic meters of A material, or 0.66 cubic meters of B material, or 0.72 cubic meters of C material.The particularity of raw materials causes a deviation between the actual supply and the order quantity of the supplier, and there will be a certain loss of raw materials during the transshipment process. In order to ensure production, the company needs to stock at least two weeks of production work.The production efficiency of the enterprise is directly linked to the cost of raw material procurement. The unit prices of materials A and B are 20% and 10% higher than those of C, respectively, and the remaining transportation and storage costs are the same. Combining the above situation, establish a mathematical model based on the data given in the subject, and determine the 50 most important suppliers. Based on this, the company formulated the most economical raw material ordering plan and the least loss plan for the next 24 weeks. On this basis, it will maximize the purchase of A material and reduce the purchase of C material, and at the same time require the minimum transshipment loss. Under the condition that the actual situation of the existing raw material suppliers and forwarders is known, the weekly capacity increase is calculated, and a 24-week ordering and forwarding plan is given.

2. EXPERIMENTAL

2.1 OPTIMAL SUPPLIER SELECTION MODEL AND SOLOUTION PROCESS

Analyze the data sheet of the order quantity and supply quantity of each supplier in the past 5 years. Through data visualization, it can be found intuitively that the supply situation of various suppliers in the past five years is not similar. Some of the suppliers' supply has a certain period of time over time, while some suppliers have no period of supply. sex. Each supplier's supply capacity is different, some can supply thousands of supplies, and some have a maximum supply of less than a hundred. In order to select 50 important suppliers that can guarantee the production of the enterprise from 402 suppliers, it is necessary to establish an evaluation model.Establish a mathematical model that reflects the importance of guaranteeing production, and on this basis, determine the 50 most important suppliers. Quantitative analysis of the supplier's supply characteristics is the basis for establishing a mathematical model. Therefore, the first analysis of the data determines the indicators to measure the supply characteristics. As people know, there are many indicators for supplier selection and evaluation. However, there are 3 more important indicators in practical applications: quality, cost, and delivery time. For simplicity and practicality, we use these 3 common indicators Mainly, set 4 sets of variable factors of this model: the first group is the completion rate factor of the quality guarantee; the second group is the completion rate factor of the quality guarantee; the third group is the completion rate factor on time; the fourth group is the supply price factor [1].Refer to this document and combine the data given in this question to extract two indicators, namely the delivery completion rate and the delivery error rate. Observing that the decision of the company has changed over time in 5 years, we considered weighting the data of the previous 4 years and the data of the 5th year, and calculated the delivery completion rate and delivery error rate of 402 suppliers, and based on this Calculate the scores of 402 suppliers, arrange the scores in ascending order, and select the 50 suppliers with the best scores.The supplier's delivery completion rate and delivery error rate are used as indicators to evaluate the quality of suppliers.Among them, a horizontal comparison of the 240-week supply of the same supplier revealed that the selection of suppliers by enterprises has changed over time. Compared with the old data, the new data is more convincing. Therefore, when calculating the delivery completion rate and error rate, we assign a weight of 1.1:1 to the delivery error value of the 5th year and the previous 4 years. The advantage of the subjective binning method is that experts can reasonably determine the order of various indicators based on actual problems, without the need for sample data [2]. In the given data, time has an influence on the evaluation, but there is not enough sample data to calculate the influence of time, so the subjective weighting method is adopted.

Supply completion rate: After the company issues an order, the supplier delivers 1 on time, and 0 for unshipped items, excluding whether the supply quantity is equal to the order quantity.

$$P_1=\frac{length(A_i)-length(A_i=0)}{length(A_i)}$$

x_{actual} :actual supply x_{des} :order amount

A_{ij} The supply quantity of the supplier numbered i in the jth week of the supplier producing A

B_{ij} C_{ij} The same

Supply error value: the difference between the actual supply quantity and the order quantity

$$\sum_{j=1}^{192}\left|x_{des}-x_{actual}\right|+w\sum_{j=193}^{240}\left|x_{des}-x_{actual}\right|$$

Supply error rate: the ratio of the supply error value to the total order quantity

$$P_2=\frac{\sum_{j=1}^{192}\left|x_{des}-x_{actual}\right|+w\sum_{j=193}^{240}\left|x_{des}-x_{actual}\right|}{\sum_{j=1}^{192}x_{des}+w\sum_{j=193}^{240}x_{des}}$$

For this company, in order to achieve the purpose of stable production, it is necessary to maximize the quality and quantity of weekly supplies, so it is more willing to choose suppliers with high completion rates and low error rates. Through numerical calculation, we get the supplier completion rate and error rate, as shown in Table 1. In this article, only the first 10 groups and the last 10 groups are shown.

Table 1. Completion rate and error rate of 402 suppliers.

Vendor ID	The completion rate	Error rate
S001	0.725	0.874892519
S002	0.9	0.491621878
S003	0.966666667	0.158953624
S004	0.708333333	0.938304421
S005	0.970833333	0.073068561
S006	0.825	0.969775475
S007	1	0.257585501
S008	0.829166667	0.716386555
S009	0.745833333	0.962311558
S010	0.766666667	0.767925182
S393	0.866666667	0.544198895
S394	0.766666667	0.896435621
S395	0.958333333	0.290856184
S396	0.725	0.973329537
S397	0.970833333	0.135842881
S398	0.9	0.853988961
S399	0.870833333	0.870596442
S400	0.754166667	0.978939544
S401	0.841666667	0.795533499
S402	0.729166667	0.967674661

For this company, the supplier’s error rate for supplying raw materials should be as low as possible, but the delivery completion rate should be as high as possible. In order to make the two variables in the equation have the same effect on the score, the normalization process is used (1- P_1) to calculate the score. Regarding the setting of the weights of two variables, the weight is a value used to measure the effect of each unit's mark value in the whole in the whole, and it indicates the importance of a certain index item in the index item system. In the case of change, the impact of the change of this indicator item on the result. [3] From the perspective of formulating an ordering plan, the supplier's completion rate and error rate have the same important reference value, so their weights are equal. The score calculation formula is:

$$0.5(1-P_1)+0.5P_2=Q$$

The specific ID and score are shown in Table 2 below

Table 2 50 best suppliers

Supplier ID	Score		Supplier ID	Score
S282	0.003683734		S346	0.068033859
S275	0.00495316		S189	0.071133211
S329	0.005836304		S244	0.071563648
S374	0.005859042		S143	0.072660162
S268	0.006503729		S379	0.075270748
S306	0.006822974		S139	0.081310125
S340	0.007432206		S397	0.082504774
S194	0.009754906		S362	0.083478682
S229	0.009956025		S180	0.087852254
S361	0.010744294		S003	0.096143479
S284	0.01195638		S273	0.105593376
S247	0.012242324		S123	0.107579187
S352	0.012342383		S330	0.10905854
S131	0.013987571		S338	0.109477965
S356	0.015927546		S270	0.117050379
S365	0.016396151		S303	0.11715824
S031	0.018128535		S351	0.117516793
S294	0.037132788		S078	0.118194678
S040	0.037567469		S266	0.121688221
S080	0.040229467		S307	0.122084329
S364	0.040730793		S298	0.124515906
S218	0.043573376		S007	0.128792751
S005	0.051117614		S318	0.133752254
S367	0.059743699		S366	0.135764431
S108	0.062135791		S308	0.139607606

2.2 VERIFICATION OF THE OPTIMAL SUPPLIER SELECTION

Take the weekly supply of each of the three types of suppliers of A, B, and C in the past 24 weeks, and calculate the 50 high-quality suppliers selected from the best supplier selection model for nearly 24 weeks. The weekly supply of the class. Figure 1 to Figure 3 is as follows through data visualization.

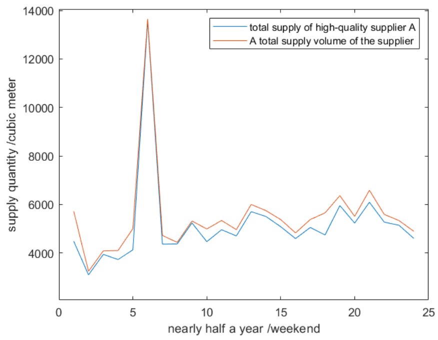

Figure 1. A view of the data

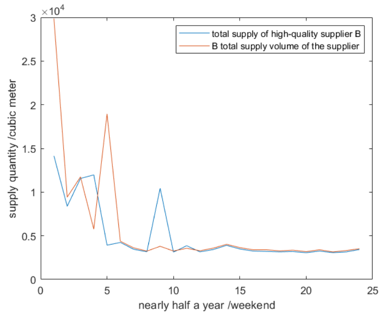

Figure 2. B view of the data

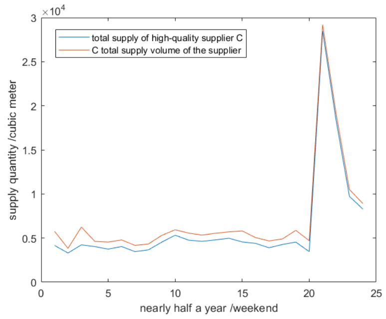

Figure 3. C view of the data

By observing the three graphs, it is found that the 50 suppliers extracted from the selection model account for a high proportion of the total supply. From this we can know the validity and reliability of the selection model.

3. THE LEAST SUPPLIER MODEL,THE MOST ECONOMICAL COST MODEL,AND THE LEAST LOSS TRANSSHIPMENT MODEL

3.1 ESTABLISHMENT AND SOLUTION OF THE MINIMUM SUPPLIER MODEL AND THE MOST ECONOMICAL MODEL

The specific solution idea is as shown in Figure 4.

According to the problem setting, it can be seen that the cost prices of the three raw materials of A, B, and C and the quantity of products that can be produced per unit are not equal. Therefore, when solving the problem, the three materials of A, B, and C need to be analyzed separately for the suppliers. The number of suppliers corresponding to the three materials A, B, and C among the 50 optimal suppliers solved in Problem One is shown in Table 3.

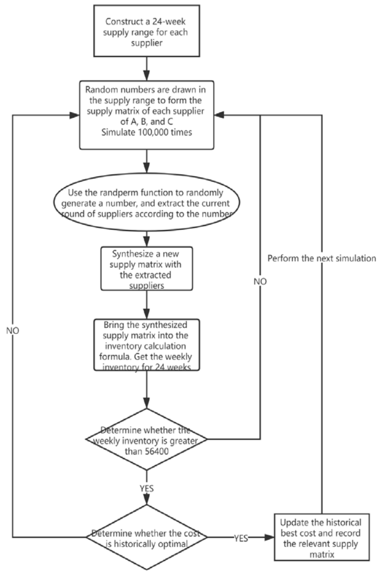

Figure 4. Process for determining supplier minimum

Table 3. Number of optimal suppliers for different materials

material type	quantity
A	15
B	17
C	18

Before proceeding with the process, a judgment must be made, that is, whether the constraint conditions are met under the original order situation. Use the total supply of 240 weeks per week to calculate whether it can meet the constraint that the company should keep no less than the raw material inventory that meets the production demand for two weeks as much as possible. The results show that the original order and supply level is far from being able to achieve as much as possible the constraint of maintaining no less than two weeks of production demand for raw materials inventory. Therefore, under the premise of not exceeding the maximum supply capacity of each supplier, increase the quantity of order supply.For the amount each supplier needs to provide each week, the scope of supply is obtained by taking the quantile. Arrange the supply of the three materials A, B, and C in ascending order, and their upper limit of supply does not exceed but is close to their maximum supply capacity.Their lower supply limit requires multiple attempts. Because A is cost-effective, B and C are cost-effective, so the lower limit of supply is lower than B and C. Under the premise that the constraints can be met, after many attempts, the fluctuations in the supply of the three materials shown in Table 4 within 240 weeks are their quantiles, and the corresponding suppliers of the three raw materials of A, B, and C were carried out 24 times respectively. Monte Carlo simulation. The possible results are sampled by iterative search, and corresponding decisions are made according to the sampling results [4] to form a supply matrix of 15×24, 17×24, and 18×24, respectively.

Table 4 .Fluctuations in supply

material type	quantity
A	0.5~0.9
B	0.65~0.95
C	0.65~0.95

Use the randprem function to randomly form the numbers and then select the suppliers according to the numbers. Let the number of suppliers corresponding to the A, B, and C materials be r1, r2, r3, and the new structure is $(r_1 \times r_2 \times r_3) \times 24$. Cargo matrix, substituted into the inventory calculation formula.

$$K_{i+1} = K_i - 28200 + \frac{1}{0.6}\sum_{i=1}^{r1} A_{ij} + \frac{1}{0.66}\sum_{i=1}^{r2} B_{ij} + \frac{1}{0.72}\sum_{i=1}^{r3} C_{ij}$$

K_i :Inventory quantity in week i

Compare the calculated inventory with the size relationship of 2.82×10^4 . The purchase cost of raw materials is composed of two parts, ordering expenses such as transportation fees, management fees, warehouse storage fees and raw material costs.The transportation cost of raw materials refers to the

During the entire operation of the industry, all costs incurred due to the transportation of raw materials [5].Assuming that the storage cost of raw materials in the warehouse is 0.1, the purchase cost calculation formula is as follows.

$$Z = 1.2\sum_{j=1}^{24}\sum_{i=1}^{r1} A_{ij} + 1.1\sum_{j=1}^{24}\sum_{i=1}^{r2} B_{ij} + \sum_{j=1}^{24}\sum_{i=1}^{r3} C_{ij} + 0.1\sum_{j=1}^{24} k$$

Z :cost

Set the initial raw material procurement cost as□□ , substitute r1, r2, and r3 that meet the capacity requirements into the procurement cost calculation formula, and perform 100,000 update iterations on the lowest raw material procurement cost. The results show that the company should select at least 25 suppliers to supply raw materials to meet production needs.

On this basis, we weigh the ordering cost and storage cost [6], perform Monte Carlo simulation again, repeat the iterative process to determine a reasonable ordering batch size to minimize the sum of the two, and obtain Zmin and its corresponding ordering plan .

3.2 MINIMUM TRANSPORT LOSS MODEL

From the data given in the title, it can be found that there are differences in the transportation loss rate between transporters and the trust of the company to the transporter (the number of times the company chooses a transporter to measure the trust of the company to the transporter), so we first determine the priority of the transporter class. We used the weighted average loss rate, that is, the loss in the fifth year and the previous four years, to carry out 1.1:1. The ratio of the weighted total loss rate to the number of transshipment by the forwarder and the number of times the company chooses a transshipment company as the standard to measure the priority of the forwarder .In the process of calculating the average loss, the same as the previous question, we finally calculated Table 5.

Table 5. Loss rate of forwarders and number of transshipments

Forwarder ID	Attrition rate	Number of transfers
1	0.914065833	240
2	0.914065833	240
3	1.875006838	117
4	2.150743137	102
5	2.643081928	83
6	1.015628704	216
7	0.914065833	240
8	1.080668966	203

When the number of transshipments is the same, the lower the loss rate, the better the transshipment effect of the transshipment company, and the more worthy of choice. The priority of the forwarder determined .

According to the ordering plan given in the previous question, determine the total amount of raw materials scheduled per week, and determine the approximate number of transshipment quotients. The principle of "the carrier with the lowest loss rate is preferred", and 6000 cubic meters per week as the limit condition , Get the optimal transportation plan.

4. MATHEMATICAL MODEL WITH AS FEW SUPPLIERS AS POSSIBLE AND C AS FEW SUPPLIERS AS POSSIBLE A

Under the same circumstances, the volume of products that can be produced per unit volume of material A is more than that of material B and material C. From the problem setting, it can be known that the three raw materials of the same volume have the same transportation and storage costs. Therefore, increase the number of A material. Reducing the number of C materials can achieve the effect of controlling the cost of transshipment and storage.Based on this, we adjusted the program in question two to control the number of suppliers corresponding to the three materials A, B, and C extracted by Monte Carlo simulation each time. And take the ratio of the C material supplier to the A material supplier as the x-axis, because each cost has no specific value, only its related ratio, so the y-axis is expressed as the relative cost, and the optimal A is presented through data perspective. And C the number of suppliers. The number of suppliers of B material remains unchanged.As shown in Figure 5.

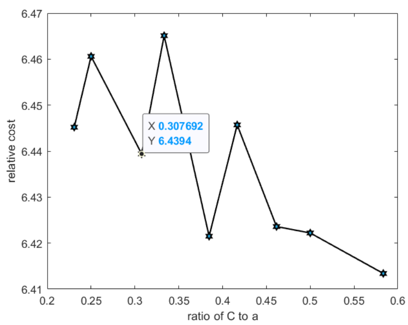

Figure 5. The relationship between the ratio of the number of different suppliers in C to the number of suppliers in A and the cost

For question 3, the transportation plan is still calculated in the same way as question 2.

5. MAXIMUM PRODUCTIVITY INCREAS MODEL

Question 4, on the basis of the first three questions, changed the weekly production capacity from a constant to a variable. It is necessary to combine the actual conditions of the existing raw material suppliers and forwarders to determine the maximum upper limit of the weekly production capacity. For the search for the maximum production capacity, the step search method is adopted, that is, one step is added to the original production capacity each time, and each step is 10 thousand cubic meters. Substitute the out-of-synchronization number into the model to determine whether it is satisfied. It is easy to know that as the weekly production capacity increases, the cost of purchasing and transporting raw materials will increase accordingly. At the same time, the weekly inventory consumption will increase, and storage costs will be reduced accordingly. The greater the weekly production capacity, the more difficult it is to meet the premise that the company must maintain as much as possible the raw material inventory that meets the two-week production demand. The maximum capacity value can be visually observed by means of data visualization. In the specific operation, the company's production capacity starts from 28,200 cubic meters, and the production capacity is increased by one step each time, and each step is 10 thousand cubic meters. The results of each step search are brought into the optimization model established in the second problem. If the constraint conditions are met, the next step result is checked. Until a search result that does not meet the constraints is found, the critical value is taken. Figure 6 is obtained through the method of data visualization, and it is obtained that the maximum production capacity of the enterprise can be increased by 20,000 cubic meters under actual conditions.For the formulation of the transportation plan at this time, the calculation is carried out in the same way as in Model 2.

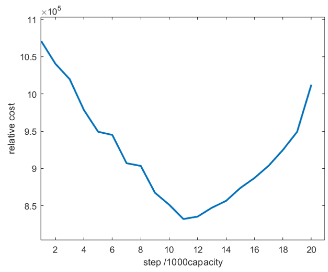

Figure 6.Capacity search chart

6. CONCLUSION

Using this method to randomly simulate and extract the optimal plan requires a lot of calculations, and requires higher computer performance. The core of the model is to simulate a variety of schemes randomly, and use constraints to test the feasibility of the simulation scheme. If feasible, compare the cost with the historical best to achieve the effect of cost optimization. Based on this feature, the internal parameters of the model have changed. When the unit costs for the transportation and storage of the three types of raw materials are not the same, and the company wants to keep as much as possible the raw material inventory that meets the three-week production demand, the model still has a good performance. feasibility. At the same time, this method of optimizing the plan can also be applied to the planning of related economic activities, such as market pricing, cargo transportation, etc.

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Prediction and Rehabilitation of Occupational Diseases

Moyao Liu[1], Yaxun Da[1,3], Bingbing Shi[3]*
[1]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Mining Engineering, North China University of Science and Technology, Tangshan 063210, China;
[3]College of Artificial Intelligence, North China University of Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: To understand the prevalence of occupational diseases in recent years, make reasonable prediction, and give relevant measures according to the results. Using the method of overall analysis and data integration, the total number of occupational disease patients in China, including occupational disease patients, pneumoconiosis patients, occupational poisoning patients, occupational tumor patients, occupational otorhinolaryngological disease patients, occupational disease patients caused by physical factors, occupational skin disease patients and occupational infectious disease patients were counted. The starting and ending time was from 2010 to 209 . GM (1,1) grey model is used to predict and analyze the above statistical data in turn. By using GM (1,1) grey prediction, it was found that there was no large range of error in the fitting results. According to the posterior difference ratio of each item, it was found that all of them were less than 0.35, which proved that the fitting effect was good. Through the fitting curve to predict the prevalence of occupational diseases in the next four years, we found that the total number of patients and the prevalence of various occupational diseases generally showed a downward trend. The situation of occupational diseases will be alleviated in the next few years. The society and the government should pay more attention to the occupational diseases.
Key words: Occupational Diseases; Data integration; Gray prediction

0. INTRODUCTION

According to relevant statistics, the death toll from occupational diseases in China is nearly 2 million [1]. With the rapid development of society, occupational disease has become a new disease endangering human life safety. Occupational diseases, as a typical example of rapid economic development, have a huge impact in China. At present, China is in the period of high incidence of occupational disease, the contradiction is prominent. The number of patients and cumulative cases of occupational diseases are on the rise, and the number of deaths and new cases ranks first in the world. According to incomplete statistics, there are about 30,000 new occupational disease patients and nearly 5,000 occupational disease deaths in China every year. The annual economic loss caused by occupational diseases in China exceeds 200 billion yuan, accounting for about 2.5% of GDP. It can be seen that the form of occupational disease prevention in China is severe, and the prevention of occupational disease has become an urgent problem to be solved [2]. Experts are calling for a comprehensive warning system for occupational hazards. The prediction of the incidence of occupational diseases can provide a theoretical basis for relevant prevention and control work [3]. Due to the limited data collected on occupational diseases, we can only select data from 2010 to 2019 as reference. Through the observation of the data, it is found that there is no strong relationship between the data. Therefore, grey system is used as theoretical support in this paper. The grey system is the theoretical system established and developed by Professor Deng Julong. He studied the "small sample difference information" uncertain system with "partial information known and partial information unknown", and carried out the analysis, estimation, modeling, prediction, decision making, control and optimization of system research theory [4]. In this paper, we use the number of occupational diseases in recent years to establish a grey prediction model to predict the trend of occupational diseases in the next few years, in order to provide scientific theoretical basis for relevant prevention and control departments to formulate targeted prevention and control measures [5].

1 OBJECTS AND METHODS

1.1 THE DATA COLLECTION

According to the data collected online from 2010 to 2019, a total of 27240 new cases of occupational diseases were reported in 2010. There were 23812 cases of pneumoconiosis. There were 1417 cases of acute occupational poisoning, chronic occupational poisoning and 1394 cases of other occupational diseases. In terms of industry distribution, 13968 cases, 2575 cases and 2258 cases of occupational diseases were reported in coal, railway and non-ferrous metal industries respectively, accounting for 69.02% of the total reported cases of occupational diseases in China. Since the 1950s, China has reported 749970 cases of occupational diseases, including 676541 cases of pneumoconiosis, 149110 deaths and 527431 current cases. A total of 47079 cases of occupational poisoning were reported, including 24011 cases of acute occupational poisoning and 23068 cases of chronic occupational poisoning.

(1) Pneumoconiosis. In 2010, 23812 new pneumoconiosis cases and 379 deaths were reported. Among the 23812 new pneumoconiosis cases, 94.21% were coal worker pneumoconiosis and silicosis (12564 and 9870 cases respectively), and 75% were distributed in coal. Industry.

In 2010, pneumoconiosis accounted for 87.42% of the total reported cases of occupational diseases.

(2) Occupational chemical poisoning.

A total of 260 cases of acute occupational poisoning were reported, including 383 cases of poisoning, including 7 cases of serious occupational poisoning accidents, 37 cases of poisoning and 6 cases of death. Among them, carbon monoxide poisoning was the most common, 92 cases and 131 cases respectively.

(3) Occupational ear, nose, throat and oral diseases.

A total of 1097 cases of occupational ear, nose, throat and oral diseases were reported, including 1052 cases of noise deafness (95.90%). The reported cases mainly occurred in manufacturing and mining.

(4) Occupational infectious diseases. A total of 485 cases of occupational infectious diseases were reported, including 429 cases of brucellosis and 48 cases of forest encephalitis. The reported cases are mainly distributed in agriculture, forestry, animal husbandry, fishery and manufacturing.

1.2 SUBJECTS

To collect the incidence of occupational diseases nationwide from 2010 to 2019, Including nearly 10 years, the total number of patients with occupational disease onset pneumoconiosis patients, the total number of occupational poisoning patients, the total number of occupational cancer patients, the total number of occupational ent disease patients, the total number of physical factors caused by the total number of occupational disease patients, the total number of occupational skin diseases patients and the total number of occupational diseases patients. In the past decade, the total number of patients with various diseases increased first and then decreased, which does not exclude the attention paid by the society and the relevant government to occupational diseases. The following table is the statistical table of national occupational diseases from 2010 to 2019.

Table1 2010-2019 National statistics on occupational diseases

year	Occupational disease	pneumoconiosis	Occupational poisoning	Occupational tumor	Occupational ear, nose diseases	disease caused by physical	dermatosis	infectious disease
2010	27240	23812	2034	80	1314			
2011	29879	26401	2131	92	1255			
2012	27420	24206	1641	95	1446	201	148	293
2013	26393	23152	1541	88	1587	233	141	316
2014	29972	26873	1281	119	1632	143	109	427
2015	29180	26081	931	81	1097	268	106	485
2016	31789	28088	1212	90	1276	149	100	610
2017	26756	22701	1021	85	1608	399	83	673
2018	23497	19524	1333	77	1528	331	93	540
2019	19428	15947	778	87	1623	264	72	578

1.3 RESEARCH METHODS

This paper adopts the research method of grey prediction, and the steps of grey prediction are as follows:

Step1: stage ratio test

In order to ensure the feasibility of modeling method, it is necessary to test the known data columns. Let the reference data be$x^{(0)}$=($x^{(0)}(1), x^{(0)}(2), \dots, x^{(0)}$(n)),Calculate the level ratio of the sequence:

$$\lambda(k) = \frac{x^{(0)}(k-1)}{x^{(0)}(k)}, \mathrm{k} = 2,3,\dots,\mathrm{n}$$

If all step ratios fall within the tolerable covering ($e^{-\frac{2}{n+1}}$, $e^{\frac{2}{n+1}}$), The sequence $x^{(0)}$ can be used as the data of model GM(1,1) for grey prediction, and the prediction results are satisfactory [6].

Step2: Cumulative generation

Let the original number column$x^{(0)}$=($x^{(0)}(1), x^{(0)}(2), \dots, x^{(0)}$(n)), let

$$x^{(1)}(k) = \sum_{i=1}^{k} x^{(0)}(i)\,, k = 1,2,\dots,n$$

We get a new sequence $x^{(1)}$ ={ $x^{(1)}(1)$, $x^{(1)}(2)$, ……$x^{(1)}(n)$},It is called a cumulative generated sequence, and the following is to predict by fitting the cumulative generated sequence.

Step3: Establish the first-order differential equation

Let $x^{(1)}$ satisfy the first order differential equation:

$$\frac{dx^{(1)}}{dt} + \mathrm{a}x^{(1)} = \mathrm{u}$$

Where *a* and *u* are unknown constants. In order to simplify processing, differential is transformed into difference,and $x^{(1)}(i)$ for replacement $\frac{1}{2}[\ x^{(1)}(i) +\ x^{(1)}(i-1)]$, the above equation is transformed into:

$$x^{(0)}(t) = -a\frac{1}{2}[x^{(1)}(i) + x^{(1)}(i-1)] + \mathrm{u}$$

Step4: solve the unknown quantity

And just to make it easier to solve,Y=($x^{(0)}(2), x^{(0)}(3), \dots, x^{(0)}(n))^T$ is the data matrix, Make C=$\binom{a}{u}$ for the unknown matrix, the B=(-$\frac{1}{2}[x^{(1)}(i) + x^{(1)}(i-1)]$,1). Convert the above equation into:

$$Y = B \cdot C$$

The least square method is used to minimize the sum of squares of errors between the obtained data and the actual data, and the unknown data can be easily obtained. The minimum of the objective function is assumed when $\hat{C} = (B \cdot B^T)^{-1} \cdot B^T \cdot Y$ [7].

Step5: Test the model

As for the reliability of the predicted data, the posterior error ratio is used in this paper to judge whether the prediction effect is good. The calculation formula of the posterior error ratio C is as follows:

$$C=\frac{\sqrt{\frac{1}{N}\sum_{k=1}^{N}[x^{(0)}(k)-\bar{X}]^2}}{\sqrt{\frac{1}{N-1}\sum_{k=2}^{N}[E(k)-\bar{E}]^2}}$$

The calculated results are compared with the data in the following table to judge the level of prediction accuracy.

Table2 Grade comparison table

Prediction accuracy level	good	qualified	reluctantly	unqualified
C	<0.35	<0.45	<0.50	≥0.65

2 THE RESULTS

2.1 FITTING AND ACCURACY

Based on the above research methods, GM(1,1) grey prediction was made for the incidence of occupational diseases and the incidence of various occupational diseases successively in this paper. The actual values were compared with the predicted values, and the posterior error ratio of each item was calculated, as shown in the table below. It is found that the posterior error ratio of each item is less than 0.35. According to the grade comparison table, the prediction accuracy grade is at a high level, and it is found that grey prediction is more perfect for data processing.

Table 3 GM(1,1) model actual value and predicted value comparison

Year	occupational disease		pneumoconiosis		Occupational poisoning		Occupational tumor	
	actual	forecast	actual	forecast	actual	forecast	actual	forecast
2010	27240	27240	23812	23812	2034	2034	80	80
2011	29879	30446	26401	27244	2131	2097	92	94
2012	27420	29566	24206	26276	1641	1746	95	92
2013	26393	28712	23152	25342	1541	1454	88	90
2014	29972	27882	26873	24442	1281	1211	119	119
2015	29180	27076	26081	23573	931	1008	81	84
2016	31789	31789	28088	28088	1212	1147	90	84
2017	26756	26902	22701	22787	1021	1036	85	84
2018	23497	23005	19524	19164	1333	935	77	84
2019	19428	19672	15947	16118	778	845	87	84
Variance ratio test C	0.0626		0.0453		0.173		0.3039	

Year	Occupational ear		Occupational disease caused by physical		Occupational dermatosis		Occupational infectious disease	
	actual	forecast	actual	forecast	actual	forecast	actual	forecast
2010	1314	1314						
2011	1255	1298						
2012	1446	1412	201	201	148	148	293	293
2013	1587	1536	233	214	141	132	316	311
2014	1632	1671	143	185	109	119	427	443
2015	1097	1097	268	249	106	109	485	477
2016	1276	1372	149	201	100	99	610	514
2017	1608	1459	399	347	83	90	673	654
2018	1528	1552	331	349	93	81	540	597
2019	1623	1651	264	281	72	74	578	543
Variance ratio test C	0.2563		0.2641		0.2826		0.2131	

2.2 FORECAST THE INCIDENCE OF OCCUPATIONAL DISEASES IN THE NEXT FOUR YEARS

The incidence of each occupational disease in the next four years can be predicted by GM(1,1) grey model. Due to the great attention of the society to the relevant government in 2016, occupational disease has been restrained accordingly. Relevant experts say that the incidence of occupational disease will continue to decrease in the next few years [8], and the research results of this paper confirm this conclusion. The number of occupational diseases will continue to decrease over the next four years, as shown in the table below.

Table 4 2020-2023 Occupational disease incidence forecast table

year	Occupational disease	Pneumoconiosis	Occupational poisoning	Occupational tumor	Occupational ear, nose diseases	disease caused by physical	Dermatosis	infectious disease
2020	16822	13556	763	84	1756	254	67	593
2021	14385	11401	689	84	1868	203	61	546
2022	12301	9588	622	84	1987	189	55	504
2023	10518	8064	562	83	2113	173	50	466

3 DISCUSS

In this paper, the incidence of occupational diseases in the next four years was obtained by fitting the incidence of occupational diseases from 2010 to 2019, and it was found that the overall number of patients with occupational diseases showed a downward trend.

According to relevant data, the Occupational Disease Prevention and Control Law of the People's Republic of China was revised in 2016, and 2016 is the key year for the prevention and control of occupational diseases [9]. According to article 3 of the Occupational Disease Prevention and Control Law, the prevention and control of occupational diseases should adhere to the principle of putting prevention first and combining prevention with prevention, and implement the principle of classified management and comprehensive treatment. The policy of "prevention first and combination of prevention and treatment" is proposed based on the fact that occupational diseases can be prevented but difficult to cure [10]. Therefore, occupational disease prevention and control work must start from the source of disease, the implementation of prophase prevention.

Since 2016, the overall incidence of occupational disease tends to decline, which is not only the credit of the relevant government, but also the result of the joint efforts of the whole society. In this regard, we should not slack off on the occupational disease situation, and should take targeted measures according to the actual situation of occupational disease harm in China [11]. These measures mainly include:

(1) Establish a sound occupational health security mechanism. It includes: establishing an occupational health management system and information decision-making mechanism in accordance with China's national conditions, a sound occupational disease injury insurance mechanism and a stable multi-channel investment mechanism for occupational health, and rationally allocating occupational health technical service resources by market mechanism [12].

(2) Establish a workplace health promotion system in accordance with China's national conditions. Through the workplace health promotion and health education activities, improve the employers' legal awareness of abiding by the law, and effectively fulfill the legal responsibility of occupational disease prevention; Create a safe, comfortable and healthy working environment; Give full play to the enthusiasm of employers, and promote employers to pursue economic benefits while earnestly fulfilling corporate social responsibilities. Popularize occupational health knowledge and strengthen workers' awareness of self-prevention [13].

(3) Improve the treatment of occupational disease patients [14]. The occupational-disease sufferer shall enjoy the occupational-disease treatment prescribed by the state in accordance with law. The employer should transfer the occupational-disease patient unfit to continue the original work to his original post and make proper arrangements for it. The employer should give appropriate post allowance to the workers engaged in occupational-disease-inductive operations [15].

The occupational-disease-inductive factor testing refers to the regular testing and evaluation of the occupational-disease-inductive factors in the workplace, the supervision of the laborers' health, and the prevention and treatment of occupational diseases. Regular detection of occupational-disease-inductive factors can comprehensively understand the distribution and concentration of occupational-disease-inductive factors in the workplace, timely find the hidden dangers, reduce the consequences of workers' occupational health and safety, and reduce the risks of enterprises, which is in line with the interests of enterprises. It can also provide materials for the declaration of occupational-disease-inductive factors and basis for occupational health examination.

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Forecasting of Converter Flue Gas in Steelmaking Systems Based on VAR Models

Yiyao Liu[1,2*], Zheyu Xiao[1,2], Junyi Han[1,2]
[1]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Science, North China University of Science and Technology, Tangshan 063210, China
*Corresponding Author.

Abstract: Small and medium-sized converters cannot be installed with sub-gun systems, and the end-point control hits are low. In this paper, the flue gas sample data are processed based on VAR model. Firstly, the unit root test is used to check the smoothness of the data, and the data are made smooth by first-order difference. After that, the lagged orders of the sample variables are determined to further regularize the data. The VAR model is used to build a prediction model of the flue gas composition, and the smoothness of the series is checked. Finally, error correction is applied to the model to obtain a stable prediction model.
Keywords: VAR model; Unit root test; Impulse Response Analysis; Smart Steelmaking

1. THE BACKGROUND OF THE PROBLEM

The traditional small and medium-sized converter steelmaking endpoint prediction is based on the static mechanism control model of physicochemical reaction, and the control body of the large converter dynamic control system is also a static control model, whose dynamic control process is to start the dynamic detection of carbon content and temperature value by the subgun system at the late stage of steelmaking, input the detection value into the static control model, correct the calibration static control curve in real time, and finally realize the high steelmaking endpoint hit rate [1]. Small and medium-sized converters cannot be equipped with a subgun system, resulting in a low hit rate at the end point. The distance between the control start point and the end point causes control errors, resulting in a less robust static control system. Small and medium-sized converters also face the coupling pressure of "capacity removal, green manufacturing and market competition", therefore, it is imperative to break through the technical bottleneck of small and medium-sized converters and open up intelligent steel making in small and medium-sized converters[2].

2. BUILDING A VAR MODEL

2.1 UNIT ROOT TEST

Unit root test: It refers to testing whether there is a unit root in the series. If there is a unit root in the series, it is a non-stationary time series, and the series will be non-stationary, i.e., the mean and variance will be affected by time, which will make a pseudo-regression in the regression analysis[3].

In this paper, the ADF test is used to test the original hypothesis that the variable under test is a non-stationary time series, i.e., there is a unit root. The alternative hypothesis is that the variable under test is a smooth time series. When Test Statistic < 1% Crtitical Value, the data are considered to be smooth.

PQ,Q,CO,CO2,C,T were tested using the ADF test and the results are shown in Table 1. It can be seen that PQ,Q,CO,CO2,T are non-stationary, and the variables are differenced to the first order to obtain the results in Table 2. It can be seen that the differenced data become smooth and can be used as a new data series to show the changes of the original data.

Table 1. Unit root test for raw data

Variable	Test Statistic	Critical Value			P-value	Conclusion
		1%	5%	10%		
PQ	-0.849	-3.459	-2.879	-2.570	0.8044	Unstable
Q	-0.849	-3.459	-2.879	-2.570	0.8044	Unstable
CO	1.496	-3.459	-2.879	-2.570	0.9975	Unstable
CO2	-2.176	-3.459	-2.879	-2.570	0.2149	Unstable
C	-4.907	-3.459	-2.879	-2.570	0.0000	Stable
T	-0.849	-3.459	-2.879	-2.570	0.8044	Unstable

Table 2. Unit root test for data after first-order differencing

Variable	Test Statistic	Critical Value			P-value	Conclusion
		1%	5%	10%		
dPQ	-19.823	-3.459	-2.879	-2.570	0.0000	Stable
dQ	-19.823	-3.459	-2.879	-2.570	0.0000	Stable
dCO	-14.932	-3.459	-2.879	-2.570	0.0000	Stable
dCO2	-14.534	-3.459	-2.879	-2.570	0.0000	Stable
C	-4.907	-3.459	-2.879	-2.570	0.0000	Stable
dT	-19.823	-3.459	-2.879	-2.570	0.0000	Stable

2.2 SELECTION OF THE OPTIMAL LAG ORDER

Lag order: In this paper, although the C and CO2 index values correspond to the rest of the index values in time, there is a certain delay in the actual reflection, i.e., there is a lag order.

The number of periods of the selected data in this paper is large, and the lag order should not be too small, and the choice of the optimal lag order is not consistent among different judgment criteria. Table 3 and Table 4 are the judgment tables of the optimal lag order of C and T. The 1st order lag order judged by the SBIC criterion is too concise, and the order with the largest number of minimum values of the five test criteria is selected as the optimal lag order by combining various judgment criteria. From the table, we can see that the optimal lag orders of C and T are 6 and 5, respectively.

Table 3. The optimal lag order judgment table for C

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	-231.744		0.000076	1.87098	1.89353	1.92701
1	1300.62	3064.7	4.5e-10	-10.1636	-10.0509	-9.88353*
2	1327.87	54.498	4.1e-10	-10.2529	-10.05	-9.74871
3	1361.54	67.351	3.6e-10	-10.3932	-10.1001	-9.66491
4	1401.75	80.416	3.0e-10	-10.5853	-10.2021	-9.63294
5	1411.01	18.527	3.1e-10	-10.5319	-10.0585	-9.35539
6	1438.13	54.222	2.9e-10*	-10.62*	-10.0565	-9.21948

Table 4. The optimal lag order judgment table for T

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	-2340.09		22222	18.5225	18.5393	18.5644
1	-166.889	4346.4	0.000826	1.41415	1.48157	1.58174*
2	-156.885	20.009	0.00819	1.4062	1.5242	1.69949
3	-135.617	42.536	0.000743	1.30923	1.47779	1.72927
4	-110.851	49.531	0.000656	1.1846	1.40374	1.72927
5	-94.4932	32.716	0.000619*	1.12643*	1.39614*	1.79679

2.3 CONSTRUCTION OF PREDICTIVE MODELS

All variables are viewed as endogenous and regressions are performed on lagged variables with the help of current period variables, and forecasting models are established through VAR models[4]. In this paper, we study the dynamics of [C] and [T], with more variables, and the use of VAR to build a model without the need to formulate hypotheses, which has the advantage of determining the dynamic linkage of the system through the nature of the data.

Among them,

Y_t is the n-dimensional endogeneity variable, $\Phi$is the coefficient matrix, and p is the lag order determined by the endogeneity variable.

2.4 STABILITY TEST

Unit circle test: For the VAR model with lag order m and n endogenous variables, there are m*n eigenroots, and the VAR model reaches stability when the mode of all eigenroots is greater than 1. At this time, the reciprocal of all eigenroots mode is less than 1, i.e., they are all within the unit circle.

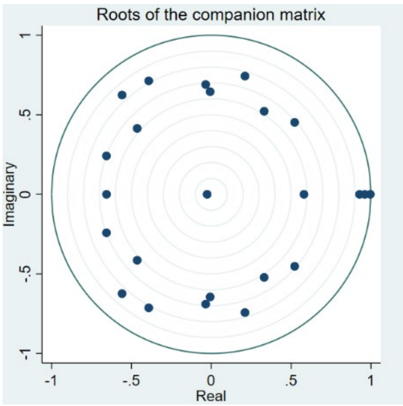

Figure 1. Unit circle test for C prediction model

The unit circle tests of the C prediction model and the T prediction model are shown in Figures 1 and 2. It can be seen that all the eigenvalues fall within the unit circle, indicating that there is no invalid estimation of the model, and the VAR model can be considered to have some stability, indicating that the established model is valid.

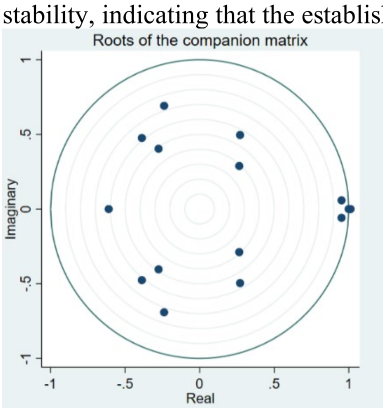

Figure 2. Unit circle test for T prediction model

2.5 IMPULSE RESPONSE ANALYSIS

Impulse response analysis: There are many parameters and coefficients in the VAR model, and it is impossible to give a reasonable explanation of the meaning of each coefficient, so the relative importance of each variable to the system can be described by studying the impact of the variables on the system dynamics through impulse response analysis. [5]If the impulse response function tends to stabilize after a period of time, it indicates that the shock effect tends to stabilize. When it tends to zero, it indicates that the shock effect on the system gradually tends to stabilize.

Figures 3 and 4 reflect the impulse response relationships of the C prediction model and the T prediction model, respectively. From Figure 3, it can be seen that the effect between C and dQ reaches the maximum in period 3 and then tends to zero after several fluctuations. The effects between all other variables basically tend to zero, indicating that the index values of Q, PQ, CO, and CO2 have strong and lasting effects on the C prediction system, which is consistent with the actual situation. The flue gas and flow rate generated during the converter blowing process will always affect the instantaneous decarburization rate and decarburization amount, which in turn affects the steel yield.

Similarly, the effects between CO2 and Q in Fig. 4 tend to zero after several consecutive periods of fluctuation, and the effects between other variables fluctuate around zero during the reaction process, which also indicates that the index values of Q, PQ, CO, and CO2 have strong and persistent effects on the T prediction system.

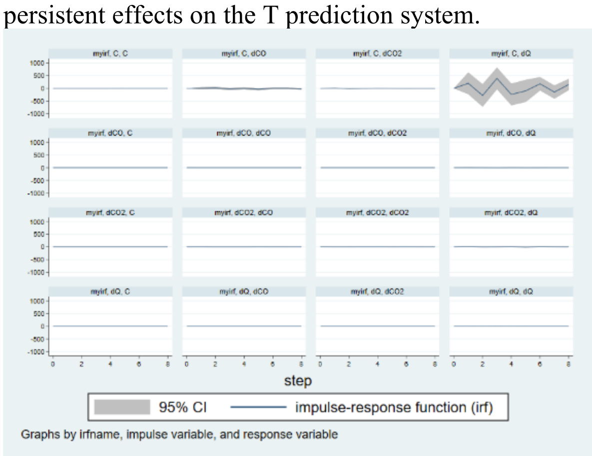

Figure 4. Effect between variables of C prediction model

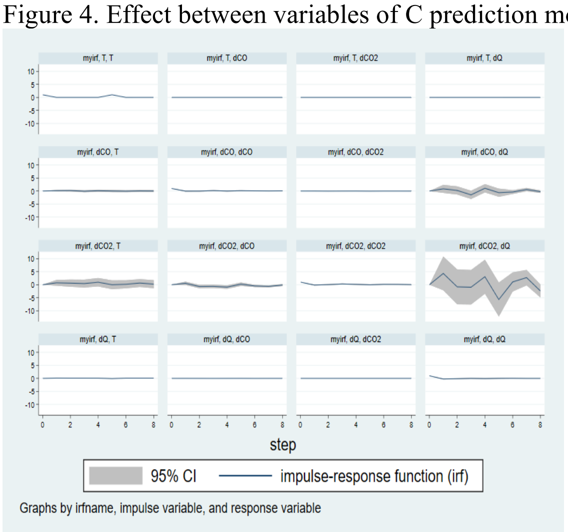

Figure 5. Effect between variables of T prediction model

3. MODEL APPLICATION AND PROMOTION

The C and T dynamic prediction model established by analyzing the converter flue gas achieves accurate hits and high robustness for the endpoint of carbon content and steel temperature values in the steel, which is a good solution to the situation of low hit rate of endpoint control in the absence of a subgun system. The model can be applied to the prediction of key variables in the intelligent steelmaking and steelmaking process, and the model establishment method can be applied to more realistic events, such as the study of The study of commodity price fluctuation factors, the influence of various factors in the agricultural production process and other aspects.

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Cooperation Problem of Concentric Drum Based on Torque Physics Model

Bingbing Shi, Yaxun Dai, Chaoxu An*
School of Artificial Intelligence, North China University of Science and Technology, Tangshan, Hebei 063210, China
Corresponding Author.

Abstract:"Concentric Drum" game is a team cooperation ability development project, the players pull the rope to raise the drum, to make the ball beat on the drum surface. This paper analyzes the physical process of the game "Concentric Drum" by establishing a THREE-DIMENSIONAL physical model and using mathematical physics methods, hoping to provide guidance for the game participants and help them achieve better results. By assuming that the players' hands move only in the horizontal direction, the three-dimensional motion model of the concentric drum is simplified. Considering the constant force exerted by the members on the rope, the second order constant coefficient differential equation based on Newton's second law was established, and the initial boundary value condition was determined. The equation describing the height and velocity of the concentric drum was obtained. Based on the conservation of momentum and energy, and considering the energy loss in the collision of concentric drum and volleyball, a mathematical description of the power consumed by players pulling rope is established. Given the force size and frequency of the team member, the corresponding optimal scheme can be obtained. In this paper, we give the best teamwork strategy with the goal that the energy consumption of the team members should be as little as possible. We in three-dimensional motion model on the basis of increased by the rotation of the drum with translational speed, the translational acceleration and angular velocity, angular acceleration is comprehensively describes the movement state of drum in complex cases, lists the common case of differential equation and the analytical solution, and use the matlab calculation was obtained under the condition of a given set of nine problems of specific solutions, Answer the questions in the table. The influence of two different force errors on the motion state of drum is analyzed.

Key words: Concentric drum game; optimal cooperation strategy; force distance

1.INTRODUCTION

"Tongyi" (also known as "Tongyi Drum") is a team development program. The project uses a volleyball (0.27kg) and a coarskin double-sided drum (3.6kg, 40cm in diameter) as props. In the middle of the concentric drum body (22cm in height), several ropes of the same length and evenly distributed along the circumference are fixed. No less than 8 players each pull a rope to make the drum head move vertically in the space, with lateral movement in the horizontal plane and rotation outside the horizontal plane as the auxiliary movement. Through the concentric drum of the main movement of the volleyball to a height of more than 40cm, otherwise the project stopped. The process of bouncing the ball up and down is repeated, requiring the player to eventually bounce the ball as many times as possible.

Combined with the actual game experience and the online video of the excellent team tossing the ball, the author found that the difficulty of this project mainly lies in the fact that different players need to control the concentric drum reasonably and effectively in different directions at the same time, which makes it difficult to grasp the height and direction of tossing the ball. This is related to factors such as the force size, direction, timing, technique and positioning of different players. The physical process in reality is extremely complicated, how to simplify and establish a reasonable mathematical model is the focus of the author's research.

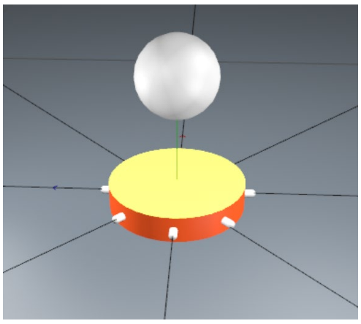

Figure 1: Simple model diagram

2.ASSUMPTIONS OF THE MODEL

a. In the analysis of the force of the drum and volleyball movement, the influence of the air resistance caused by the movement of the volleyball and drum and the vibration of the traction rope is ignored.

b. It is assumed that the rope pulling the concentric drum is an ideal rope, that is, the rope is not extensible, and the rope is lightweight, and the tension provided by the rope is always along the rope;

c. It is assumed that the force of pulling rope is constant every time, and the force of pulling rope is changed to a new force magnitude at the moment of its force generation, and the force is applied to the drum instantaneously.

3. THE ESTABLISHMENT AND SOLUTION OF MODEL

We are asked to give the optimal coordination strategy and the height of the bouncing ball under the ideal condition of precisely controlling the direction, timing and force of the bouncing ball.

The main point of this problem is to simplify the physical model of the ball hitting the concentric drum and bouncing up. The collision process is an inelastic collision model close to the elastic collision. Each time, a small part of the energy of the system will be dissipated in the form of collision. In order to achieve the best cooperative strategy, players need to bounce the ball as many times in a row as possible to reduce energy consumption and achieve better comfort and gameplay experience.

In reality, the process of human pulling the rope to make the concentric drum move upward is very complicated. According to the primary and secondary analysis method, the author idealized the movement track of human hands as horizontal movement, and the height of each player's hand is on the same horizontal plane. In order to make better use of energy, it should be assumed that the ball will collide with the volleyball when the drum speed is at its maximum, and only the direction of velocity of the ball will change after the collision, but the size of velocity will not change. At this point, a physical relationship can be established between the height of the ball and the force applied and the duration of the force, resulting in the best coordination strategy.

3.1THE ESTABLISHMENT OF 3D PHYSICAL MODEL

In order to better control the direction of the rope and facilitate team cooperation, on the basis of considering the actual situation, the author assumes that each member's hand moves only in the horizontal direction, but not in the vertical direction, and the height of each member's hand is on the same horizontal plane. At this point, the coordinate system of the position of the concentric drum is established by taking the plane where the member's hands are as the datum plane and the downward direction as the positive direction of the coordinates. Let's say the number of runners in each race is N and the length of each rope is L. In the initial static state, n members apply constant force F0 to the rope to balance the gravity of the concentric drum G= Mg, then the initial balance equation is as follows:

$$\mathrm{n} \cdot F_0 \sin\theta_0 = Mg \tag{1}$$

Where, the included Angle between the rope at the initial position and the horizontal direction satisfies $\sin\theta_0 = \frac{H_0}{L}$and $H_0 = \frac{MgL}{nF_0}$

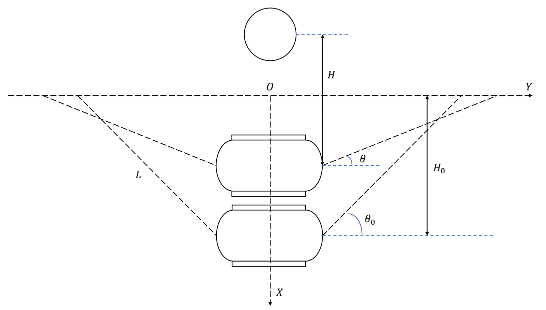

Figure 2: The motion of a drum

When a certain moment is reached, the player increases the tension of the rope instantly by moving his hands in the same horizontal plane, and the time at this stage can be ignored. Under the action of tension, the concentric drum moves upward away from the initial position, and the Angle θ between the rope and the horizontal direction changes with the change of the coordinate of the concentric drum's position, $\theta = sin^{-1}(\frac{x}{L})$,Then the motion state of the "concentric drum" can be shown as follows Figure 2:

In order to simplify the collision model more reasonably, it is assumed that the force exerted on the rope is constant before the collision between the concentric drum and the volleyball, and the gravity of the rope is not taken into account, then Newton's second law $\sum \vec{F} = M\vec{a}$ can be obtained:

$$-\mathrm{n} \cdot F_0 sin\theta + Mg = Ma \tag{2}$$

$$\frac{d^2x}{dt^2} = a = \frac{-nFsin\theta + Mg}{M} = g - \frac{nFsin\theta}{M} \tag{3}$$

Thus, the second order differential equation of the coordinate x of the concentric drum about time T can be established. It is easy to know that the coordinate of the concentric drum at the initial moment is H0 and the velocity is v_0, namely:

$$\begin{cases} \frac{d^2x}{dt^2} = g - \frac{nF}{ML}x \\ x(0) = H_0 = \frac{MgL}{nF_0} \\ x'(0) = v_0 = 0 \end{cases} \tag{4}$$

The second-order constant coefficient differential equation with the initial value mentioned above has its theoretical solution, and the relation function x(t) of the position of concentric drum with time can be solved as

$$\mathrm{x(t)} = \frac{MgL}{nF} + \frac{MgL}{nFF_0}(\mathrm{F} - F_0) \cdot \cos\left(\sqrt{\frac{nF}{ML}}\mathrm{t}\right) \tag{5}$$

Taking the derivative of the above equation, the relation function v (t) of the movement velocity of concentric drum with time can be obtained

$$\mathrm{v(t)} = \frac{dx}{dt} = -\frac{g}{F_0} \cdot \sqrt{\frac{nF}{ML}}(\mathrm{F} - F_0)\sin\left(\sqrt{\frac{nF}{ML}}\mathrm{t}\right) \tag{6}$$

Considering the actual situation, if the concentric drum colliding with the volleyball occurs at the maximum speed of the concentric drum, the players can make the ball reach as high as possible with the minimum effort. Therefore, the author assumes that when the velocity of the concentric drum reaches the maximum, the drum and the ball collide, namely, the collision time is $t_{crash} = \frac{\pi}{2}\sqrt{\frac{nF}{ML}}$

At this time

$$v_{crash} = \sqrt{\frac{nF}{ML}} \cdot \frac{g}{F_0} \cdot (\mathrm{F} - F_0) \tag{7}$$

In case of collision between concentric drum and volleyball, considering the energy loss in collision between concentric drum and volleyball, the concept of recovery coefficient should be introduced. The recovery coefficient is the ratio of normal relative separation velocity and normal relative approaching velocity of the contact points of the two objects before and after collision, i.e

$$e=\left|\frac{v_1{}'-v_2{}'}{v_1-v_2}\right| \tag{8}$$

According to the material properties of concentric drum and volleyball, the collision is very close to elastic collision, and e=0.95 can be assumed. The mass of the concentric drum is M, and the velocities before and after the collision are $v_{1},v_1{}'$The mass of the volleyball is m, and the velocity before and after the collision is $v_{2},v_2{}'$.

$$\begin{cases} v_1{}'-v_1{}'=-e\cdot(v_1-v_2) \\ Mv_1+mv_2=Mv_1{}'+mv_2{}' \end{cases} \tag{9}$$

It is easy to get the velocities of concentric drum and volleyball after collision as follows:

$$\begin{cases} v_1{}'=\dfrac{(m_1-em_2)v_1+(1+e)m_2v_2}{m_1+m_2} \\ v_2{}'=\dfrac{(m_2-em_1)v_2+(1+e)m_1v_1}{m_1+m_2} \end{cases} \tag{10}$$

In the author's view, the process of exerting force on the concentric drum can be simplified in the following four stages: The first stage $(0-t_1)$ is the constant force F exerted by the team members in order to accelerate the rise of the concentric drum; the second stage $(t_1-t_2)$is the force that the team members exert nonlinear changes on the drum after the completion of the collision; the third stage$(t_2-t_2+\Delta t)$ is the force after the concentric drum reaches the lowest point, In order to stop the movement of the concentric drum, the action time Δt is very short, and this stage can be ignored: The fourth stage(t_2-t_3) is the constant force F0 applied to balance the gravity of the concentric drum when the surface of the concentric drum is at the lowest point, so the whole stage is shown as follows:

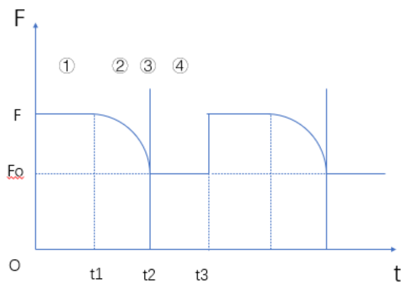

Figure 3: Diagram of periodic force and time variation

Therefore, in order to achieve the best cooperation strategy, it is necessary to ensure that the frequency of periodic movement of each team member is reduced as much as possible under the condition of small force, so that the team member can reach a more comfortable state. It is known that when volleyball colliding with concentric drum, $v_1=\sqrt{2gH},v_2=v_{crash}$. In order to obtain a stable bounce height, it is necessary to ensure that the collision only changes the direction of the velocity of the volleyball without changing its size, i.e. $v_1{}'=-v_1$. Then the relation between H, F0 and F can be established $\mathrm{H}=\mathrm{H}(F_0,F)$

$$\left(1-\frac{2m_1}{(1+e)m_2}\right)\sqrt{2gH}=\sqrt{\frac{ML}{nF}}\cdot\frac{g}{F_0}(F-F_0) \tag{11}$$

Next, we analyze the optimal strategy in this case. We hope that the total energy loss in each collision cycle should be as small as possible. We can let E represent the total energy loss of the concentric drum and volleyball system in a collision, then

$$\mathrm{E}=\frac{1}{2}mv^2(1-e^2) \tag{12}$$

During a cycle of bouncing the ball up and down, it is assumed that all the energy provided by the players is used for the energy consumed when the concentric drum colliding with the volleyball. Therefore, in order to achieve the best cooperation strategy, it is necessary to ensure that the energy consumed by each team member is small. The author believes that it is reasonable and feasible to take the power P used by each team member in a cycle as the evaluation index, namely

$$\mathrm{P}=\frac{E}{n\cdot T} \tag{13}$$

Of course, the lower the height of the bouncing ball, the less people exert force, so when throwing the ball 40cm, people save the most effort, this time the best strategy. When F=90N,t,=0.106s, it corresponds to the following strategy :0.6s is a cycle (the collision time is ignored)t=0, when the volleyball starts to fall, When t=0.194s, all people start to exert force at the same time. During the process, the height of hands is basically unchanged, and the force along the rope direction is constant at 90N. When t= 0.3s, all people stop exerting force (i.e. the rope relaxes) until the next cycle begins. The height of the bouncing ball is 0.45m.

3.2 APPLICATION OF MODEL

In the real situation, it is impossible to control the timing and intensity of the player's force accurately, and there is a certain error, so the drum surface may tilt. We established a model to describe the relationship between the timing and force of the player's force and the tilt Angle of the drum at a particular moment. Assume that the number of players is 8, the rope length is 1.7m, and the drum surface is stationary horizontally at the initial moment, and its initial position drops 11cm compared with that of the rope level. Table 1 shows the different timing and intensity of the players to generate force, and the tilt Angle of the drum surface at 0.1s is calculated.

3.2.1 RATIONALITY OF HYPOTHESIS

The eight people listed in the table default to a tension of 68.15N in the rope when no force is exerted. In particular, the person who did not advance the force was also recorded as having a force of 68.155N on the rope between -0.1s and Os. Because before we start, the force that everyone has to exert on the string to keep the drum still and level is F=68.155N.

3.2.2 THE TRANSLATION OF THE DRUM ONLY TAKES INTO ACCOUNT THE VERTICAL DIRECTION

According to the data of the problem, in the initial state, each person needs a force of 68.155N to offset the gravity of the drum. Therefore, whether a person applies a force of 0.1 seconds earlier or 90N from 0 seconds, he only has about 10N more force than the others. Therefore, the resultant force on the drum in the horizontal direction is about 10N. Therefore, the acceleration of the drum in the horizontal direction is about:

$$a_0 = \frac{10N}{3.6kg} = \frac{2.78m}{s^2} \quad (14)$$

So the horizontal translation of the drum is about

$$s_0 = \frac{1}{2} * 2.78m/s^2 * (0.1s)^2 = 0.014m \quad (15)$$

This distance of more than 1 centimeter is negligible relative to the 1.7-meter rope length

3.2.3 THE TRANSLATION OF THE DRUM DOES NOT TAKE INTO ACCOUNT THE TILT OF THE DRUM

The original vertical component of a force of 80N per person acting on the drum is about 80N*0.11/1.7=5.18N, so the total resultant force of 8 people in the vertical direction is 41.4N. If the head of the drum is tilted upward by 2°(which is a large Angle as you will see below), the edge of the upturned drum will rise by 0.007m and fall by 0.007m on the other side. The vertical component of the two opposite 80N forces acting on the drum is 5.18N*2, which is no different from the original. Even if one person exerted about 10N more than the others, the effect was only 0.04n, apparently negligible. Therefore, when considering the translational motion of the drum, we can ignore the influence of rotation and continue to use the model of the first question.

Since the inclination angles are small, not more than 5°, we will repeat the approximate sinα≈α≈tanα and replace the approximate equals sign with the equal sign. The main symbols in this question are:

α: Inclination Angle of the drum surface (all angles without ° sign are set to radians by default)

w: The angular velocity of the drum

β: Angular acceleration of the drum

F_i(i = 1,2, ... ,8): the force of the ith person on the rope

F_S:Sum of the values of the eight forces (not vector sum)

M_i(i = 1,2, ... ,8): torque produced by the force of the ith individual on the center of the drum

M:Total torque applied to the drum (based on the center of the drum)

I:the moment of inertia of the drum (the shaft is on the horizontal plane through the center of the drum)

3.2.4 THE TURN

This section mainly considers the rotation of the drum. It should be noted that although the influence of the rotation of the drum on translation can be ignored, the translation of the drum has a certain influence on its rotation.

3.2.4.1 THE GEOMETRIC RELATIONSHIP

As shown in the figure, assume that the horizontal plane where the rotating axis is ∩, the inclination Angle α and the height h of the drum are given, then calculate the torque M generated by the rope pulled out at B of the rotating axis difference $\varphi(0 \le \varphi \le \frac{\pi}{2})$ 的 on the drum surface.

As shown in the figure, OA is perpendicular to the rotating axis, the Angle between OB and plane ∩ is γ, the projections of A and B on ∩ plane are RESPECTIVELY A' and B', and the projections of B on the rotating axis are H. By similar relations ∠ BHB= ∠ AOA' = α the BB' =BH sinα = Rsinφ ∗ α , so γ = BB' /BO= α ∗ sin (φ).

The Angle between the rope and the horizontal plane is $\frac{h-R\gamma}{l}$, so the Angle between the rope and OB is

$$\delta_{up} = \frac{h - R\gamma}{l} - \gamma \quad (16)$$

So the torque on the force F in the rope is zero

$$M_{up} = RF_{up}\left(\frac{h - R\gamma}{l} - \gamma\right) \quad (17)$$

Similarly, the torque exerted on the center of the drum by the force F in the rope at C of B is

$$M_{down} = RF_{down}\left(\frac{h - R\gamma}{l} - \gamma\right) \quad (18)$$

Here M_{down} is opposite to M_{up}.

3.2.4.2 THE MOMENT OF INERTIA

A ring of mass m' and radius R has a moment of inertia of $\frac{1}{2}m'R^2$ about an axis of diameter passing through it. According to the parallel axis theorem, if the axis is moved x away from the plane where the ring is located, and the moment of inertia is $\frac{1}{2}m'R^2 + m'x^2$, it can be approximately considered that the mass of the drum is evenly distributed on the edge of its wood, that is, the mass distribution is a covered cylindrical surface, the radius and thickness are R=0.2m and D0 =0.22m respectively, and the rotation axis is on the horizontal plane through the center.

The moment of inertia can be obtained by integrating the cylinder as a disk

$$I = \frac{1}{2}mR^2 + m * \frac{1}{0.22}\int_{-0.11}^{0.11} x^2 dx = 0.08625kg \cdot m^2 \quad (19)$$

From the rotation theorem of rigid bodies

$$M = I\beta \quad (20)$$

By the definition of angular velocity

$$a''(t) = \beta \quad (21)$$

There are geometric relations

$$M = f_0(a, h) \quad (22)$$

3.2.4.3 SOLUTION OF EQUATION

Among the 9 sets of data to be solved, except for the 8th group, all have good symmetry, and the direction of rotation axis can be directly seen:

1. Only the first person in groups 1, 4 and 7 behaved differently from the others, so the rotating axis was the center of the drum and parallel to the line of players 3 and 7.
2. Only the first and second players in groups 2 and 5 behaved differently from the others, and they were the same with each other. The rotation axis was parallel to the bisector line of players 3 and 4.
3. In groups 3, 6 and 9, there are 1 and 4 who are the same but different from the others. The rotation axis is parallel to the Angle line of no. 4 and no. 5.
4. The symmetry of group 8 is weak and will be treated

separately.

The following are the solutions for these cases respectively.

For the convenience of calculation, in the group with advance force, this paper treats it as two processes from 0s to 0.1s, instead of using -0.1 to 0S for calculation.

Groups 1, 4 and 7 can be obtained by using formulas (12) and (13)

$$M_{2,6} \triangleq M_2 + M_6 = R(F_2\left(\frac{h-\frac{R\alpha}{\sqrt{2}}}{l}-\frac{\alpha}{\sqrt{2}}\right)-F_6\left(\frac{h+\frac{R\alpha}{\sqrt{2}}}{l}+\frac{\alpha}{\sqrt{2}}\right) \quad (23)$$

$$M_{4,8} \triangleq M_4 + M_8 = R(F_8\left(\frac{h-\frac{R\alpha}{\sqrt{2}}}{l}-\frac{\alpha}{\sqrt{2}}\right)-F_4\left(\frac{h+\frac{R\alpha}{\sqrt{2}}}{l}+\frac{\alpha}{\sqrt{2}}\right) \quad (24)$$

$$M_{3,7} \triangleq M_3 + M_7 = R\left(F_3*\frac{h}{l}-F_7*\frac{h}{l}\right)=0 \quad (F_3=F_3) \quad (25)$$

$$M_{1,5} \triangleq M_1 + M_5 = R\left(F_1(\frac{h-R\alpha}{l}-\alpha\right)-F_6(\frac{h+R\alpha}{l}+\alpha)) \quad (26)$$

$$M = M_{1,5}+M_{2,6}+M_{3,7}+M_{4,8} = R(F_1+3F_5)\left(-1-\frac{R}{l}\right)\alpha+(F_1-F_5)\frac{h}{l} \quad (27)$$

Solution:

$$\alpha(t) = \frac{d*\cos(kt)}{c-Ik^2}+\frac{f}{c}+a_1*\cos(ut)+a_2*\sin(ut) \quad (28)$$

Among them

$$u \triangleq \sqrt{\frac{c}{I}} \quad (29)$$

a_1 , a_2 are two undetermined constants uniquely determined from the initial inclination $\alpha(0)$ and the initial angular velocity $\alpha'(0)$ as follows

$$a_1 = \alpha(0)-\frac{d}{c-Ik^2}-\frac{f}{c} \quad (30)$$

$$a_2 = \frac{\alpha'(0)}{u} \quad (31)$$

The codes for calculating a_1, a_2 and $y(t)$ expressions are given in the appendix, and the results are given below.

Table 1. Data of tilting Angle of drum surface under eight groups of different parameters

Number	The expression for the Angle of inclination α with respect to t	Angle of drum (degree)
1	$y(t) = 0.0003230\cos(10.306t) + 0.001472 - 0.001795\cos(29.20t)$	0.194
2	$y(t) = 0.0005826\cos(10.31t) + 0.002662 - 0.003245\cos(29.51t)$	0.352
3	$y(t) = 0.0002534\cos(10.31t) + 0.001151 - 0.001404\cos(28.88t)$	0.151
4	$y(t) = 0.0005852\cos(9.541t) + 0.002359 - 0.002418\cos(27.11t)$ $y(t) = 0.004590\cos(28.75t) + 0.0009358\sin(28.75t)$	0.24
5	$y(t) = 0.0001046\cos(9.541t) + 0.004235 - 0.004340\cos(27.51t)$ $y(t) = 0.008308\cos(28.75t) + 0.001544\sin(28.75t)$	0.436
6	$y(t) = 0.0004634\cos(9.541t) + 0.001861 - 0.001907\cos(26.71t)$ $y(t) = 0.003587\cos(28.75t) + 0.0007910\sin(28.75t)$	0.186
7	$y(t) = 0.0001884\cos(9.626t) + 0.004129 - 0.004318\cos(27.58t)$ $y(t) = 0.0002899\cos(10.31t) + 0.001472 - 0.006480\cos(29.20t) + 0.001475\sin(29.20t)$	0.251
8	$y(t) = 0.0004634\cos(9.541t) + 0.001861 - 0.001907\cos(26.71t)$ $y(t) = 0.0002393\cos(10.31t) + 0.001151 - 0.001146\cos(28.88t) + 0.0005568\sin(28.88t)$	0.146
9	$y(t) = 0.0004635\cos(9.541t) + 0.001861 - 0.001907\cos(26.71t)$ $y(t) = 0.0002393\cos(10.31t) + 0.001151 - 0.004977\cos(28.88t) + 0.0007874\sin(28.88t)$	0.338

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Research On Shared Vehicle Scheduling Model Based on Particle Swarm Optimization Topsis Model

Hanchen Wang[1,2], Chenyang Cao[1,2], Tong Huang[1,2]*
[1]Mathematical Modeling Innovation Lab North China University of Science and Technology, Tangshan 063210, China;
[2]School of Yisheng Innovation Education North China University of Science and Technology, Tangshan 063210, China
[*]Corresponding Author.

Abstract: Shared cars play a major role in solving traffic congestion and facilitating people's lives. However, behind it, there are still problems such as high operating costs and chaotic scheduling systems, which hinder the healthy and sustainable development of shared cars. First, as consumers, they cannot meet their travel needs in time. Secondly, as a car-sharing company, the chaotic leasing system makes it impossible to balance the supply and demand of vehicles and maximize benefits. Aiming at the problems faced by car-sharing companies, this article focuses on the corporate perspective. Through the previous analysis, we summarized 6 types of influencing factors: the number of parking spaces, the number of dispatchers, the salary of dispatching staff, the number of vehicles, pricing, and the rate of vehicle utilization. According to the particle swarm optimization, the respective weights are obtained, and the Topsis shared car scheduling model is substituted for scoring. According to the actual situation, it is proposed that vehicles should be dispatched to parks, shopping malls and other areas where users are concentrated during peak hours, and the price per kilometer should be appropriately increased. Adopt the scheduling recommendations of the nearest matching principle.

Keywords: Map Visualization; Particle Swarm Optimization; Topsis; Shared Vehicle Scheduling

1. PROBLEM BACKGROUND

In recent years, as a new public transport travel mode, shared car has the characteristics of "short-term leasing and stop and go", which has greatly enriched China's urban public transport network system and complemented with other public transport travel modes. Urban rail transit has the advantages of high speed, large traffic volume, low carbon, environmental protection, safety and efficiency. "Car sharing and rail transit (car sharing and rail tansit) travel horizontal mode combines the advantages and characteristics of the two and has broad development prospects. However, at present, there is little research on the scheduling of transfer and connection between car sharing and rail transit.

In the context of traffic and purchase restrictions in major cities, shared cars, as a beneficial supplement to the public transport system, provide travel convenience for people with "certificates without cars" and gradually enter people's vision. It is predicted that the development speed of China's car sharing market will be higher than the global average. In the next five years, the average annual compound growth rate will reach 83%. Although the shared vehicle industry has a good development momentum, the problems behind it, such as high operating costs and chaotic dispatching system, hinder the healthy and sustainable development of shared vehicles. The cost composition of the shared automobile industry is complex. Optimizing the network layout of the leasing system and dispatching vehicles reasonably and efficiently through effective mechanisms and methods is of great significance to improve enterprise profits and promote the healthy and sustainable development of the industry.

2. RAISING QUESTIONS

With the rapid development of economy and the acceleration of urbanization, the growth of urban residents and private cars has brought great pressure to the urban transportation system. Existing studies have shown that car sharing system can effectively reduce the carrying pressure of public transport, save urban parking spaces and reduce air pollution. Compared with two-way car sharing system, one-way system allows users to pick up and return vehicles at different locations, improves vehicle flexibility, and benefits users and operators, Due to the tidal and unbalanced travel of users, the flow from one station to another is rarely equal to the flow in the opposite direction, which will lead to the imbalance of vehicles and parking spaces between stations. This problem will reduce the overall efficiency and user experience of the system. Therefore, vehicle relocation problem between different stations is an important problem in the operation of single program shared vehicle system.

As a global innovative mobile concept, shared car has solved the problems of difficult parking, air pollution and traffic congestion to a certain extent. However, the tide and imbalance of users' travel demand lead to the imbalance of vehicles between stations. During the operation period, some outlets are prone to accumulate and some outlets have no cars to rent, which can not meet the needs of users in time, which greatly restricts the rapid development of shared vehicles. Considering the different needs of users for shared vehicles in different periods and locations, we propose TOPSIS shared vehicle scheduling model based on particle swarm optimization, conduct comprehensive research on network location and vehicle scheduling, and evaluate the development of shared vehicles in Tel Aviv at the strategic and operational levels, At the strategic and operational level, solve the problems of unreasonable network layout and unbalanced system supply and demand of shared vehicle system, help enterprises make reasonable planning and operation decisions, meet customer needs and realize enterprise profitability.

3. MODEL ASSUMPTIONS

Shared automobile enterprises shall not refuse user orders.

Each station is equipped with a charging pile to ensure that the shared car can be charged at any time.

Shared cars can be repaired and maintained at any time to maintain a serviceable state.

In the future, the government will not hinder the development policy of sharing cars.

The maximum mileage of shared vehicles is greater than the distance between the two nearest stations.

4. MODEL ESTABLISHMENT

4.1 PROBLEM ANALYSIS

According to the longitude and latitude of all data, the location is Tel Aviv, Israel. In order to more comprehensively analyze the specific distribution of shared cars in Tel Aviv, we screen the data and screen the data at different time points in the same section, so as to reflect the use distribution of shared cars in the city. Using the folium package in Python to process the filtered data, the map visualization of the distribution of shared vehicles in Tel Aviv is carried out, and the scatter diagram of the distribution of shared vehicle stations in the city (Fig. 1) and the thermal diagram of the distribution of shared vehicle stations (Fig. 2) are obtained.

Figure 1 scatter diagram of shared car stations in Tel Aviv

It can be seen from the scatter diagram of shared car stations (Fig. 1) that the shared car stations in the north of the city are relatively dense. In comparison, the shared car stations in the coastal area in the southwest are relatively loose. Referring to relevant map data, it can be seen that there are few commercial clusters in the coastal areas of Southwest China with less distribution of shared cars, such as Metropolitan Hotel, Tel Aviv Hilton Hotel, Tel Aviv beach Crowne Plaza Hotel, etc. The denser car sharing stations in the north are mostly distributed near Schuster shopping center, Yafu cartel Park and alliance high school.

As can be seen from the thermal map of shared car station distribution (Fig. 2), the shared cars in Tel Aviv are distributed in blocks, and the concentrated places of shared cars are mostly distributed around the road, which is divided into many gathering areas by the road. Moreover, in areas where there are relatively many commercial buildings, the distribution points of shared cars are also dense.

Figure 2 distribution of shared car stations in Tel Aviv

4.2 RESEARCH METHOD

In order to better study the shared vehicle scheduling problem, from the perspective of enterprise profit, according to the previous analysis and consulting relevant data, we get six kinds of adjustable influencing factors: the number of parking spaces, the number of dispatchers, the salary of dispatchers, the number of vehicles, pricing and vehicle utilization. We simulate the factor data according to the actual situation, and use particle swarm optimization algorithm to optimize various factors to obtain the weight, The TOPSIS algorithm is used to establish the shared vehicle scheduling evaluation model, so as to provide a scheme for the rational scheduling of shared vehicles in Tel Aviv.

4.3 MODEL PRINCIPLE

Particle swarm optimization (PSO) is an evolutionary computing technology. It comes from the study of predation behavior of birds. The basic idea of particle swarm optimization algorithm is to find the optimal solution through cooperation and information sharing among individuals in the group

The advantage of PSO is that it is simple and easy to implement, and there is no adjustment of many parameters. At present, it has been widely used in function optimization, neural network training, fuzzy system control and other application fields of genetic algorithm.

Particle swarm optimization algorithm designs a massless particle to simulate the birds in the bird swarm. The particle has only two attributes: speed and position. Speed represents the speed of movement and position represents the direction of movement. Each particle separately searches for the optimal solution in the search space, records it as the current individual extreme value, shares the individual extreme value with other particles in the whole particle swarm, and finds the optimal individual extreme value as the current global optimal solution of the whole particle swarm, All particles in the particle swarm adjust their speed and position according to the current individual extreme value found by themselves and the current global optimal solution shared by the whole particle swarm.

In particle swarm optimization (PSO), the potential solution of each optimization problem is a bird in the search space, which is called particle. The potential solution of each optimization problem is a bird in the search space, which is called a particle. All particles have a fitness value determined by the optimized function, and each particle also has a speed to determine their flying direction and distance. The particles follow the current optimal particle to search for the best position in the solution space.

Suppose there are N particles in a group, different individuals have different positions x_i, and they fly at a certain speed v_i in the control. Different positions correspond to different individual fitness function values f (x_j) related to the optimization objective function values. POS is initialized as a group of random particles (random solutions), and then the optimal solution is found through iteration. In each iteration, the particle updates itself by tracking two extreme values: the first is the best position experienced by the particle itself, which is P_j = [P_j1, P_j2... P_j7]T, also known as P_{best}, and the second is the best position experienced by all particles in the population, which is P_g = [P_g1, P_g2... P_g7]T, also known as (K+1) if the velocity and position of the j particles of generation K are known The velocity and position of each particle in generation j are:

$$V_j^{(k+1)}=w^{(k)}V_j^{(k)}+c_1r_{j1}(P_j\text{-}X_j^{(k)})+c_2r_{j2}(P_g\text{-}X_j^{(k)}) \quad (1)$$

$$X_j^{(k+1)}=X_j^{(k)}+V_j^{(k+1)} \quad (2)$$

$$w^{(k)}= w_{max}\text{-k}(w_{max}\text{-}w_{min})/\ k_{max} \quad (3)$$

Where: $w^{(k)}$ is a function of the number of iterations and decreases linearly with the number of iterations;

w_{max}: initial inertia weight;

w_{min}: termination inertia weight

k_{max}: Maximum number of iterations.

c_1 : acceleration weight coefficient of particle itself, generally between 0 and 2;

c_2 :global acceleration weight coefficient, generally between 0 and 2;

r_1, r_2: [0,1] two independent and uniformly distributed random numbers.

The first part of formula (1) is called [memory item], which represents the influence of the last speed and direction; The second part of formula (1) is called [self cognition item], which is a vector from the current point to the best point of the particle itself, indicating that the action of the particle comes from its own experience; The third part of formula (1) is called [group cognition item], which is a vector from the current point to the best point of the population, reflecting the cooperation and knowledge sharing among particles. Particles determine their next movement through their own experience and the best experience of their companions. Based on the above two formulas, the standard form of PSO is formed. Equations (2) and (3) are considered as standard PSO algorithms.

The flow of basic particle swarm optimization algorithm is as follows:

Step 1: initialize particle swarm, including swarm size N, position and velocity of each particle

Step 2: calculate the fitness value f(x_j) of each particle;

Step 3: for each particle, compare its fitness value f (x_j) with the individual extreme value. If f (x_j) is better than, replace it with f (x_j);

Step4: for each particle, compare its fitness value f (x_j) with the global extreme value. If f (x_j) is better than, replace it with f (x_j);

Step5: update the speed and position of particles according to the formula;

Step 6: exit if the end conditions are met (the error is good enough or the maximum number of cycles is reached), otherwise return to step 2.

4.4 SHARED VEHICLE SCHEDULING MODEL

In Python, we use TOPSIS method to establish evaluation class model. Firstly, we forward the original data matrix. That is, all the data corresponding to those minimal indicators, intermediate indicators and interval indicators are transformed into very large indicators, which is convenient for unified calculation and processing. Secondly, the forward matrix is standardized. Eliminate the influence of dimension through standardization, and finally calculate the score and sort.

For an index, entropy can be used to judge the dispersion degree of an index. The smaller the information entropy, the greater the dispersion degree of the index, and the greater the impact (i.e. weight) of the index on the comprehensive evaluation. If the values of an index are all equal, the index will not play a role in the comprehensive evaluation. Therefore, particle swarm optimization algorithm can be used to calculate the weight of each index, seek the optimal influencing factors, provide basis for multi index comprehensive evaluation, and further optimize TOPSIS evaluation model. According to the TOPSIS evaluation model, the five schemes are scored to find the optimal scheduling scheme.

4.5 MODEL SOLVING

Five simulation data schemes are substituted into TOPSIS shared vehicle scheduling model, and the comprehensive scoring results are shown in the table below.

Table 1 score of simulation data scheme

Number of parking spaces	Number of dispatchers	Dispatcher salary	Number of vehicles	Price	Vehicle utilization	Score
10000	2	6000	10000	20	90	74.5
15000	2	6000	15000	20	70	63.9
10000	2	6000	10000	20	90	70.6
10000	2	6000	10000	25	70	72.4
10000	3	6000	10000	20	90	79.8

5. SCHEDULING SUGGESTIONS

According to the existing data, we visualized the scatter plot of car-sharing sites in Tel Aviv, Israel. We found that car-sharing sites are mostly distributed in some commercial clusters, such as Shuster Shopping Center and Yafo Cartel Park, while in the big city. Around the Metropolitan Hotel and the Tel Aviv Hilton Hotel, there are few car-sharing sites; car-sharing sites are mostly distributed around the roads, which are divided into shared car clusters.

1.Following the principle of profit maximization, when vehicles are dispatched to parks, shopping malls and other user concentrated areas during peak hours, the amount of vehicles put in non concentrated areas shall be appropriately reduced, so as to improve the utilization rate of single vehicles and reduce maintenance costs and fuel costs.

2.The price per kilometer can be appropriately increased. According to the data forecast, when the price increase is about 20%, the profit will be maximized. Otherwise, the vehicle utilization rate will be reduced due to excessive pricing, which will lead to lower profits.

3.The principle of nearest matching shall be adopted for dispatching vehicles to reduce unnecessary fuel loss in the dispatching process, reduce costs and increase profits.

6. MODEL EVALUATION

6.1 MODEL ADVANTAGES

1.TOPSIS algorithm is suitable for small sample data, such as the scarcity of some factors and incomplete data. It is also applicable to the large-scale system with multiple evaluation units and multiple indicators. It can comprehensively evaluate the distribution of shared vehicles, which is more flexible and convenient.

2.TOPSIS shared vehicle scheduling analysis model is based on the weights of various influencing factors obtained by particle swarm optimization algorithm to reduce the impact of subjective factors on the accuracy of the model, and the results are more accurate.

3.Particle swarm optimization algorithm is simple and easy to implement, and there are not many parameters to be adjusted. Fast search speed, suitable for real value processing.

6.2 MODEL SHORTCOMINGS

1.Particle swarm optimization algorithm lacks dynamic adjustment of speed and is easy to fall into local optimization, resulting in low convergence accuracy.

2.It is necessary to control the parameters and select the appropriate shared vehicle parameters to achieve the optimal effect.

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Raw Material Ordering and Transportation Scheme Based on Objective Optimization

Renfang Wang[3], Xiaomeng Yang[3], Zehui Dou[1,2*]
[1]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]College of Artificial Intelligence, North China University of Technology, Tangshan 063210, China;
[3]School of Science, North China University of Science and Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: Taking the production cost as the objective function and the order quantity of three kinds of raw materials A, B and C not exceeding the maximum value and supply quantity of all kinds of raw materials in the most important supplier within 5 years as the constraint conditions, the low-cost ordering scheme model based on single objective optimization is established. The minimum objective function is calculated when the order quantity of A, B and C materials is 25606m3, 4726m3 and 4725m3 respectively. That is, the optimal ordering scheme is satisfied when 19 class A raw materials, 1 Class B raw material and 1 class C raw material are ordered. , on the other hand, on the basis of the order plan, with three kinds of raw material transport: attrition rate and raw materials for class A lowest attrition rate minimum as objective function, the first k suppliers transshipment cargo volume transfer traffic volume is less than 6000 m3, three kinds of raw materials shall not be less than the quantity of each as constraint conditions, to establish minimum transport model based on multi-objective optimization loss and It is calculated that when there are 6 transporters with low attrition rate, the transport scheme with the lowest loss can be satisfied. 50 based on the most important suppliers, ignoring capacity is the smallest class C raw material, with A, B two kinds of raw material production capacity of the objective function, two kinds of raw material transfer loss minimum, transfer capacity is 6000 m3, supplier is less than 5 years of maximum supply limits as constraint conditions, based on single objective optimization, the capacity of the largest order and transport plan model. Finally, the ordering plan and transportation plan are worked out, and the maximum weekly total production capacity of the enterprise is 75892.56m3, and the weekly total production capacity increases by 69.12%.
Keywords: Objective optimization; ARIMA

1. INTRODUCTION

The enterprise needs to purchase raw materials sufficient to meet the production demand, and select several suppliers with the highest output from the 50 most important suppliers on the basis of question 1, that is, select a few suppliers and meet the basic requirements of the enterprise's production. Secondly, according to the selected suppliers, the most economical ordering scheme and the most economical and least wastage transport scheme are formulated for the enterprise in the next half year. Finally, the implementation effect of these two schemes is reasonably analyzed.

One of the production goals of the enterprise is to reduce costs. In order to reduce production costs, the enterprise plans to increase the purchase of class A and class C raw materials, and reduce the basic transportation and storage costs. Loss of raw materials cannot be avoided in the process of transportation, so it is necessary to provide a plan to reduce the material loss rate during transportation. Finally, according to these enterprise objectives, a complete optimal ordering and transshipment scheme is developed, and the implementation effect of this scheme is analyzed.

2. EXPERIMENTAL

2.1 Low cost ordering scheme based on single objective optimization

If enterprises want to reduce costs, they need to choose raw materials with lower unit price and higher output. For each cubic meter of products produced by enterprises, raw material A, raw material B and raw material C need 0.6 cubic meter, 0.66 cubic meter and 0.72 cubic meter respectively. The unit price of class A and CLASS B raw materials is 20% and 10% higher than that of Class C raw materials. If the unit price of class C material is 1, the unit price of class A and B raw materials is 1.2 and 1.1. If you want to produce products per cubic meter with class A, B and C raw materials, the costs will be 0.72, 0.726 and 0.72 respectively. By comparing the product consumption and unit price of A, B and C raw materials, it can be seen that the cost of practical CLASS A and C materials is lower than that of Class B materials for the production of the same number of products, so the selection of raw materials of products should be more inclined to class A and C.

In order to reduce the cost of production, besides the procurement cost of raw materials, the outflow of funds during the transportation and storage of raw materials should also be considered. Compared with the conversion rate of the products produced by the three types of raw materials, it can be found that the conversion rate of class A is the highest. This enterprise can produce one cubic meter of products by using 0.6 cubic meter of Class A raw materials, followed by Class B raw materials, and finally C raw materials. Therefore, the transportation and storage costs should be considered in favor of Category A and B.

The enterprise now plans to purchase more class A products and minimize the purchase of class C products. The existing model needs to be improved.

2.2 Establishment of ordering scheme model

Assuming that the order quantity of class A, B and C raw materials is X1, X2 and x3 respectively, and the unit cost of class C raw materials is W, the unit cost of class A and B raw materials is 1.2W and 1.1W respectively (to simplify the calculation process, w can be set as 1).

*Step1:*According to the requirements of the question, we can establish the minimum cost formula when the order quantity of three kinds of raw materials is unknown

$$min\{1.2wx_1 + 1.1wx_2 + wx_3\} \tag{1}$$

*Step2:*Determination of constraint conditions. In question 1, suppliers have been selected and 50 of the most important suppliers have been identified. It is assumed that class A, B and C among the 50 suppliers are considered separately in the selection process. When all class A raw material suppliers are selected, 25606 cubic meters of Class A raw material can be produced at most. This value is the sum of the maximum supply of 19 Class A suppliers in 5 years[1]. When the weekly maximum supply is greater than 6000 m3, the excess supply is ignored, and the maximum supply of each supplier is shown in Appendix 3. Similarly, the supplier of Class B raw materials can produce 37,552 cubic meters of raw materials at most, while the supplier of Class C raw materials can produce 29,323 cubic meters of raw materials at most.

$$\begin{cases} x_1 \le 25606 \\ x_2 \le 37552 \\ x_3 \le 29323 \end{cases} \tag{2}$$

Step3: It is known that when purchasing raw materials, enterprises should ensure that the raw material inventory at one time is not less than the raw material inventory to meet the production demand of two weeks. Therefore, the production capacity of enterprises in a week $K = 2 \times 2.82 \times 10^4 = 56400m^3$, then the order quantity of three kinds of raw materials and the production capacity of enterprises in a week meet the following formula:

$$\frac{x_1}{0.6} + \frac{x_2}{0.66} + \frac{x_3}{0.72} = 56400 \tag{3}$$

Step4: As the question indicates that the enterprise will purchase as many class A raw materials as possible and reduce class C raw materials, and in order to reduce the production cost, the unit price and conversion rate of class A raw materials are better than that of Class B and CLASS C. Therefore, the comparison formula of raw material order quantity can be obtained:

$$\begin{cases} x_3 - x_2 \le 0 \\ x_3 - x_1 \le 0 \end{cases} \tag{4}$$

Comprehensive model:

For the supplier selection model with the lowest cost, the comprehensive model is established based on the above analysis:

$$min\{1.2wx_1 + 1.1wx_2 + wx_3\} \tag{5}$$

$$s.t. \begin{cases} \text{The constraint} \begin{cases} x_1 \le 25606 \\ x_2 \le 37552 \\ x_3 \le 29323 \\ x_3 - x_2 \le 0 \\ x_3 - x_1 \le 0 \end{cases} \\ \dfrac{x_1}{0.6} + \dfrac{x_2}{0.66} + \dfrac{x_3}{0.72} = 56400 \end{cases} \tag{6}$$

2.3 Transport scheme model based on double objective optimization

By determining the ordering scheme with the lowest cost, and by establishing a double-objective optimized transport scheme model and the ordering scheme, the transport scheme of the transporter can be determined, so that the transport loss rate satisfying the transport cost and storage is low, as follows:

Establishment of transport scheme model:

Step1: Identify the assumptions. Suppose a_i is the order quantity of the selected supplier, where $i \in [1,21]$ and is A positive integer. When $i \in [1,19]$, a_i is the order quantity of class A supplier[2]. When I =20, a_i is the order quantity of class B supplier; When I =21, a_i is the order quantity of class B supplier. Let $T_k \backslash T_j \backslash T_m$ be the transshipment carriers of A, B and C materials respectively, where $k, j, m \in 2,3,4,5,6,8, b_{ik}$ represents the quantity of goods transported by the KTH supplier.

Step2: Transport loss. According to the hypothesis of Step1, the wastage of three kinds of raw materials A, B and C can be calculated respectively, namely:

$$\begin{cases} B: a_{20}T_j, j \in \{2,3,4,5,6,8\} \\ A: \sum_{i=1}^{19} a_i T_k, k \in \{2,3,4,5,6,8\} \\ C: a_{21}T_m, m \in \{2,3,4,5,6,8\} \end{cases} \tag{7}$$

Step3: Constraints. Since the supplier is transshipped by the transporter, and the loss rate of the transporter should be as small as possible, one transporter has to transship the raw materials of multiple suppliers, that is, the amount of goods that can meet the requirements of the KTH transporter is less than 6000;

Based on the ordering scheme model, the order quantity of three kinds of raw materials is obtained, namely, the order quantity of class A is 25606 m^3; The order quantity of Class B is 4726 m^3; The order quantity of class C is 4725 m^3, and the actual supply quantity may be more or less than the order quantity, so the three types of raw materials transported by the transporter shall not be less than their respective order quantity.

$$s.t. \begin{cases} \sum_{i=1}^{21} b_{ik} \le 6000, k \in \{2,3,4,5,6,8\} \\ \sum_{i=1}^{19} a_i \ge 25606, k \in \{2,3,4,5,6,8\} \\ a_{20} \ge 4726, k \in \{2,3,4,5,6,8\} \end{cases} \tag{8}$$

Step4: Target function. In order to reduce the transport and warehouse costs and minimize the transport loss rate of the transporters, the objective function is determined as the loss rate of the transporters. Since the capacity of class A raw materials is the largest, the loss rate of the transporters of class A raw materials is as low as possible[3]. The objective function is:

$$\begin{cases} \min\left\{\sum_{i=1}^{19} a_i T_k + a_{20}T_j + a_{21}T_m\right\} \\ \min\left\{\sum_{i=1}^{19} a_i T_k\right\} \end{cases} \tag{9}$$

To sum up, the dual-objective optimization model is as follows:

$$\min\left\{\sum_{i=1}^{19} a_i T_k + a_{20}T_j + a_{21}T_m\right\} \tag{10}$$

$$\min\left\{\sum_{i=1}^{19} a_i T_k\right\} \tag{11}$$

$$s.t.\begin{cases}\sum_{i=1}^{21} b_{ik} \le 6000, k \in \{2,3,4,5,6,8\} \\ \sum_{i=1}^{19} a_i \ge 25606, k \in \{2,3,4,5,6,8\} \\ a_{20} \ge 4726, k \in \{2,3,4,5,6,8\}\end{cases} \quad (12)$$

2.4 A model of maximum order transshipment scheme based on single objective optimization

The technological transformation of an enterprise can promote the growth of production capacity and ensure the development speed of enterprise economy. Technical transformation is mainly the update of equipment, the transformation of production technology and the transformation of labor objects, after the transformation of the enterprise production capacity will be greatly improved, the enterprise and our country's technical transformation has a prominent position.

The enterprise given in the topic has carried out technological transformation and has the ability to increase production capacity, which will inevitably lead to an increase in the demand for raw materials. In order to meet the normal production of the enterprise after innovation, it needs to purchase raw materials as much as possible. In the first question, we have obtained 50 important suppliers with the most potential for cooperation in the market. We do not set the upper limit of production capacity after technological transformation, and purchase as many raw materials produced by 50 suppliers as possible. Known from the analysis of problems in the three, class C raw material conversion rate low, and the difference between A and B class raw material conversion rate is bigger, in order to guarantee the capacity of the enterprise, at the same time reduce the unnecessary part during the process of transport and warehousing costs, we excluded the class C the purchase of raw materials, increase the purchase of A, B two kinds of raw material, Increase the capacity of the enterprise as much as is allowed.

Model establishment:

Step1: Let H_k represent the loss rate of the transporter in the transportation of Class A raw materials, H_m represent the loss rate of the transporter in the transportation of Class B raw materials. c_i represents the order quantity received by class A raw material suppliers, d_j represents the order quantity received by class B raw material suppliers, where I $\in$ (1,19), j$\in$ (1,14). We use topsis model to deal with all suppliers and rank them according to the score. Let the maximum capacity K be satisfied.

$$max\left\{\frac{\sum_{i=1}^{19} c_i(1-H_k)}{0.6}+\frac{\sum_{j=1}^{14} d_j(1-H_m)}{0.66}\right\} \quad (13)$$

can be known that when the loss rate of class A and Class B raw materials reaches the minimum, the maximum production capacity of the product can be obtained. In order to reduce the total loss rate, it is necessary to minimize the loss rate during a single transfer. In order to obtain the minimum values of the two types of materials, the following formula is listed:

$$\begin{cases}\min\left\{\sum_{i=1}^{19} c_i H_k\right\} \\ \min\left\{\sum_{j=1}^{14} d_j H_m\right\}\end{cases} \quad (14)$$

Step2: Let e_{ik} represent the order quantity of the k-th transporter corresponding to the category A supplier, and f_{jm} represent the order quantity of the m-th transporter corresponding to the category B supplier. When the raw materials are ready, the transporter will transport the raw materials. During the transportation process, the raw materials supplied by one supplier each week will be transported by one transporter. Therefore, the most perfect transportation scheme can be obtained by organically combining the maximum amount of raw materials produced by the two suppliers. That is, when all raw materials are transported from the transporter to the enterprise, the transshipment volume of all raw materials will reach the maximum value every time and all raw materials will be transported exactly.

$$\begin{cases}\sum_{i=1}^{19} e_{ik} = 6000 \\ \sum_{j=1}^{14} f_{jm} = 6000\end{cases} \quad (15)$$

Step3: Among the 50 most important suppliers, the number of class A suppliers is more than that of Class B suppliers, and the conversion rate of Class A raw materials is higher than that of Class B, and less class A raw materials are used in the production of one unit of product, so the loss rate in transit will be lower than that of Class B.

$$H_k \le H_m \quad (16)$$

Step4: In order to improve the production capacity, it is necessary to purchase enough raw materials as the production basis. Therefore, we compare the weekly production of the most important supplier in the attachment in 240 weeks, select the maximum that can be produced as the order quantity of the enterprise, and use the maximum as the future production standard for raw material production[4].

$$\begin{cases}c_1 \le 3147 & d_1 \le 6000 \\ c_2 \le 1724 & d_2 \le 1181 \\ \vdots & \vdots \\ c_{19} \le 393 & d_{14} \le 162\end{cases} \quad (17)$$

Based on the above analysis, all the constraint conditions of the enterprise in calculating the maximum total capacity can be obtained, so the following model is established to determine the weekly capacity improvement value of the enterprise:

$$max\left\{\frac{\sum_{i=1}^{19} c_i(1-H_k)}{0.6}+\frac{\sum_{j=1}^{14} d_j(1-H_m)}{0.66}\right\} \quad (18)$$

$$s.t.\begin{cases}\begin{cases}min\sum_{i=1}^{19} c_i(1-H_k) \\ min\sum_{j=1}^{14} d_j(1-H_m)\end{cases} (k,m \in (1,8)) \\ \begin{cases}\sum_{i=1}^{19} e_{ik} = 6000 \\ \sum_{i=1}^{14} f_{jk} = 6000\end{cases} \\ H_k \le H_m \\ \begin{cases}c_1 \le 3147, & d_1 \le 6000 \\ c_2 \le 1724, & d_2 \le 1181 \\ \vdots & \vdots \\ c_{19} \le 393, & d_{14} \le 162\end{cases}\end{cases} \quad (19)$$

2.5 Results

Ten class B suppliers {S346, S031, S338, S367, S055, S040, S364, S139, S108, S330} were selected, among which three were replenishment suppliers {S031, S364, S346}, and the remaining seven were maximum suppliers. The final total volume of class A raw materials is 2548.9 cubic meters, and the product capacity is 42476.5 cubic meters. The total amount of class B raw materials transferred is 22054.6 cubic meters, and the product capacity is 33,416.06 cubic meters. Therefore, after technical transformation, the total weekly production capacity of the enterprise is 75,892.56 cubic meters, and the original production capacity is 56,400 cubic meters. The part exceeding the original weekly production capacity is 75,892.6-54600 = 19,492.56 cubic meters. After the improvement of efficiency, the enterprise can produce all the raw materials for two weeks, while the capacity of the week before the improvement is only 28200, that is, the final capacity efficiency has been improved by 69.1%.

3.Model evaluation

3.1 Advantages of model

The purchasing and transshipment model uses the linear programming model, through our model can achieve the highest productivity effect of the enterprise, and based on mathematical derivation, the solving process is strict, the results are reliable, has a strong persuasion.

In model verification, ARIMA model prediction strongly confirmed the average attrition rate as the degree of transport loss.

3.2 Model shortcomings

In order to simplify the model, the average value is directly used as the weekly attrition rate of the transporter, so that the weekly ordering and transshipment schemes are the same. Although it is not different from the attrition rate predicted in the next 24 weeks, there is also a certain error.

3.3 Test of model: Test model of transport scheme based on time series

When solving the problem, the average loss rate of 5 years is used as the loss degree of 8 transporters in the construction of the transport scheme model. In order to verify the rationality of the average loss rate as the loss degree, that is: In order to test whether the average loss rate in 5 years can reflect the loss degree of the transporter, a test model of the transport scheme based on time series algorithm is established. Details are as follows:

Step1: It is found that the attrition rate of each transporter changes periodically within 5 years, and the general level of the attrition rate of the transporter can be predicted according to the attrition rate law of the periodic change.

Step2: A time series algorithm was used to predict the attrition rate for the next 24 weeks based on the attrition rate of the transporters in the data for 5 years

Step3: Draw the prediction map and found eight suppliers next 24 weeks of attrition rate from small to large, ranking of $T6 < T3 < T4 < T8 < T5 < T2 < T1 < T7$ by the average attrition rate of figure 6 transshipment business knowledge attrition rate for five years the average of the rankings for $T3 < T6 < T4 < T8 < T2 < T5 < T1 < T7$, comparative ranking found difference is not big, namely: transshipment business can use five years the wastage of the transport: the average attrition rate to mean business.

Step4: Verify the rationality of the time series model. Through SPSS software, it was found that all the 8 transporters were in line with ARIMA model. The specific statistical results are shown in Table 1. R2 of T3, T4, T5, T6, T7 and T8 were all greater than 0.7, indicating that the ARIMA model had a good fitting effect. Although R2 of T1 and T2 is <0.7, the significance level of T1 and T2 is greater than 0.05, that is, the original hypothesis is accepted, which further indicates that ARIMA model of T1 and T2 has good fitting effect.

Table 1 Statistical results of ARIMA model

model	R party	R party smoothly	statistical	DF	significant	The number of outliers
T1_1	0.654	0.654	17.556	17	0.417	3
T2_2	0.346	0.346	12.074	16	0.739	1
T3_3	0.960	0.960	609.715	16	0.000	7
T4_4	0.997	0.997	60.849	14	0.000	81
T5_5	0.990	1.000	43.276	16	0.000	69
T6_6	0.993	1.000	33.432	16	0.006	61
T7_7	0.758	0.723	20.067	17	0.271	14
T8_8	0.891	0.891	22.179	17	0.178	17

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Time Series Analysis of The Impact of US Presidential Candidates on Chinese and Us Economies

Renzhuo Wang[1,2], Yi Zhu[1], Yibo Wang[1]
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Artificial Intelligence, North China University of Science and Technology, Tangshan 063210, China

Abstract: Due to differences in political positions and programs, different candidates elected in the United States will form different global economic and financial development strategies. Therefore, based on time series and random forest, the sino-US economic forecasting model is established to analyze and compare the influence of Biden and Trump's election on the Sino-US economy. Among them, economic data in the past decade were collected, indicators reflecting economic conditions were screened by Pearson correlation analysis, sino-US economic evaluation system was established by random forest model, and economic weight equation was constructed. Then, the data of trump and former Democratic presidents are used to predict the economic data of Trump and Biden in the future through time series, and the economic weight equation is used to compare the influence of the two candidates on the Chinese and American economies. The results show that the rate of change of U.S. economy under Biden and Trump is 0.4023 and 0.0883 respectively. The changes of China's economy are 0.3894, 0.3728 respectively, and rationalization suggestions are proposed for China's coping strategies.
Keywords: Time Series Model; Random Forest; Pearson correlation analysis; Economic policy

1. INTRODUCTION

In today's world economic system, the United States is the largest economy and the largest importer. The direction of its economic policy will have a profound impact on China's economy and even the world's economic growth[1].In the US presidential election, Republican candidate Donald Trump and Democratic candidate Biden ran for president. Their political positions represent the political interests of the two parties, and the conflicts between the two are fierce. The Democratic Party represented by Biden advocates raising taxes, allowing free trade, opposing increasing tariffs, increasing investment in education, and compulsory introduction of the “mask order”. On the contrary, the Republican Party represented by Trump supports the continued implementation of substantial tax cuts and trade protectionism, Relax financial supervision and cut education expenditure[2].

2. BASIC ALGORITHM PRINCIPLE

2.1 TIME SERIES PREDICTION ALGORITHM

In the time series, we need to predict the future trend based on the current data of the time series. The Triple Order Exponential Smoothing, Holt-Winters algorithm predicts the time series that contains both trend and seasonality.

Triple exponential smoothing retains seasonal information on the basis of quadratic exponential smoothing, making it possible to predict time series with seasonality. Three exponential smoothing adds a new parameter p to indicate the smoothed trend. The forecast formula for quadratic exponential smoothing is,where, s_i represents smoothed value of the previous i data:

$$x_{h+i} = s_i + ht_i \tag{1}$$

The prediction result of quadratic exponential smoothing is a diagonal straight line.

There are two methods of three times exponential smoothing: accumulation and accumulation.

Here we mainly adopt three times exponential smoothing:

$$S_i = \alpha(x_i + p_{i-k} + (1-\alpha)(s_{i-1} + t_{i-1})) \tag{2}$$

$$t_i = \beta(s_i - s_{i-1}) + (1-\beta)t_{i-1} \tag{3}$$

$$P_i = Y(x_i - s_i) + (1-Y)P_{i-k} \tag{4}$$

The predictive formula for multiplying three times exponential smoothing is:

$$x_{i+h} = (S_i + h_{t_i})P_{i-k} + (h \quad mod \quad k) \tag{5}$$

2.2 RANDOM FOREST ALGORITHM

Random forest is an integration method specially designed for decision tree classifiers. It is an extension of the bagging method. The decision tree selects an optimal attribute from all attributes as the branch attribute each time, while random forest selects an optimal attribute from all attributes each time. Extract F attributes from, and then select an optimal attribute from these F attributes as the branch attribute, which makes the whole model more random and generalized[3].

3. AMRICAN ECONOMIC FORECASTING MODEL

3.1 ECONOMIC QUANTITATIVE INDEX SCREENING

Due to the political positions of the candidates of the two parties in different fields such as finance and trade, economic and financial governance, medical care, education, etc. in order to make the results more comprehensively representative of the economic situation, the data collected firstly selected the GDP, unemployment rate, Exchange rate, national bond yield, CPI and PPI, through Pearson correlation coefficient test to test the correlation of the six groups of indicators, the results as shown in Table 1 below:

Table 1 Pearson Correlation Test

Pearson	GDP	Unemployment	Exchange Rate	National Bond	CPI	PPI
GDP	1					
Unemployment	0.6079	1				
Exchange Rate	0.7178	0.2808	1			
National Bond	0.1049	0.2149	0.1397	1		
CPI	0.9253	0.6567	0.6425	0.2417	1	
PPI	0.2184	0.3730	0.1161	0.3526	0.0966	1

It is not difficult to see from the table that there is a strong correlation between GDP and CPI, unemployment rate, and exchange rate. In order to reduce the impact of the cross factor formed on the accuracy of the model due to the linkage between the economic substitution indicators themselves, the economic substitution The indicators are screened, and GDP, Treasury bond yield and PPI are finally selected as indicators to reflect economic conditions.

Take GDP, national debt, and PPI as the final economic quantitative indicators to reflect economic conditions.

3.2 SELECTION OF ECONOMIC FACTORS

The factors that influence the selection of quantitative economic indicators from economic and trade, financial and trade management, medical care, epidemics and other fields may have different changes due to the candidate's policy, As shown in Figure1 below.

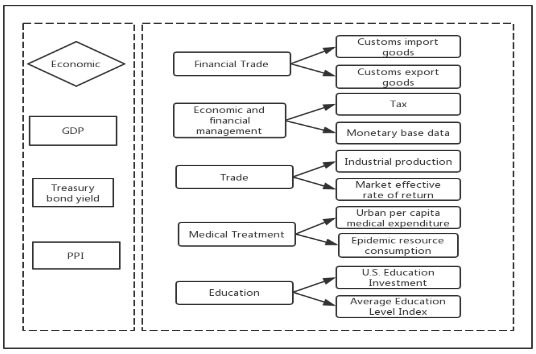
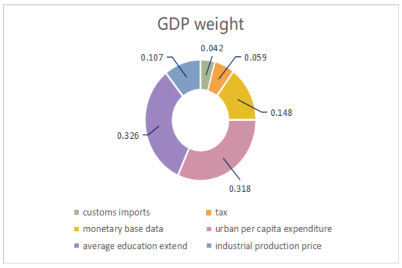
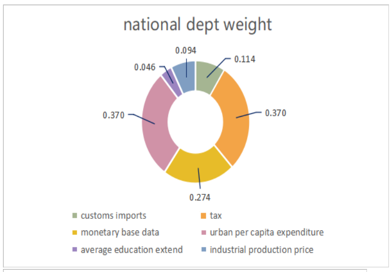


Figure 1 Different influencing factors in different fields

Step 1. Based on the time series forecast of the economic data in different fields during the Trump administration and the Democratic presidential administration, we can get the forecast of the future impact of Trump and Biden's political views on the US economy, As shown in Figure2 below.





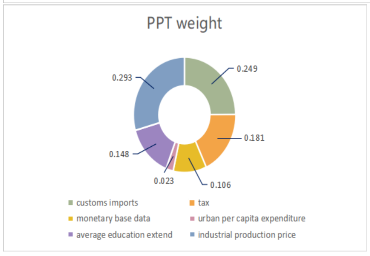


Figure 2 The impact of various factors on the US economy

Can be found from it :

(1)In terms of national GDP, the average national expenditure on education accounts for a relatively large percentage of urban per capital medical expenditure, while imports of goods account for a relatively small percentage.

(2)In terms of Nation Dept Weight , Taxation, urban per capital medical expenditure, basic monetary data account for a relatively large proportion, while average education expenditure ac- counts for a relatively small proportion

(3)In terms of PPI, Industrial output value, customs imports, and taxes account for a relatively large proportion, while the average medical expenditure of urban residents accounts for a small proportion

Step 2. Based on the analysis of the economic factors affecting the United States in recent years, predict the economic impact of Trump and Biden's policies on the United States in the next three years in various fields.

First use Trump's forecast data and use the decision tree model to calculate the influence weights of various factors in various fields, As shown in Figure3 below.

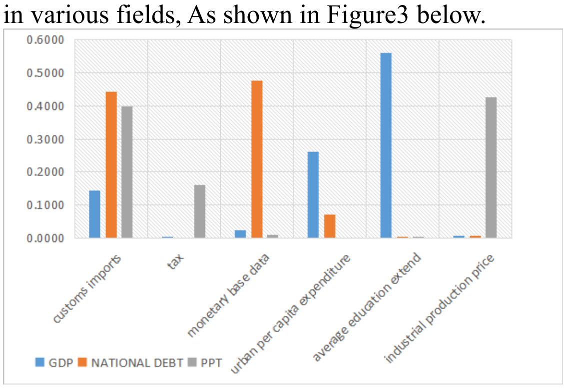


Figure 3 Trump-Decision tree

If you continue to implement Trump's policies, it will have different effects on GDP, national debt, and PPL. It is not difficult to see that a single decision tree is less sensitive to data and difficult to achieve the expected results.

So we optimized the single decision tree model and performed random forest method integration.As shown in Table 2 below.

Table 2 Trump-Random forest

	GDP	National Debt	PPL
Customs imports	0.0423	0.1136	0.2494
Tex	0.0585	0.1018	0.1807
Monetary Base Data	0.1481	0.3702	0.1057
Urban per Capita Expenditure	0.3178	0.2738	0.0230
Average Education Extend	0.3260	0.0465	0.1478
Industrial Production Price	0.1071	0.0942	0.2934

Using the random forest model, that is, integrating multiple decision trees for integrated learning, will get better results. Therefore, the following estimates can be made on the impact of Trump's policy on the U.S. economy:

(1)In terms of GDP, Trump's impact is mainly reflected in taxation and medical expenditures compared to the previous one. This is mainly due to Trump's change of the mask policy, demanding accelerated vaccine research and implementation of tax reduction policies, which are in line with objective facts.

(2)With regard to national debt, Trump's influence is mainly reflected in the monetary base data compared to the previous one. This is because Trump advocates that with limited fiscal stimulus, he tends to continue to pressure the Fed to further loosen monetary policy.

The results of using the random forest model to evaluate Biden's impact are as shown in Table 3 below.

Table 3 Biden-Random forest

	GDP	National Debt	PPL
Customs imports	0.0133	0.0734	0.0723
Tex	0.4383	0.0961	0.1783
Monetary Base Data	0.1807	0.2778	0.2135
Urban per Capita Expenditure	0.1136	0.1647	0.3725
Average Education Extend	0.1939	0.0274	0.0676
Industrial Production Price	0.0602	0.3605	0.0957

Step 3. Calculate the economic impact function of various influencing factors in the past ten years in Step 1.

$$\vec{W}_0 = [0.405, 0.514, 0.528, 0.711, 0.52, 0.494]$$

namely,

$$W_0 = 0.405x_1 + 0.514x_2 + 0.528x_3 + 0.711x_4 + 0.520x_5 + 0.494x_6 \quad (6)$$

The corresponding situation under Trump and Biden policies is:

$$\vec{W}_1 = [0.450, 0.341, 0.624, 0.615, 0.520, 0.494]$$

$$\vec{W}_2 = [0.160, 0.713, 0.672, 0.221, 0.289, 0.516]$$

The corresponding degree of influence under Trump and Biden policies can be expressed as:

$$\Delta E_n = (\vec{W}_n - \vec{W}_0)\vec{W}_0 \quad (7)$$

4. CHINA ECONOMIC FORECASTING MODEL

4.1 ECONOMIC QUANTITATIVE INDEX SCREENING

Since the United States and China are the two major economic systems in the world, the indicators that reflect the economy are similar and consistent. In question 1, the Pearson correlation coefficient has been used to filter out indicators that can better reflect the US economy: GDP, national debt and PPI. In the second question, these three indicators are still used as indicators to reflect China's economic situation.

4.2 SELECTION OF ECONOMIC FACTORS

a. Candidates'China Policy's Impact on China's Exports

China is a big manufacturing country. In recent years, the quantity and types of China's exports to the United States have been on the rise. The tariffs imposed by the United States have reduced China's exports to the United States. From the impact of the weight of import and export trade indicators in question 1 on GDP, we can see that reducing import and export trade will affect the growth of GDP, As shown in Figure4 below.

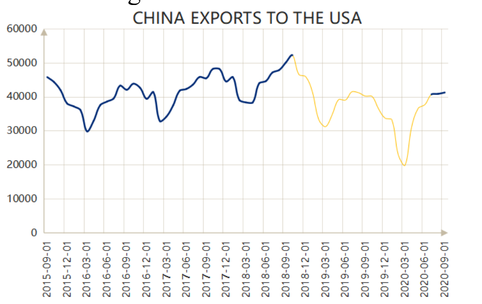


Figure 4 China Imports to the US

b. Candidate's China policy affects foreign trade in different regions of China

The US candidate's China policy is only an indirect factor that affects China's economic development, and its China policy only unilaterally affects the development of a certain field and region in China. Querying the foreign trade data of various provinces and cities in China revealed that Trump's launch of the Sino-US trade war has different effects on different regions. As shown in the figure below, the amount of foreign investment in a prosperous first-tier city like Shanghai is relatively open to the outside world, and the amount of foreign investment will fluctuate greatly with policy changes, while the number of foreign companies in a city like Xi'an that is not very open in the mainland has not changed significantly, As shown in Figure5 below.

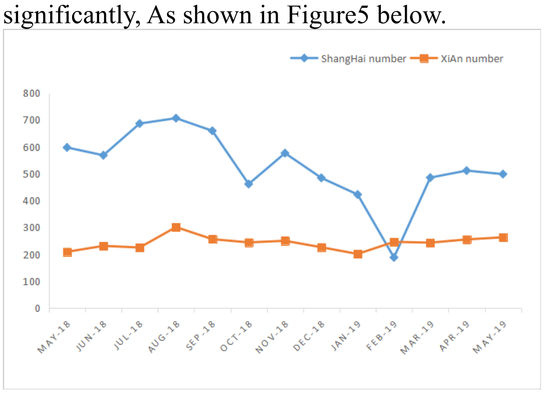


Figure 5 Number of American companies

c. Candidates'different strategies regarding the epidemic

The world is currently in the epidemic stage, so sudden factors and epidemic factors cannot be ignored. Trump has adopted an attitude of slowing down the speed of virus detection and has long opposed wearing masks for the epidemic;while Biden has accelerated the speed of virus detection. Put forward the view of mandatory "mask order". Two different anti-epidemic attitudes will have different effects on China's economy. Due to the particularity of the new crown virus, Biden's policy will effectively suppress the new crown virus, shorten the duration of the epidemic and reduce the severity of the epidemic;Trump's policy will condone the spread of the new crown virus, increase the duration of the epidemic, and increase the severity of the epidemic Sex.

4.3 TIME SERIES MODEL ESTABLISHMENT

Since the candidate's policy is to be implemented in the future, it is necessary to use relevant indicator data in the future Chinese economy for analysis, so the time series model is used to predict future Chinese data based on data from previous years.

Because Obama, as the previous president of the Republican Party, has similarities with Biden's policies;Trump, as the previous president, if he is re-elected, he will continue the basic ideas of his own policies. Therefore, use China's economic data during the Obama administration to predict China's economic data under the Biden policy;use China's economic data during the previous Trump administration to predict China's economic data under the Trump policy.

Step1. The selection of factors affecting China's economy First of all, it is necessary to select policies that can affect China's economy from the candidate's policies, namely the China policy and the epidemic policy. Next, in two areas, select factors that may affect China's economy. In terms of policy on China, select four indicators: volume of imported and exported goods, technology, tariffs, and international freight;in terms of policy on the epidemic, select US students studying in China and international passenger transport , Three indicators of tourism.

Step2. Use random forest to find the influence weight of selected factors on China's economy during the previous presidents'administration.

Step3. Imitate problem two to find economic weight function:

$$W_0=0.321z_1+0.086z_2+0.288z_3+0.063z_4+0.061z_5+0.025z_6+0.156z_7 \quad (8)$$

The corresponding situation under Trump and Biden policies is:

$$\vec{W_1}=[0.413,0.108,0.247,0.038,0.056,0.34,0.106]$$

$$\vec{W_2}=[0.321,0.086,0.288,0.063,0.061,0.025,0.156]$$

The corresponding degree of influence under Trump and Biden policies can be expressed as:

$$\Delta E_n=(\vec{W_n}-\vec{W_0})\vec{W_0} \quad (9)$$

5. RESULTS AND DISCUSSION

5.1 MODEL'S RESULTS

(1)In China's economic forecasting model,the result is ΔE_1=-0.0883 , $\Delta E_2=-0.4023$,therefore, Biden will have a greater impact on the future economy of the United States.

(2)In American economic forecasting model,the result is ΔE_1=-0.3894 , $\Delta E_2=-0.3728$,explain that both candidates have an impact on the Chinese economy, but the difference is not significant.

5.2 SUGGESTIONS ON CHINA'S CONTERMEASURES

(1)According to incomplete statistics, the vaccine market sales increased from 7.1 billion US dollars to more than 20 billion US dollars from 2004 to 2009. In 2017, the vaccine market value continued to grow to 27.7 billion US dollars[4].

(2)Tariffs are mainly divided into three categories: ad valorem tariffs, specific tariffs, and compound tariffs. Ad valorem tariff is based on the price of imported and exported goods as the standard. Specific tariff is based on the quantity, weight, capacity, length and area of the goods. The basic calculation formula for the mixed specific tariff is as follow,where, W represents payable, c represents quantity of taxable imported goods, t represents tariff unit tax, p represents unit duty-paid price, t_λ represents applicable tax rate:

$$W=\mathrm{c}\times\mathrm{t}+\mathrm{c}\times\mathrm{p}\times\mathrm{t}_\lambda \quad (10)$$

If the minimum value of tax payment expectation c is obtained, the smaller t is, the better. However, considering that the quantity of Chinese exported goods is positively correlated with GDP growth, the value of t must be reduced to maximize profits. The Sino-US trade war has increased the value of t. The coefficient of analysis is t, and the applicable tax rate is the tax rate determined according to the enterprise industry or the scope of collection as stipulated by the tax law.

It can be seen from the formula that the constraints of W are the tax amount of the tariff unit, the applicable tax rate, and the quantity of taxable imported goods. Most Chinese exports should consider the tax as small as possible, so the objective function is obtained:

$$min\sum_{p=0} W=c\times t+c\times p\times t_\lambda \quad (11)$$

(3)If the minimum value of tax payment expectation c is obtained, the smaller t is, the better. However, considering that the quantity of Chinese exported goods is positively correlated with GDP growth, the value of t must be reduced to maximize profits. The Sino-US trade war has increased the value of t. The coefficient of analysis is t, and the applicable tax rate is the tax rate determined according to the enterprise industry or the scope of collection as stipulated by the tax law.

Different goods have different import tax rates, and the tax rate corresponding to a specific product is its applicable tax rate. Judging from the extent of the US sanctions, industries such as steel, chemicals, metal products, paper products, textiles and garments have been hit hard.

5.3 ERROR ANALYSIS

According to the different values of various factors during Obama's tenure, a time series is used to form a fitting function of different coefficients, and the predicted value of each limiting factor after Biden takes office is obtained.

The predicted value will be in error with the true value, As shown in Figure 6 below.

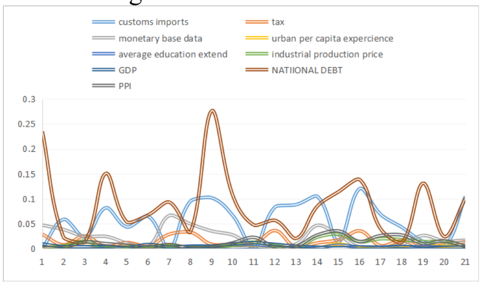


Figure 6 Biden prediction error

5.4 ADVANTAGES AND DISADTANTAGES OF MODEL

(1)Use the random forest model to get the weight of each factor, which can effectively process1 high-dimensional data and calculate the weight of features. And unbiased estimation is used for generilization error, and the generalization ability of the model is strong.

(2)The training speed is fast and it is easy to make a parallel method. In the training process, the mutual influence between various influencing factors can be additionally measured.

(3)Economic development generally does not change by leaps and bounds. Economic-related influencing factors are a gradual process. Therefore, the time series model is used to predict future data, and the data of previous presidents under the same policy is used to predict candidate data. effect.

(4)Considering various influencing factors and replacing economic levels with multiple indicators, making the model analysis more comprehensive and accurate.

(5)The use of time series for forecasting data is based on historical data forecasts and an extension of the actual situation, without considering future emergencies and external factors.

5.5 MODEL IMPROVEMENT AND PROMOTION

(1)Some algorithms, such as support vector machines and BP neural networks, can be used for training to obtain weights and perform algorithm integration to eliminate the influence and deviation of the results caused by the deficiencies of a single algorithm.

(2)This model can introduce the regular term function to know the complexity of random forest, and then integrate multiple random forests by gradient boosting method to effectively avoid overfitting.

(3)Because this model has the effect of accurate prediction, it can be applied to the economic analysis of future presidential policies to help people vote and analyze the future economic situation and more other fields with experts from other countries.

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Solving Shared-vehicle Scheduling Problem Based on Optimal Tree

Ziyue Wang[1], Xuanyang Lin[2], Yiyang Zhao[1]*
[1]School of Yisheng college, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Materials Science and Engineering, North China University of Science and Technology, Tangshan 063210, China
[*]Corresponding Author.

Abstract: Due to the uneven distribution of urban residents' travel needs, some network vehicles use very low and in other outlets in short supply, so in order to adjust the balance of vehicles between outlets, improve the user experience, improve the utilization rate of shared vehicles, it is necessary to use manual scheduling to rebalance vehicles between different outlets. This paper mainly through the big data in-depth analysis, think that there is a more reasonable vehicle scheduling mode to improve the uneven distribution of vehicles. First, we selected the location data set of the shared car, and then the sample data was processed and analyzed statistically. Based on the matplotlib function in python, a concept diagram of the distribution of shared cars at different times in the same space is drawn. Then the abstraction of the graph according to the concept map is transformed into a mathematical dot plot. Based on lingo's optimal tree model, the advantages and disadvantages of single and double starting points are compared, and the order and number of vehicle dispatches are determined. Finally, through AHP to test the feasibility of the optimal route, so as to help the shared car companies to make the most favorable car scheduling scheme.
Keywords: lingo Optimal Tree Model; Analytic hierarchy process; Shared car; matplotlib

1.INTRODUCTION

Since 2015, the car-sharing industry was once “Blossoming”, with a number of projects receiving huge financing. But because the model is too heavy, operating costs are too high, unprofitable, and other problems, a succession of car-sharing companies because of the capital chain fracture and collapse. At present, the main objective problem that car-sharing enterprises face is high operating cost and difficult to make profit. On the one hand, most of the shared cars are new energy vehicles, and the construction of the related network and infrastructure in the field of new energy vehicles is not perfect. On the other hand, the car-sharing industry is essentially a car rental industry, and this industry has obvious heavy assets, heavy operation, heavy management attributes, enterprises need to invest a lot of funds in the operation, and the car-sharing field has the characteristics of long-term investment, which leads to the company’s short-term profitability difficulties, if enterprises can not effectively control costs, improve operating efficiency, explore a reasonable profit model, will not be able to survive in the long-term competition.

By the end of 2008, there were 122 car-sharing apps in China, such as 1-degree car, car, road width, Gofun, etc.. From the point of view of vehicle type, most of the shared cars in China are electric vehicles. From the point of view of network settings, the main distribution area of shared cars is the central city, more than 80% of the network are in hotels, tourist attractions and other densely populated areas. According to the 2019 White Paper on China’s car-sharing platform innovation released by analysys, the car-sharing industry in 2019 has been a year in which small and medium-sized participants have been continuously eliminated and the head platform has been driving the industry to restart growth. And car-sharing growth in may-october 2019 reached 2.21%, more than online car and online car rental.

In the old days, the car was bought as a “Big deal”. Now, because of the dizzying speed of the iterations and the impact of the epidemic, the decision-making process will be longer. Consumers have a desire to use cars, a desire to upgrade, but they’re getting smarter, and they want to know if there are lighter, better ways to use cars. The “TIME-SHARE”model of car-sharing solves this problem in many ways. But the cost control link of this kind of way is excessive, bring about profit very difficult. Because of the uneven space-time distribution of urban residents’travel demand, the utilization of vehicles in some outlets is often very low, which results in a great waste of vehicle resources, while in other outlets the supply of vehicles exceeds the demand, which results in the users’demand can not be met to the maximum to reduce the user experience. This is the main problem that needs to be solved in the operation and management of the automobile sharing and leasing industry. Summary: the development of car-sharing companies is affected by many factors, except the uncertain factors of epidemic situation and the high mobility of car users, the main factors that the company can control are adjusting the balance of vehicles between nodes, improving the user experience, and increasing the utilization rate of car-sharing.

2. MODEL BUILDING

2.1 DATA PROCESSING

The location data set of the shared car is given based on the location data of the shared car during the period from December 2018 to January 2019. The data set provides the location information such as time, latitude and longitude, as well as the number of cars parked at the parking point and the list of cars, it is necessary to analyze the distribution of shared car use in the city. The number of cars parked in each location varies from time to time, we randomly selected 100000 pieces of data over a period of one month and visualized the data in excel. The data is processed by python, the string character is converted to float character, and the NAN value is deleted. The shared car parking diagram is obtained by the Matplotlib function [1].

According to the distribution of car-sharing in the city, we make a car-sharing schedule. First of all, we can deduce the dense parking points and the points with more people by sharing the parking map, and get the distance and time of each starting point and ending point by using the optimal tree model of Lingo [2], this paper compares the advantages and disadvantages of single starting point and double starting point, determines the vehicle scheduling order and quantity, deduces the optimal route, finally uses the analytic hierarchy process to carry on the verification to it, obtains the final scheduling scheme, in order to ensure the minimum error, as shown in Figure 1.

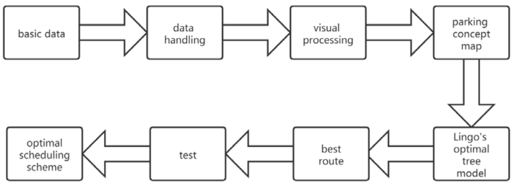

Figure 1. The mind map

3. ESTABLISHMENT AND SOLUTION OF THE MODEL

3.1 Solving Problem 1 based on Matplotlib function:

Firstly, the data given in the sample data are processed by python software. In order to reduce the influence of Nan value on the parking concept map, NAN value is deleted, as shown in Figure 2.

timestamp	latitude	longitude	total_cars
2019-01-10 12:58:50.134717 UTC	32.066956	34.793493	0
2019-01-10 12:58:50.134717 UTC	32.093871	34.785879	0
2019-01-10 12:58:50.134717 UTC	32.092350	34.790590	1
2019-01-10 12:58:50.134717 UTC	32.118390	34.787400	1
2019-01-10 12:58:50.134717 UTC	32.121400	34.796240	1
...	...	...	...
2018-12-11 15:48:53.592141 UTC	32.069390	34.796330	1
2018-12-11 15:48:53.592141 UTC	32.096792	34.797362	1
2018-12-11 15:48:53.592141 UTC	32.058374	34.775729	1
2018-12-11 15:48:53.592141 UTC	32.057609	34.764300	0
2018-12-11 15:48:53.592141 UTC	32.116455	34.787799	0

Figure 2. parking concept map value

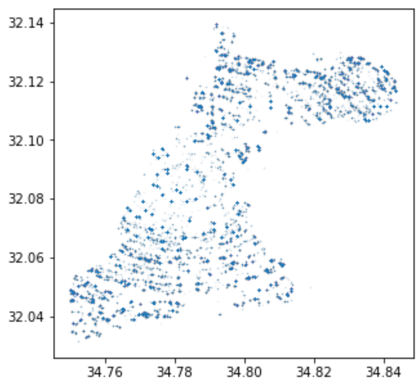

Figure 3. parking concept map

Then the processed data is used to visualize the image through the Matplotlib function to get the parking map, as shown in Figure 3.

3.2 LINGO OPTIMAL TREE

Let an undirected graph have n nodes, the Adjacency Matrix of the weighted graph is dn × N, and Dij represents the distance from node I to J. D is a symmetric matrix. DII = 0. The optimal tree generated from the root node x to each node requires the minimum weights.

ITS LINEAR PROGRAMMING MODEL is:

$$x_{ij} = \begin{cases} 1(Node\ I\ is\ connected\ to\ node\ j) \\ 0(Node\ I\ is\ not\ connected\ to\ node\ j) \end{cases}$$

The objective function is to find an optimal tree from the starting point 1 to each node, which requires the minimum sum of weights on each line:

$$\min Z = \sum_{i=1}^{n}\sum_{j=1}^{n} d_{ij} \cdot x_{ij}$$

there is at least one way out of starting point X, so:

$$\sum_{j=2}^{n} x_{ij} \geq 1$$

for the rest of the nodes, there is exactly one way in, so:

$$\sum_{\substack{k=1 \\ k \neq i}}^{n} x_{ki} = 1$$

no circles on all nodes, constrained to:

$$u_i - u_j + n * x_y \leq n-1$$

The linear programming model is:

$$s.t. \begin{cases} \sum_{j=2}^{n} x_{1j} \geq 1 \\ \sum_{\substack{k=1 \\ k \neq i}}^{n} x_{ki} = 1 \\ u_i - u_j + n\, x_{ij} \leq n-1 \\ x_{ij} = 0,1 \end{cases}$$

We deal with the visualized concept map of the shared car distribution, determine the distance between parking points, then complete lingo's optimal tree solution, and then complete a set of effective vehicle scheduling program, the result is shown in Table 1.

From this we can work out the distance between the points, as shown in Figure 4.

Therefore, it is necessary to discuss the use of single starting point or double starting point for the analysis of two dispatching vehicles from 7, 9, 10 starting points and 3, 4, 5, 6 starting points. The same destination is one point, now do the following discussion:

concept map of the lower part of the vehicle scheduling:

Route 7-9-1 10-1, as shown in Figure 5.

Route 7-10-1 9-1, as shown in Figure 6.

Route 9-10-17-1, as shown in Figure 7.

Table 1. Effective vehicle scheduling program

	1	2	3	4	5	6	7	8	9	10
1	0	53.25	110.08	142.24	150.9	172.16	119.54	70.78	112.13	77.08
2	53.25	0	74.02	91.11	97.79	120.2	169.78	117.52	151.68	90.04
3	110.08	74.02	0	59.67	83.21	86.92	228.17	180.85	220.83	164.04
4	142.24	91.11	59.67	0	25.73	30.6	260.73	208.62	241.01	170.7
5	150.9	97.79	83.21	25.73	0	29.24	266.46	213.24	241.62	167.19
6	172.16	120.2	86.92	30.6	29.24	0	289.97	237.34	267.97	194.68
7	119.54	169.78	228.17	260.73	266.46	289.97	0	53.99	55.10	121.36
8	70.78	117.52	180.85	208.62	213.24	237.34	153.99	0	45.87	72.29
9	112.13	151.68	220.83	241.01	241.62	267.97	55.10	45.87	0	29.44
10	77.08	90.04	164.04	170.7	167.19	194.68	121.36	72.29	79.44	0

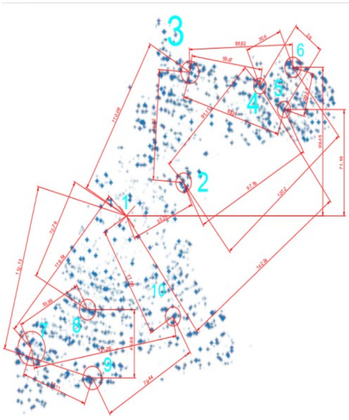

Figure 4.Every points

Figure 5. Route 7-9-1 10-1

Figure 6. Route 7-10-1 9-1

Figure 7. Route 9-10-1 7-1.

$$\begin{cases} S_{7-9-1} = S_{7-9} + S_{9-1} = 55.11 + 112.13 = 167.24 \\ S_{10-1} = 77.98 \\ S_{total} = 245.22 \end{cases}$$

$$\begin{cases} S_{7-10-1} = S_{7-10} + S_{10-1} = 121.36 + 77.98 \\ S_{9-1} = 112.13 \\ S_{total} = 311.47 \end{cases}$$

$$\begin{cases} S_{9-10-1} = S_{9-10} + S_{10-1} = 79.44 + 77.98 = 157.42 \\ S_{7-1} = 119.54 \\ S_{total} = 276.96 \end{cases}$$

concept map upper part of vehicle scheduling:

Single start:

easily accessible from data: Route 6-5-4-3-2-1, as shown in Figure 8.

Double start: easily accessible from data: Paths 6-5-4-2-1 and 3-1, as shown in Figure 9.

Figure 8. Route 6-5-4-3-2-1

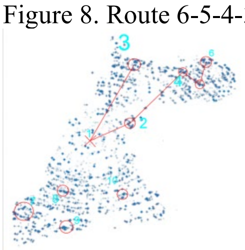

Figure 9. Paths 6-5-4-2-1 and 3-1

$$S_{6-5-4-3-2-1} = 29.24 + 25.78 + 59.67 + 74.02 + 53.25 = 241.96$$

$$\begin{cases} S_{6-5-4-3-2-1} = 29.24 + 25.78 + 91.11 + 53.25 = 119.38 \\ S_{3-1} = 110.08 \end{cases}$$

$S_{total} = 110.08 + 199.38 = 309.46$

Compared with the other two schemes, 2 has the longest total distance and the longest arrival time, and 1 has the shortest total distance and the lowest fuel consumption cost, although the arrival time is slightly longer than 3, the 10-1 route will be the first to arrive, the profit can make up for the 9-10-1 route in 3 takes slightly less time than 7-9-1 route in. Therefore, the second half of the selection of dual-start Scheduling Route 7-9-1 and 10-1 at the same time. Compared with the single starting point, the double starting point has the longest total distance but the shortest time. Considering the large size of the first half, the long distance, and more special situations in reality, the double-start scheduling method is chosen. The following is a feasibility test to verify the rationality of the two-start scheduling scheme under normal conditions. Model checking we use analytic hierarchy process (AHP) to check the feasibility of the above model. 1. Analytic hierarchy process analytic hierarchy process based on the nature of the problem and the overall goal to be achieved, the problem will be divided into different components, and in accordance with the inter-related impact of factors as well as the subordinate relationship of factors in accordance with different levels of aggregation and combination, a multi-level analysis structure model is formed, so that the problem can be reduced to the determination of the relative important weights or the order of relative advantages and disadvantages of the lowest level (scheme, measure, etc..) The main step is to establish a hierarchy model, which divides the goal, the factors (decision criteria) and the decision object into the highest, the middle and the lowest levels according to the relationship between them. The top level refers to the purpose of the decision, the problem to be solved. The lowest level refers to the alternatives for decision-making. The middle layer refers to the factors considered, the criteria for decision-making. For the adjacent two layers, called the target layer for the high-level, low-level factors. The construction of judgement (paired comparison) matrices when determining the weights among the factors at various levels, if it is only a qualitative result, it is often not accepted by others, which led Saaty et Al. to propose the consistent matrix method, in order to reduce the difficulty of comparing the different factors as much as possible and to improve the accuracy, the relative scale is adopted. For example, for a 1 criterion, two-to-two comparisons of the alternatives are made, and the importance of each alternative is rated. A_{ij} is the result of comparing the importance of factor I with that of factor J. The Matrix formed by two-to-two comparisons is called the judgment Matrix. The Judgment Matrix has the following properties, as shown in Table 2.

$$a_{ij} = \frac{1}{a_{ji}}$$

Table 2.The result of comparing the importance of factor I with that of factor J.

Factor I is higher than factor J	Quantized value
Is just as important	1
A little bit	3
Stronger is more important	5
Strongly important	7
Extremely important	9
Intermediate value of two adjacent judgments	2, 4, 6, 8

3.3 HIERARCHICAL SINGLE RANKING AND ITS CONSISTENCY CHECKING

The eigenvector corresponding to the maximal eigenroot λx of the judgment Matrix is reduced to w by 1(the sum of the elements in the vector equals 1). The element of w is the ranking weight of the relative importance of the factor of the same level to the factor of the upper level. This process is called single ranking. The consistency test is to determine the allowable range of inconsistency for A. Where the unique 1-nonzero characteristic root of n-order uniform matrix is N, and the largest characteristic root of n-order reciprocal matrix a is a uniform matrix if and only if. Because λ continuously depends on aij, the larger the λ is than N, the more serious the inconsistency of a, the smaller the CI, the greater the consistency. Using the EIGENVECTOR corresponding to the largest eigenvalue as the weight vector of the influence degree of the compared factor on the upper factor, the greater the degree of inconsistency, the greater the judgment error. The inconsistency of a can therefore be measured by the magnitude of the λ-n value. Consistency indicators are defined as:

$$\mathrm{CI} = \frac{\lambda - n}{n-1}$$

CI = 0, with Complete Consistency; Ci Close To 0, with satisfactory consistency; the larger the CI, the greater the inconsistency. For the size of the quantity CI, the Random Consistency Index Ri:

$$RI = \frac{CI_1 + CI_2 + ... + CI_n}{n}$$

In general, the larger the order of the Matrix, the greater the probability of the occurrence of the consistent random deviation. Considering that the deviation of consistency may be caused by random factors, when checking whether the judgment Matrix has satisfactory consistency, the CI and the Random Consistency Index Ri should be compared to get the test coefficient CR, the formula is as follows:

$$CR = \frac{CI}{RI}$$

Generally, if CR & Lt; 0.1, the Judgment Matrix is considered to pass the consistency test, otherwise it will not have satisfactory consistency.

3.4 HIERARCHICAL RANKING AND ITS CONSISTENCY CHECKING

Calculating the relative importance of all factors in a hierarchy to the highest level is called hierarchical ranking. This process is from the highest level to the lowest level in turn.

4. MODEL CHECKING

We test the feasibility of the 1-6 route partial single/double starting point model in concept map to verify the rationality of the double starting point scheme. In this model, we define the lowest cost as the target layer, choose time cost, total distance (fuel consumption) and manpower cost as the criterion layer, single starting point and double starting point as the scheme layer. On weight allocation: In practice, the vehicle scheduling cycle is longer, and the company is facing more and more intelligent consumers, who are seeking better ways to use the vehicle, therefore, strict punctuality has become one of the important labels that embody the spirit of corporate contract and responsible attitude towards consumers, so we give the highest weight to Time cost-strong Important 8; For the process of dispatching motor vehicles itself, there are strict regulations and requirements, and there are also very high physical and psychological requirements for dispatching workers, although they are only a very small part of the whole dispatching work, in order to ensure the completion of the final link, it is worth paying a higher cost. Therefore, we define the human cost as between stronger and stronger importance, with active and effective government support and subsidies, companies can define journey costs as slightly more important.

5.1 LIST THE MATRIX FOR VALIDATION:

List the matrix for validation, as shown in Table 3.

Table 3. Costs table

	Time cost	Distance cost	Manpower cost	
Time cost	1.000	4.000	1.333	Time cost
Distance cost	0.250	1.000	0.333	Distance cost
Manpower cost	0.750	3.000	1.000	Manpower cost

So you plug in the equation, you integrate it into the data:

$w(\text{Criterion layer vector}) = CI = -0.0021$

0.1580

0.6321

0.2098

t(Maximum characteristic root of criterion layer) = 2.9958

The consistency of this matrix allows the following substitution operation based on weight assignment:

$$\text{Single starting point cost} = 241.96 \times 0.5 + 242.96 \times 0.125 + 20 \times 0.375 = 158.725$$

$$\text{Double starting point cost} = 199.38 \times 0.5 + 309.46 \times 0.125 + 40 \times 0.375 = 153.3725$$

The results show that the two-starting point is the optimal solution and the final result is obtained.

5. MODEL EVALUATION

In this paper, we use the Matplotlib function to set up the distribution map of the shared car, use the analytic hierarchy process (AHP) and the optimal tree to consider various factors, and design the corresponding algorithm. Finally, we apply the model to the problem solving, therefore, the model evaluation is as follows: Advantages: 1. The analytic hierarchy process is used to treat the cost as a system, which does not cut off the influence of each factor on the result, and the weight setting of each layer affects the result directly or indirectly, and the impact of each factor at each level on the outcome is quantifiable, very clear, clear. The elements in the optimal tree can be visualized, and it is easy to understand and explain the disadvantages: Using analytic hierarchy process (AHP), too many indexes, too much data statistics, difficult to determine the weight, less quantitative data, more qualitative components, the results are not convincing

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Dynamic Prediction Model of Molten Steel Carbon Temperature Based on Multiple Linear Regression

Yi Zechuan[1,2*], He Hangyu[2,3], Zhang Haiting[2,4]
[1]School of Metallurgy and Energy, North China University of Science and Technology, Tangshan 063210, China;
[2]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[3]Artificial Intelligence Academy, North China University of Science and Technology, Tangshan 063210, China;
[4]Faculty of Science, North China University of Science and Technology, Tangshan 063210, China
[*]Corresponding Author.

Abstract: With the steady and rapid development of my country's green and sustainable national economy, the small and medium-sized converters in the steelmaking market are facing the coupling pressure of "de-capacity, green manufacturing and market competition". It is urgent to break through the technical bottleneck of steelmaking and develop smart converters for small and medium-sized converters. A new way of steelmaking. In order to explore and analyze the oxygen consumption ratio in the sample data of the steel plant-PQ, the total oxygen consumption-Q, the CO content in the flue gas-[CO], the CO2 content in the flue gas-[CO2], the carbon content in the molten steel [C] And the molten steel temperature value [T] and other specified parameters, based on the data sample set that can be collected by the existing flue gas analysis system, first use the Z-score standardized method to eliminate the dimensions of the data to ensure the amount of data The program was unified, and the data was analyzed using VIF multicollinearity test and Pearson correlation coefficient test, and the conclusions were found to be contradictory. In order to determine the method of model building, Ridge regression was introduced to analyze and process the data again, and it was judged that the model method suitable for data processing was multiple linear regression based on the least square method. Therefore, a simple multiple linear regression was used to establish a forecast model for [C]&[T], and the data was observed through visual graphics to predict the fitting effect. Finally, it was found that the effect of the forecast model was good, and a related mathematical model was established to solve the problem of obtaining high-quality carbon temperature. Dynamic forecasting model.

Keywords: Predictive model; multiple linear regression; Ridge regression

1 THE INTRODUCTION

With the sustained, stable and rapid development of my country's national economy, various related industries have a strong demand for steel. Converter steel occupies an absolute dominant position in my country's steelmaking output. In recent years, my country's converter steel production and technological progress have made great progress. However, compared with foreign steel powers, my country's converter steelmaking overall level is lagging behind. Except for some large-scale converters of a few companies that adopt dynamic control, most converters are equipped and controlled at a low level. Many converter steel plants, especially small and medium-sized converters, have their daily production relying on " "Temperature measurement and carbon determination" or "rapid analysis of sampling before the furnace" for manual empirical judgment. Improving the control accuracy and hit rate of steelmaking endpoints, and optimizing various smelting indicators are currently urgent problems in my country's converter steelmaking production. In particular, small and medium-sized converters face the coupling pressure of "de-capacity, green manufacturing and market competition", and urgently need to break through the technical bottleneck of steelmaking and open up a new way of smart steelmaking for small and medium-sized converters.

The dynamic control of converter flue gas analysis is to calculate the instantaneous decarburization rate and decarburization amount of the molten pool by continuously detecting the flue gas components (CO, CO2, N2, O2, Ar, H2) and flue gas flow generated during converter blowing. The distribution ratio of oxygen in C, Si, Mn, P, S and other elements is calculated according to the instantaneous oxygen supply and slag material addition, and then the content of each element in the molten pool and the slag composition are calculated. Some converters in my country use a flue gas analysis system to control the end point of steelmaking, but the system's dynamic prediction accuracy of the carbon content and temperature value of the molten steel depends on the flue installation environment and the synchronization of data information, and the robustness is not high., It is impossible to realize smart steelmaking. In fact, converter flue gas analysis has theoretical support. There are many reasons why the system cannot accurately predict, and it may be over-reliance on existing mechanism models.

The key to realize smart steelmaking in small and medium-sized converters is to accurately hit the steelmaking end point, and the key parameters for the end point hit are the carbon content in the molten steel and the temperature of the molten steel. Therefore, this paper will improve the original static mechanism control model based on this principle, so as to solve the technical problem of intelligent real-time correction and calibration of the static control curve, and finally achieve a high hit rate at the end of steelmaking.

2 EXPERIMENTAL

2.1 Establish a prediction model of [C]&[T] based on smoke composition

It can be seen from the question that it is necessary to analyze and process the data of the five different steel plant data sets given in the question. By exploring the relationship between PQ, Q, [CO], [CO2] and [C]&[T], construct the [C]&[T] prediction model based on smoke composition.

Through observation, it can be seen that there are differences in the dimensions of the data in the steel plant data set, which is not conducive to the subsequent data analysis and processing. To solve this problem, the Z-score standardization method is used to eliminate the dimensions of the data and use the formula

$$x^*=\frac{x-\bar{x}}{\sigma}$$

Where x is the mean of the original data, and σ is the standard deviation of the original data. The following analysis is based on the data after dimension elimination.

2.1.1 Data analysis and processing

To explore the relationship between PQ, Q, [CO], [CO2] and [C]&[T], consider using a simple linear regression model as the forecast model of [C]&[T].

VIF multicollinearity test and Pearson correlation coefficient test were performed on the data to determine whether the data variables meet the requirements of linear regression applications. First, perform VIF multicollinearity detection on the data set of each steel plant, using the formula

$$VIF=\frac{1}{1-R_i^2}$$

Among them, R_i is the negative correlation coefficient of the independent variable to the other independent variables in the regression analysis. The data of the steel mill data set fj_exel_1 is used for detailed analysis. During the analysis process, the system automatically excludes the variable PQ for testing. The specific values are shown in the following table:

Table 1 VIF-[C]

Model	VIF value
Zscore(Q)	6.814
Zscore([CO])	22.825
Zscore([CO2])	18.202

Table 2 VIF-[T]

Model	VIF value
Zscore(Q)	6.814
Zscore([CO])	22.825
Zscore([CO2])	18.202

After consulting the relevant information, we can see that the model has strong multicollinearity when VIF>10. At this time, the data should be eliminated, otherwise the effect of linear regression model construction will be poor. From the above table, it is found that the VIF value of [CO] and [CO2] are both greater than 10, and the VIF value of Q is less than 10. However, because the data is actually measured, deleting the data will have a huge impact on the result, so data cannot be eliminated.

Next, the Pearson correlation coefficient test is performed on the data set of each steel plant, using the formula

$$R=\frac{\sum_{i=1}^{n}(x^*-\bar{x}^*)(y^*-\bar{y}^*)}{\sqrt{\sum_{i=1}^{n}(x^*-\bar{x}^*)^2}\sqrt{\sum_{i=1}^{n}(y^*-\bar{y}^*)^2}}$$

x^*、y^* is the standardized data, $\bar{x}^*$、$\bar{y}^*$ is the average of the standardized data, the same as above, is explained in detail with the data of the steel mill data set fj_exel_1. The specific data is shown in the following table:

Table 3 Pearson correlation coefficient

	(PQ)	(Q)	(CO)	(CO2)	([C])	([T])
(PQ)	1	1	-0.923	0.903	-0.997	1
(Q)	1	1	-0.923	0.903	-0.997	1
(CO)	-0.923	-0.923	1	-0.972	0.900	-0.923
(CO2)	0.903	0.903	-0.972	1	-0.893	0.903
([C])	-0.997	-0.997	0.900	-0.893	1	-0.997
([T])	1	1	-0.923	0.903	-0.997	1

According to the Pearson correlation coefficient given in the table, the four variables PQ, Q, CO and CO2 all have a linear correlation with [C]&[T]. This conclusion is contrary to the conclusion of the VIF multicollinearity test. Directly confirm whether linear regression can be used.

In order to confirm the use of linear regression, the introduction of Ridge regression to observe the learning curve, that is, by using and observing the accuracy curves of Ridge regression and LR linear regression to judge the multiple linear regression of data. The complete expression of the loss function of ridge regression is:

$$\min_{w}\|Xw-y\|_2^{\ 2}+\alpha\|w\|_2^{\ 2}$$

Among them, w is the model parameter, X is the sample data matrix, and α is a constant. If the steel mill data set data set uses various regularization parameters in the ridge regression, the model performance does not increase significantly, it means that the data does not have multicollinearity, or there is some correlation between the features. On the contrary, there is multi-collinearity, as shown in Figure 1, Figure 2.

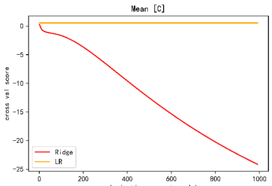


Figure 1 Learning curve-[C]

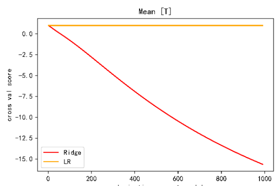


Figure 2 Learning curve-[T]

By analyzing the learning curve of Ridge regression and LR linear regression in the above figure, it is not difficult to find that regardless of the dependent variable is [C] or [T], the effect of Ridge regression is worse than that of LR linear regression, indicating that there is no multicollinearity in the data set, You can use multiple linear regression based on least squares to build a predictive model.

2.1.2 Establish a multiple linear regression model

After the above analysis, a simple multiple linear regression based on the least squares method is selected as the prediction model, that is, two linear regression models are established for the data in each steel plant data set: the dependent variable is [C] and the dependent variable is [T]. The constructed multiple linear regression prediction model is shown in the following table 4:

Table 4 Model fitting prediction scatter plot and model equation

fj_exel_1	[C] Forecast model: $y_1 = -0.5577x_1 - 0.5577x_2 - 0.3301x_3 - 0.2095x_4$ [T] Forecast model: $y_1 = 5.0\times10^{-1}x_1 + 5.0\times10^{-1}x_2 + 7.7716\times10^{-16}x_3 - 1.1102\times10^{-16}x_4$
fj_exel_2	[C] Forecast model: $y_1 = -0.4994x_1 - 0.4994x_2 - 0.0618x_3 - 0.0770x_4$ [T] Forecast model: $y_2 = -0.5000x_1 - 0.5000x_2 - 0.0049x_3 - 0.0061x_4$
fj_exel_3	[C] Forecast model: $y_1 = -0.4915x_1 - 0.4915x_2 - 0.0305x_3 - 0.0068x_4$ [T] Forecast model: $y_2 = 5.0\times10^{-1}x_1 + 5.0\times10^{-1}x_2 - 7.7716\times10^{-16}x_3 - 8.3267\times10^{-16}x_4$
fj_exel_4	[C] Forecast model: $y_1 = -0.5128x_1 - 0.5128x_2 - 0.0249x_3 - 0.0050x_4$ [T] Forecast model: $y_2 = 5.0\times10^{-1}x_1 + 5.0\times10^{-1}x_2 + 7.2164\times10^{-16}x_3 + 5.5511\times10^{-17}x_4$
fj_exel_5	[C] Forecast model: $y_1 = -0.5126x_1 - 0.5126x_2 - 0.0555x_3 - 0.0403x_4$ [T] Forecast model: $y_2 = 5.0\times10^{-1}x_1 + 5.0\times10^{-1}x_2 + 1.6653\times10^{-16}x_3 - 1.2490\times10^{-16}x_4$

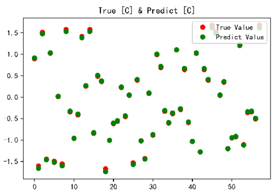


Figure 3 fj_exel_i Model [C] Random error test

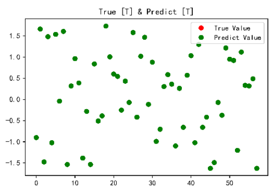


Figure 4 fj_exel_i Model [C] Random error test

2.2 Model simulation error analysis

2.2.1 Model simulation error

According to the requirements in the question, apply the [C]&[T] forecast model obtained by fitting and training the steel mill data set fj_exel_i.xls data to the steel mill data set fj_exel_j.xls sample data. For the convenience of the situation description, the former model is selected and substituted The method in the latter data is studied. The following table shows the error of the simulation of the two models:

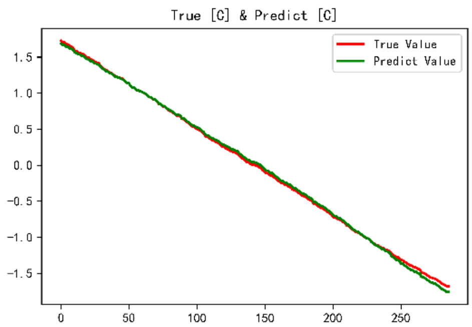


Figure 5 fj_exel_iModel to fj_exel_i+1data [C] Model simulation error

Observing the above table, it can be directly seen that when the steel mill data set fj_exel_i model is substituted into the steel mill data set fj_exel_j data, [C] has a small model simulation error, and [T] almost has no model simulation error. In order to more accurately determine the simulation error of the model, the above model was also tested for goodness of fit and mean square error, using the formula.

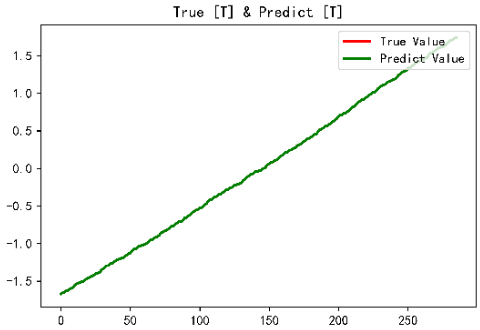


Figure 6 fj_exel_iModel to fj_exel_i+1data [T] Model simulation error

$$R^2 = 1 - \frac{\sum_{i=0}^{n}(y_i - \hat{y_i})^2}{\sum_{i=0}^{n}(y_i - \bar{y})^2} = 1 - \frac{\mathrm{RSS}}{\sum_{i=0}^{n}(y_i - \bar{y})^2}$$

$$MSE = \frac{1}{n}\sum_{i=1}^{n}(y_i - \hat{y_i})^2$$

The specific values calculated are shown in the following table:

Table 6 Goodness of fit and mean square error values

application	Target	R^2 (goodness of fit)	MSE(Mean square error)
fj_exel_1Model→fj_exel_2data	[C]	0.99883	0.00119
	[T]	1	3.29297×10^{-30}
fj_exel_2Model→fj_exel_3data	[C]	0.99946	0.00051
	[T]	0.9999966	3.25627×10^{-6}
fj_exel_3Model→fj_exel_4data	[C]	0.99876	0.00119
	[T]	1	2.32503×10^{-30}
fj_exel_4Model→fj_exel_5data	[C]	0.99935	0.00063
	[T]	1	2.19579×10^{-30}
fj_exel_5Model→fj_exel_1data	[C]	0.99454	0.00538
	[T]	1	3.41076×10^{-30}

The above table combined with the simulation diagram in Table 4 shows that the multiple linear regression forecast model based on the least square method proposed in question for the steel plant data set data is applied to the next set of data, and the fitting effect is still very good., Especially for [T] there is almost no simulation error.

2.3 Overall data [C]&[T] forecast model

2.3.1 Overall data analysis and processing

Construct a [C]&[T] forecast model that is applicable to all steel mill data set data, that is, establish a new mathematical model after integrating and filtering the data in the steel mill data set. The same as the thinking direction of question, after the data is summarized, Ridge regression learning curve is also used to judge the multicollinearity of the data. The effect is shown in the following figure:

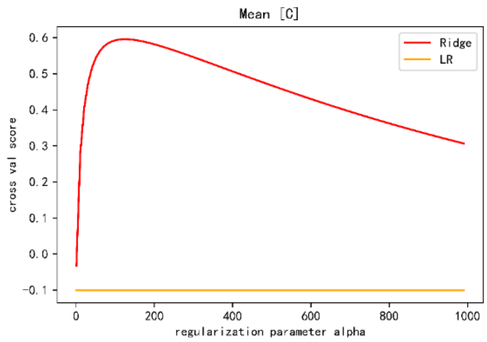


Figure 7 Ridge learning curve of overall [C]

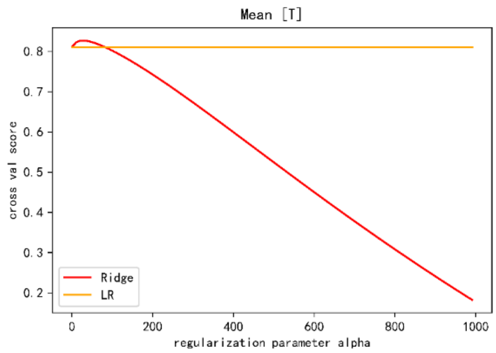


Figure 8 Ridge learning curve of the overall [T]

Observing the above figure, we can see that for [T], there is no multicollinearity in the data. For [C], it is obvious that the cross-validation score using Ridge regression has been improved, indicating that the data has multicollinearity, and the linear regression method can no longer be used. Therefore, the forecast model for the overall data [T] continues to use the least squares method to establish the model, and for the [C] after screening and comparison, the Ridge regression method is used to establish the model.

2.3.2 Constructing the overall data [C]&[T] forecast model

1. For the forecast model of [C]:

The above analysis shows that Ridge regression should be used to establish the model. According to the calculation, the model equation can be obtained as

$$y_1 = -0.8684\,x_1 + 0.0196\,x_2 - 0.2138\,x_3 + 0.0562\,x_4$$

The fitting prediction effect diagram is as follows:

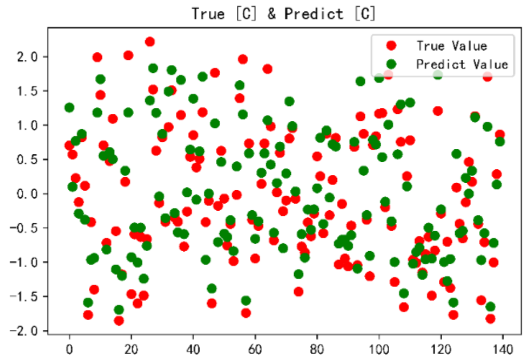


Figure 9 [C] Scatter plot of model prediction fitting effect

In order to know the fitting validity of the [C] forecast model, the judgment is made by calculating the coefficient of determination R^2 and the mean square error MSE. After calculation, it can be known that:

Table 7 Comparison of Ridge regression and linear regression

	R^2	MSE
Ridge returns	0.8545	0.1395
Linear regression	0.8571	0.1369

According to Table 6, it is found that the coefficient of determination of linear regression and MSE are better than Ridge regression, but because data analysis shows that there is multicollinearity, and Ridge regression can make the model more general, consider the situation of slightly lowering the accuracy rate Next, Ridge regression is more suitable as a predictive model of [C], so the model is established.

2. For the forecast model of [T]:

Continue to use the multiple linear regression model based on the least square method to build the model. According to the calculation, it can be concluded that the model equation is

$$y_2 = 0.2668\,x_1 + 0.6223\,x_2 - 0.2385\,x_3 + 0.0426\,x_4$$

The fitting prediction effect diagram is as follows:

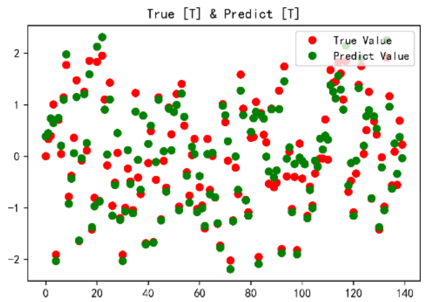


Figure 10 [T] Scatter plot of model prediction fitting effect

In order to know the fitting validity of the [T] prediction model, the determination is made by calculating the coefficient of determination R^2 and the mean square error MSE. After calculation, it can be known that $R^2 = 0.95846$, MSE=0.04349, which can be judged by combining with the fitting effect diagram in Figure 10 [T] The forecast model has good effect and meets the requirements.

3 MODEL CHECKING

For the test of model fitting accuracy, ROC curve and

MAE index are used to test it.

First judge the ROC curve. When evaluating the classification model, this method can objectively measure the performance of the model itself while reducing the interference caused by different test sets, and can be used to evaluate the pros and cons of the binary classifier. The ROC curve test was performed on each model.

The x-axis false positive rate (FPR) represents: the proportion of negative samples that are incorrectly predicted as positive samples. Calculation formula: FPR=(number of negative samples predicted as positive samples)/(total number of negative samples);

The y-axis true positive rate (TPR) represents: the proportion of positive samples that are predicted correctly in all positive samples, that is, the calling rate of positive samples. Calculation formula: TPR=(the number of positive samples predicted correctly)/(the total number of positive samples).

The specific calculation results are as follows. According to the following table, it can be clearly seen that the true value of the sample data set has a better fit with the predicted value of the model, and the model establishment meets the requirements.

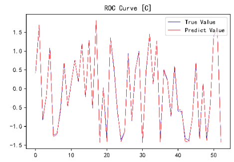


Figure 11 fj exel i Model ROC curve [C] test

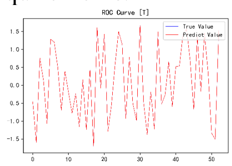


Figure 12 fj_exel_i Model ROC curve [T] test

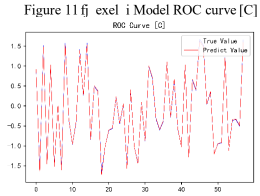


Figure 13 fj_exel_i+n Model ROC curve [C] test

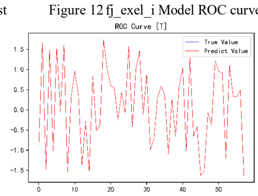
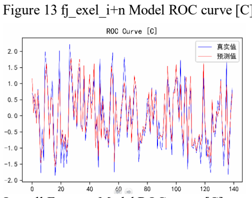


Figure 14 fj exel i+n Model ROC curve [T] test



Overall Forecast Model ROC curve [C] test

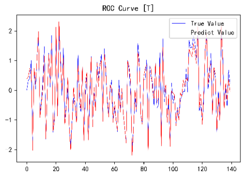


Figure 16 Overall Forecast Model ROC curve [T] test

Then perform MAE index test, that is, calculate the average value of absolute error, using the formula

$$MAE = \frac{\sum_{i=1}^{n} | x_i' - x_i |}{n}$$

Among them, x_i' is the true value and x_i is the predicted value. The specific values obtained according to the model are as follows. It can be seen from Table 9 that the [C]&[T]MAE values in the model based on the data set of each steel mill are all less than 0.1, that is, the error average is small, and the model establishment meets the requirements; in the overall data model, [C]& The MAE value of [T] is also less than 0.3, that is, the average error is small. Under the premise of being widely used, its model establishment is also in line with actual requirements.

Table 9 MAE indicators

Model	Target	MAE value
fj_exel_1 Model	[C]	0.02732
	[T]	1.52787×10^{-15}
fj_exel_2 Model	[C]	0.01795
	[T]	0.00143
fj_exel_3 Model	[C]	0.02603
	[T]	1.24518×10^{-15}
fj_exel_4 Model	[C]	0.02006
	[T]	1.24661×10^{-15}
fj_exel_5 Model	[C]	0.05075
	[T]	1.56515×10^{-15}
Overall forecast Model	[C]	0.29498
	[T]	0.16974

4. EVALUATION AND PROMOTION OF THE MODEL

4.1 Evaluation of the model

1. Make reasonable assumptions to make the problem easier to deal with.
2. The model is constructed using simple multiple linear regression, which is concise and practical, and can be effectively promoted and further developed.
3. Before the model is established, a variety of methods are used to judge its use model, which increases the reliability of the final model.
4. Using Ridge regression can make the model application more general.
5. When analyzing the simulation situation of the model, only the situation of the former model being substituted into the next data is considered, the situation is less, and the error analysis is not comprehensive.

4.2 Promotion of the model

The establishment of the model itself is to solve the relationship between PQ, Q, [CO], [CO2] and [C]&[T] in the steelmaking process, and to solve the bottleneck problem of smart steelmaking in small and medium-sized converters. According to data characteristics, This model can also be applied to the statistical forecast of the conversion of other components in the steelmaking process to obtain more accurate component data in the converter process.

At the same time, the model is established using widely used and simple multiple linear regression and Ridge regression, so the model method proposed in this question can be applied to solve many problems in life, such as: socioeconomic forecast analysis, performance factors affect forecasting, etc.

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Comprehensive Evaluation System of Personal Credit Based on Random Forest

*Bing Zhang[1, 2, 3, *], Haokang Yang[1, 3], Yunan Wang[1, 3]*
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[3]School of Artificial Intelligence, North China University of Science and Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: The core content of bank management is credit risk assessment. Establishing a complete and automated personal credit evaluation system will help maximize the bank's revenue. Based on credit data, a comprehensive personal credit evaluation model based on random forest algorithm is proposed, and the model is tested with clustering algorithm, and reasonable suggestions are made. Firstly, the data is preprocessed, and redundant features are filtered out. Secondly, establish an overall rating based on the random forest and comprehensive evaluation model, and use the random forest algorithm to divide the 19 dimensional indicators into five factors that affect the evaluation results: key factors, more critical factors, general factors, less important factors, and minor factors Level, establish a multi-level evaluation system, in which the current current deposit status, credit amount, and credit period are the key factors that determine the pros and cons of risk assessment. According to the classification result, the personal credit evaluation result is obtained. The model tested the model calculation results on the remaining 20% of the samples, and the test found that the accuracy of the model was close to 80%. At the same time, build a credit rating classification model based on hierarchical clustering, and cluster based on the full feature set, the key feature set, the more key feature set, the general feature set, the less important feature set, and the minor feature set, and six clusters are obtained. The credit rating classification model uses accuracy and recall rates as comparison standards to select the optimal clustering model and compare it with the random forest credit rating classification model. In the end, it was found that the accuracy rate of the clustering model decreased successively, and the highest accuracy rate of the clustering model was 77%. The above analysis shows that the hierarchical clustering model can be used as customer credit rating classification, but in order to reduce bank risks, it is more appropriate to use the random forest model.

Keywords: Personal credit evaluation; random forest; comprehensive evaluation; cluster analysis

1. INTRODUCTION

With economic development and changes in personal consumption concepts, credit business has gradually entered people’s daily lives. It is a key business in commercial banks and many financial institutions. Credit risk analysis is very important in the credit industry. Credit institutions Evaluate the borrower's repayment ability and willingness to repay, and determine whether to issue loans to the borrower, as well as the loan amount and loan period, which is conducive to the credit platform to effectively reduce potential risks.

Based on the credit data of 1, 000 customers, 80% of the customer data was extracted as a training set to establish a mathematical model of a comprehensive personal credit evaluation system. Use the remaining samples to test the results of the model calculations. Based on the calculated results, it explains how to determine the personal credit evaluation results, and puts forward a reasonable evaluation of the model. In the case of deleting the category variable, the user level is classified.

2.MODEL ASSUMPTIONS

Assumption 1: Assume that 1000 customers are randomly selected customers.

Assumption2: Assume that all 1, 000 customers are credited by themselves, and their accounts are used for deposits and withdrawals.

Assumption3: Assume that the indicators given are more comprehensive factors that affect personal credit evaluation.

Assumption4: Assume that the customer information to be extracted is objective and accurate.

3.EXPERIMENTAL

3.1 ESTABLISH A PERSONAL CREDIT EVALUATION MODEL

Data preprocessing

The data does not need to be normalized, check that there are no missing values, and all 1000 sets of data can not be deleted outliers, adjust according to the data description, remove all the grades with the initials of A, and facilitate the application of the posterior model. The correlation coefficient is used to screen the redundant features, and the result after the screening is:

Table 1. Pearson correlation coefficient result

Group	Mutual relations	Correlation coefficient
21	(1, 4)	0.624984
49	(2, 15)	0.437066
185	(16, 18)	0.383022
156	(11, 18)	0.345219
76	(4, 11)	0.311599

It is found that the overall indicators are not highly correlated, and the redundant features with a correlation greater than 0.5 will be deleted, that is, the loan maturity factor will be deleted.

Random forest prediction model

In order to facilitate the training and prediction of the prediction model, the random forest algorithm is used to select the indicator features, and the features with greater impact are selected to reduce the number of features when building the model. The idea of using random forest to evaluate the importance of features is to analyze each The contribution degree of each feature index on each tree in the random forest is averaged, and finally the contribution between the features is compared. We use the Gini index as the evaluation index to measure.

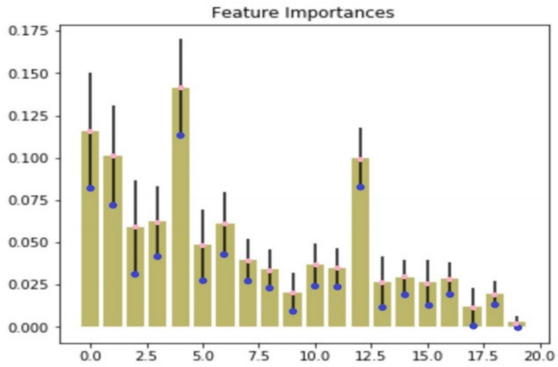

Figure 1. Feature importance box plot

Based on the credit data set, it is found that there are two results of credit evaluation, which are good and bad. The evaluation results are mainly affected by the specific values of 19 indicators. Arrange the 19 indicators and classify the 19 indicators according to the size of their weights. The results of the division show that the status of current demand deposits, the amount of credit, and the length of credit are the key factors that determine the pros and cons of risk assessment; credit history, loan use, working years, debt as a percentage of disposable income, and property status as secondary factors; Savings account, gender, and marital status are general factors; the number of years of residence at the current address and other installment plans are minor factors, and the rest are minor factors. The division diagram is as follows:

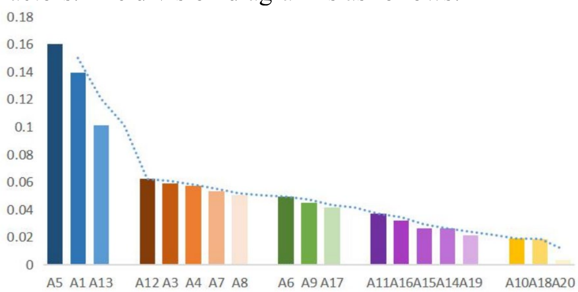

Figure 2. Influencing factors division and ranking chart

Finally, the overall model is constructed according to the classification level. There are two assessment results of risk assessment, which are the pros and cons of the user's credit rating, and credit influencing factors are used as the main part of the evaluation model. The overall evaluation model is shown in the figure:

Each feature factor data is composed of several small grades. For example, loan purposes are divided into 11 categories, which are represented by 0, 1, ..., 10, etc., and each small grade is used according to the meaning of the question. W to indicate that it is divided into 63 categories. After 20 indicators are classified, a partial schematic diagram of the model can be obtained as a whole:

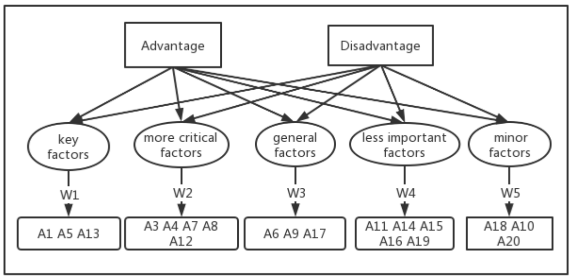

Figure 3. Personal Credit Comprehensive Evaluation Model

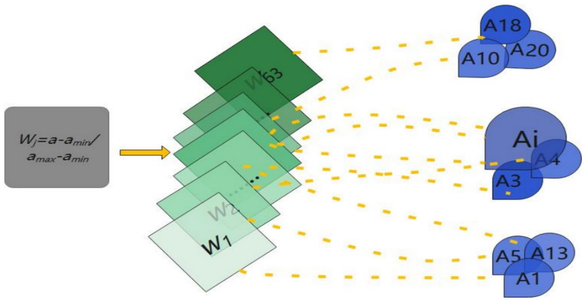

Figure 4. Feature classification and extraction

Combining the two partial graphs is the comprehensive credit risk assessment model. After the model is summarized, we can find the overall model assessment method through the following relationship:

$Z = \sum_{i=1}^{5} W_i w_j$(The value of j is not fixed, depending on the factor limit value)

3.2 RESULTS OF THE TEST MODEL

Use the remaining 20% of the users as the test set to calculate the results of the model using the random forest method. Although there are differences between the results of the model and the real results, the accuracy of the model is 0.765, but it is not difficult to find that the result of the model is displayed as In the form of probability, the results obtained under real conditions are also more reasonable.

Part of the results of the model are as follows:

Table 2.20% test set prediction

Number	Predict	Number	Predict	Number	Predict
1	1	11	1	21	0.7
2	0.8	12	1	22	1
3	1	13	0.6	23	1
4	0.1	14	0.8	24	1
5	0.7	15	1	25	0.6
6	0.5	16	0.1	26	1
7	1	17	1	27	0
8	0.7	18	1	28	0.7
9	0.2	19	0.2	29	0.1
10	1	20	0.3	30	0.9

The ROC curve is the ratio of the accuracy of the model to the recall rate. The closer the ROC curve is to the upper left corner, the higher the accuracy of the model. Observing the following figure, we can see that although the ROC curve is above the proportional function, there is still a distance from the upper left corner, indicating the model The accuracy needs to be improved.

By calculation, the area of AUC is approximately equal to 0.73, which is a low-efficiency classifier, but according to science, this classifier is already perfect for risk prediction.

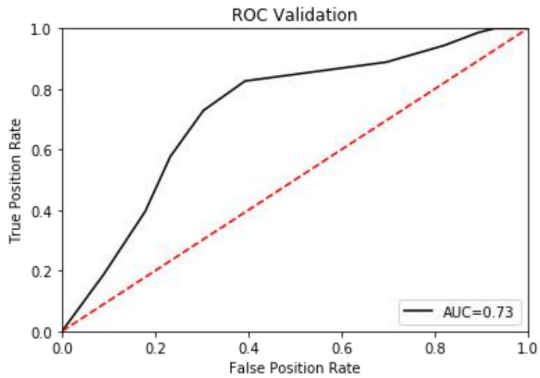

Figure 5.ROC graph

3.3 REASONABLE EVALUATION OF THE MODEL

Due to the particularity of risk assessment, based on the principle of reducing bank risks and minimizing bank losses, I would rather classify a good customer as a bad customer than a bad customer as a good customer, so we adopt a general classification model for evaluation. It is unreasonable for indicators to evaluate the model. Therefore, a model evaluation system based on fuzzy comprehensive evaluation is constructed to evaluate the random forest classification model.

In order to better observe customer credit, customer credit is subdivided into four levels: A, B, C, D, as shown in Table 1. Customer reputation decreases successively, and the lower the reputation, the greater the probability of untrustworthiness. The misclassification of the classification model will bring higher losses to the bank.

Table 3. Customer credit rating

Credit rating	A	B	C	D
Credit rate threshold	0-0.3	0.3-0.5	0.6-0.85	0.85-1.0

In classification learning, the commonly used classification evaluation indicators include accuracy, precision, recall, and F1 value. TP stands for true class, TN stands for true negative class, FP stands for false positive class, and FN stands for false negative class.The accuracy rate represents the ratio of the number of correct predictions to the total number of predictions;Accuracy rate represents the ratio of the number of correct predictions to the total number of positive predictions;The recall rate represents the ratio of the number of predicted positive cases to the total number of positive labels;The F1 value represents the average of recall and precision.

Step1 Determine the factor set C, where C_i represents the credit rating A, B, C, D respectively. Customer reputation decreases successively, and the lower the reputation, the greater the possibility of dishonesty;

Step2 Determine the comment set V, which represents the evaluation index, accuracy rate, precision rate, recall rate, and F1 value. The higher the evaluation index, the better;

Step3 Determine the weight set, the weight of the i-th factor set in the fuzzy set U is A= {a1, a2, a3, a4}, and the weights add up to 1. It is believed that the lower the reputation, the more attention should be paid to the customer, where A= {0.1, 0.2, 0.3, 0.4};

Step4 Perform single-factor evaluation rij ={ r_{i1}, r_{i2}, r_{i3}, r_{i4}} is the i-th factor. For the degree of membership of the j-th comment set, the value here is the value of the judgment index.

Step5 Construct a comprehensive evaluation matrix The obtained comprehensive evaluation matrix is:

$$R=\begin{pmatrix} 0.83 & 0.81 & 0.86 & 0.82 \\ 0.83 & 0.72 & 0.79 & 0.81 \\ 0.81 & 0.71 & 0.78 & 0.83 \\ 0.81 & 0.71 & 0.78 & 0.81 \end{pmatrix}$$

Step6 Comprehensive evaluation model Use the compound calculation of the fuzzy matrix to obtain the fuzzy evaluation model:B=A·R.Through calculation, the evaluation index score of the random forest model is:B=(0.816, 0.722, 0.79, 0.817)

A reasonable evaluation system of customer credit prediction model is constructed by the fuzzy comprehensive evaluation model. The accuracy, precision, recall, and F1 values of the random forest classification model are 0.816, 0.722, 0.79, 0.817 respectively. In the risk prediction model, it has a good effect.

3.4 Multi-applicability of cluster analysis model

Based on the full feature set, the key feature set divided in the second question, the more key feature set, the general feature set, the less important feature set, and the second feature set are clustered, and six credit rating classification models are obtained.

The hierarchical clustering algorithm decomposes the given data hierarchically until a certain condition is met. It can be divided into two schemes: agglomeration and splitting. Condensed hierarchical clustering is a bottom-up strategy. First, each object is regarded as a cluster, and then these atomic clusters are merged into larger and larger clusters, until all the objects are in a cluster or a certain condition Termination; the split hierarchical clustering is opposite to the agglomerated hierarchical clustering. It uses a bottom-down strategy. It first places all objects in a cluster and then gradually subdivides them into smaller and smaller clusters until each Objects form a cluster by themselves, or reach a certain termination condition.

Based on the full feature set, the key feature set divided in the second question, the more key feature set, the general feature set, the less important feature set, and the second feature set are clustered, and six credit rating classification models are obtained. Draw a comparison chart of the six cluster models.

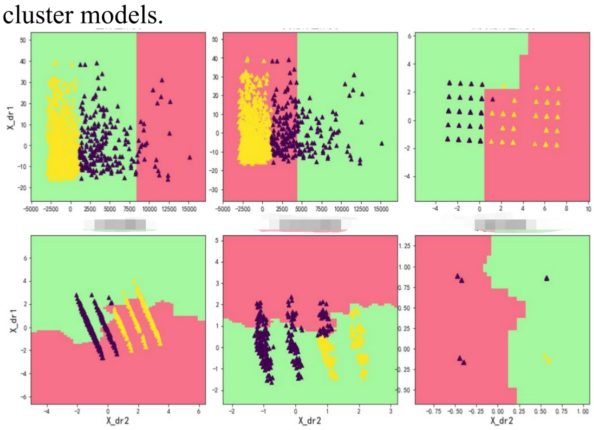

Figure 6. Clustering model comparison chart

Compare the accuracy of 6 clustering models. According to the accuracy rate of the model, it is found that the accuracy rate of the model decreases successively, which further proves that the feature level of random forest screening and classification is reasonable and scientific. The optimal clustering accuracy rate is 77%, so it can be used as a customer credit rating classification model, but the accuracy rate is slightly lower than that of the random forest. Therefore, in order to reduce the bank risk, the random forest model is more appropriate.

Table 4. Clustering model accuracy rate comparison table

Clustering model	Accuracy	Clustering model	Accuracy
Full feature clustering	77%	General feature clustering	56%
Key feature clustering	76%	Less important feature clustering	55%
More critical feature clustering	74%	Secondary feature clustering	50%

4.RESULT ANALYSIS AND MODEL PROMOTION

4.1 Analysis of model results

According to the analysis of the results, it can be seen that the factors that affect the results of credit evaluation are not only one aspect, but are affected by various comprehensive factors. By observing the specific value of the indicator weight, it is found that the most important factor among the key factors is the amount of credit. The higher the amount of credit, the greater the personal risk. On the contrary, the smaller the amount of credit, the assessment of personal credit The better the result, the greater the impact. The second is the current demand deposit status. When the current demand deposit status is greater than or equal to 200 marks, it proves that the user has the ability to repay the credit, but when the value of a is one or 4, the risk level of the customer is compared High, it should not be loaned to the customer. Observing the overall indicators, it is found to be important. The indicators of important factors are all related to the property and the amount of deposits, and the other unimportant factors are related to the customer's personal information. When all users at risk are turned into bad users, then the risk of bank loans will be minimized, but at this time, profits cannot be maximized. Comprehensive consideration, if the bank wants to maximize profits, it should consider the users who are at risk before deciding whether to make credit.

4.2 Analysis of rationality

In principle, we believe that we would rather classify a good customer as a bad customer than a bad customer as a good customer. According to the requirements given in the question, we will classify all users at risk as bad users and at the same time classify ourselves To be a good user, it is still defined as a good user. Finally, the simulation results found that the difference between the real values is small. From this, it can be seen that the bank still considers the risk as the first element when predicting the risk. In order to maximize the benefits, it should be The results are further classified. The fourth question is agglomerated clustering, and it is found that the accuracy of the five groups of key factors has dropped at one time, indicating that the five levels of artificial classification have a certain degree of rationality and accuracy. Through the clustering results, the key, the more critical, the general, the less important, the less important factors that affect the discovery of key factors are more, and the less important factors are less.

The model gives different credit evaluation results under various conditions, so it has certain reference significance for various situations in actual credit. Random forest is a kind of artificial intelligence model which is more effective than decision tree classification. The model can produce good results on large data in a short time.Through the input data of the detection model, by measuring the degree of reduction of the heterogeneity produced by each division, find the best division.

It can be used for various banks to establish an evaluation system for enterprises, and can also be used for simple classification, evaluation, and decision-making problems in daily life. At the same time, the model also plays an important role in affecting the results of other aspects of the user, for example, it can be used to evaluate the user's physical health according to physical indicators. With the rise of bicycle sharing, online shopping and other industries, a reasonable construction of a user's reputation system has played a role in promoting companies to provide personalized services for different users.

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Research and Application of Laser Skin Sterilization Technology

Tengda Zhang[1, 2], Jing Liang[1, 2], Siyu Feng[1, 2]
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Yisheng Innovation Education North China University of Science and Technology, Tangshan 063210, China

Abstract: In recent years, the emergence of drug-resistant bacteria has brought great challenges to clinical medicine. As a new type of sterilization weapon, laser sterilization technology has attracted more and more attention. The study aims to establish a simple and feasible in vitro model of laser skin sterilization. The use of carbon dioxide dot matrix laser for skin sterilization not only solves the problems of low energy, low efficiency, inaccurate irradiation positioning or unable to cover the irradiation surface of traditional laser sterilization, but also further reduces skin damage, which is more efficient and safer. It is an ideal choice for skin sterilization. Carbon dioxide lattice laser has continuous type, single pulse type, repetitive pulse type and super pulse type. Using the graph generation algorithm and the principle of random and non adjacent to locate each treatment point, the heat accumulation between each point can be effectively prevented.

Key words: Laser sterilization; Carbon dioxide lattice; Graph generation algorithm

INTRODUCTION

As a new type of sterilization weapon, laser sterilization technology has attracted more and more attention. The largest number of studies came from the department of stomatology. Laser technology is used for periodontal diseases, caries prevention, root control and other diseases related to sterilization in stomatology department. The laser sterilized root canal model was developed. The model is not suitable for dermatology because the skin structure is quite different from the tooth structure and the laser parameters are very different. As a new bactericidal weapon, carbon dioxide lattice laser has been fully proved in bactericidal effect and high safety, so it has a great prospect in clinical application. he purpose of this study is to establish a simple model in the field of skin disinfection in vitro. The method used in this paper is based on traditional microbiology, which ensures the reliability of the experimental results.

APPLICATION PRINCIPLE

Laser technology can be applied to skin sterilization[1]. When its energy is large enough, it can destroy substances, including organisms. This is the principle that X-rays of a certain intensity can harm the human body and gamma rays can kill cancer cells. The laser with the highest energy density can destroy all matter. However, it takes energy to maintain the continuous light intensity, so people use pulses to emit it every other period of time to kill bacteria. As a physical sterilization method, laser sterilization has unique advantages over traditional antibiotic sterilization. Most importantly, no microorganisms have been found to be resistant to laser. Secondly, laser sterilization has a wide spectrum and can kill G + or G-bacteria. Other advantages include: no hepatorenal toxicity, relatively safe; The production and application process will not cause environmental pollution; Low clinical cost and low treatment cost; The treatment time is short and the effect is fast[2]. The wavelength of carbon dioxide laser is 10600nm, and the absorption rate of this band laser is close to 100%. Therefore, the penetration depth of this band laser to the tissue is very shallow, which mainly acts on the skin surface.

In the traditional laser, the light source of ultraviolet and photodynamic method is continuous laser, with low output power and long action time; Semiconductor light source technology can not be located in the part that needs treatment, but radiates in a wide range[3]. Therefore, it is often necessary to cover the skin around the skin lesions, which adds a lot of inconvenience to the clinical work. In addition, ultraviolet and photodynamic have their own unique limitations. The carcinogenesis, sunburn and melanin deposition of ultraviolet rays greatly limit its application on the skin. The effect of photodynamic sterilization without photosensitizer is not satisfactory[3]. Although the infrared lasers Nd: YAG (1064nm), er, Cr: YSGG (2780nm) and Er: YAG (2940nm) are ultra pulsed lasers, which solve the problem of low energy, these evidences come from stomatology. The laser used is a two-dimensional output mode, which is a point on the plane, so it is difficult to achieve surface coverage, so it can not be used for skin sterilization.

The target tissue of carbon dioxide laser is water, which produces various effects by vaporizing water. Because the skin contains a lot of water, the carbon dioxide laser target is accurate and the bleeding is less.

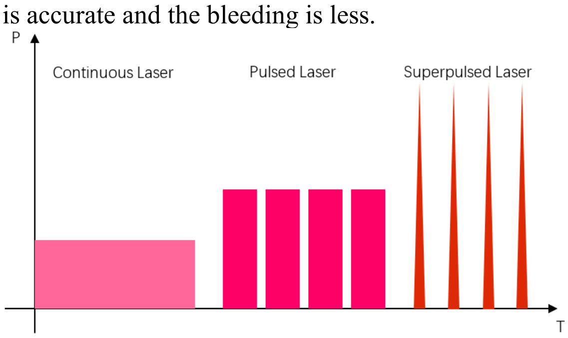

Figure 1. Laser emission pattern

Carbon dioxide dot matrix laser not only solves the problems of low energy, low efficiency, inaccurate irradiation positioning or unable to cover the irradiation surface of traditional laser sterilization, but also can further reduce skin damage, more efficient and safer[4]. It is an ideal choice for skin sterilization. Similarly, the laser not only has the characteristics of traditional carbon dioxide laser, but also combines super pulse mode, dot matrix mode and scanning mode. The super pulse mode releases the energy in the form of narrow pulse width to achieve a very high laser peak power in an instant (as shown in Figure 1. The ordinate represents the output power and the abscissa represents the time).

The carbon dioxide lattice laser has continuous type, single pulse type, repeated pulse type and super pulse type. In the super pulse mode, it can produce pulses with a minimum pulse width of 0.iras, so it can output high peak power. The dot matrix laser technology was first used in clinical practice in 2003[5]. The carbon dioxide exfoliative dot matrix laser technology was introduced in 2007. The difference between dot matrix laser and traditional laser is that it only irradiates a small part of the skin and produces a small heat loss area, which is called "micro heat area" (MTZ, microscopic thermal zone), while the surrounding tissues remain intact. Through the migration of surrounding cells, collagen proliferates to achieve rapid repair, and the necrotic tissues in the micro hot area are excluded[6].According to the integrity of the cuticle in the micro hot area, the dot matrix laser is divided into non Exfoliative and exfoliative, and the carbon dioxide dot matrix laser belongs to the latter (as shown in Figure 2).

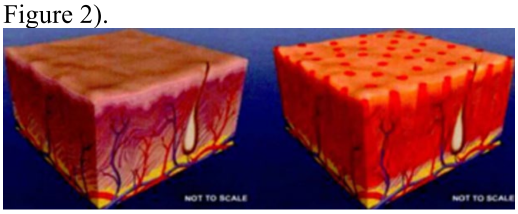

Figure 2 skin simulation pictures before and after laser irradiation

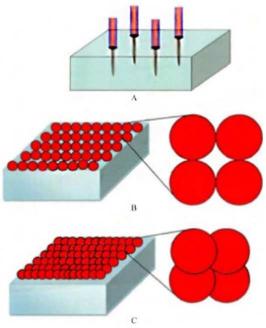

Figure 3. Schematic diagram of dot array laser mode

Figure A is schematic diagram of laser irradiation, and Figure B shows that the light spots do not coincide when the density of Dainan town is set to 0.4mm. Figure C shows that when the lattice density is set to 0.3mm, the spot overlaps with a quarter of its diameter and can be completely covered. The lattice density used in this study is 0.3mm.

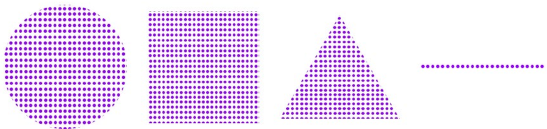

Figure 4 Dot matrix laser scanning pattern diagram

This technology makes the laser damage to the skin small, the repair time is short, greatly improves the safety of clinical application. The laser also has a unique interval scanning mode, which is more uniform in scanning points and less heat loss. More importantly, it allows the operator to freely control the shape and scope of scanning, which is more suitable for clinical applications of different shapes and areas of skin lesions.

Control System Design Of Carbon Dioxide Lattice Laser: HARDWARE DESIGN

The dot-matrix laser treatment control system applied in the medical industry has high requirements for its reliability, stability and anti-interference from the point of view of hardware architecture. In meet the technical requirements of the situation, try to simplify the scheme and the circuit design and structural design, reduce the amount of the machine components and mechanical structure parts is an effective way to improve the reliability, so in the design of system hardware, full consideration to the application characteristics of control system, as far as possible using the mature modules and relatively reliable interface design, So as to simplify the hardware system structure, reduce the possibility of system error, improve the overall electrical performance, process performance, reliability and maintainability of the hardware circuit, and reduce the cost of the hardware circuit[7].

It is expected to achieve the following functions[8]:

(1) Overall control function: responsible for the operation of the laser initialization and coordination of other functions.

(2) Human-computer interaction function: establish a channel for information interaction between the system and users.

(3) Laser output control: to achieve accurate output of laser energy.

(4) Galvanometer control function: control the scanning mode to realize the scanning and filling of various graphics.

(5) Power supply function: Responsible for power supply required by each module of the system.

(6) Fault alarm function: alarm signal will be sent when the system fails

The working process is as follows: After the system is powered on and started, initialize the system and check whether the system is working properly. If any failure or error is detected, the system will start the alarm system and disallow the system to start[9]. If no fault is detected, the startup screen is displayed. After the initialization and detection are complete, the work screen continues to be displayed, and the system is put into the standby state. In standby state, users can select appropriate parameters according to actual treatment needs, including selecting optical mode, setting optical power, setting pulse width, clearing pulse number, and setting system parameters such as date. After you press the READY key, the system enters the optical READY state. The system sends out a pre-ionization signal, so that the gas in the laser tube is in a pre-ionized state. At this point, the system detects the status of the pedal switch in real time[10]. If it detects that the trigger switch has been triggered, the system will generate laser output according to parameter Settings. Real-time energy detection will be carried out when the light comes out. Once the energy is abnormal, the light will be forbidden and alarm information will be displayed automatically.

The functions of the system are designed into several main modules, including: master controller module, human-computer interaction module, laser control module, scanning galvanometer control module, power supply module, and state detection module, as shown in Figure 5.

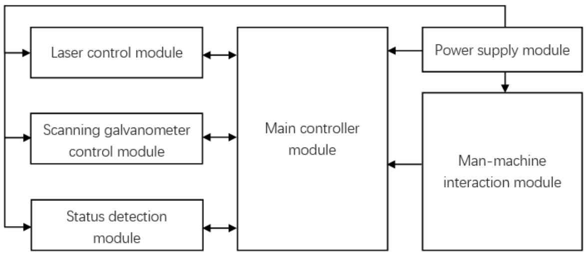

Figure 5 Lattice laser control system

The main controller module is the core of the whole system, mainly to maintain the operation of the whole system, and coordinate and control the work of other modules, according to the different parameters set by the user to control each module, to achieve the expected laser output; Power module Supplies power to each module to meet different power requirements of each module[11]. The laser control module realizes the laser output in different modes and ensures the accuracy and reliability of laser energy.The control module of scanning vibroscope is responsible for scanning and filling the boundary of laser lattice graph with different parameters in scanning mode. Human-computer interaction module includes touch screen, PC, printer three parts, to provide users with a friendly operation interface; The status detection module is responsible for detecting the state of water temperature, water flow, light brake, foot switch and so on during the operation of the system, and real-time detection of the output laser energy to ensure the safety of the system.

Figure 6 Laser therapeutic apparatus

SOFTWARE AND ALGORITHM DESIGN:

How to control the scanning mode (including the size, density, distance and shape of dot array) to achieve the best therapeutic effect is an important research direction of dot array laser technology. The traditional sequential scanning method makes the heat of adjacent tissues cannot be diffused in time, and it is easy to form heat accumulation, which increases the probability of thermal damage, edema, erythema, etc., increases the overlap of heated areas of tissues, and increases various complications. Recent studies have shown that a randomized, non-adjacent approach to the location of treatment sites can effectively prevent heat accumulation between treatment sites.

The so-called graph generation algorithm here refers to how to output the most close to the ideal straight line or curve as quickly as possible for an inclined straight line or curved curve, and how to determine the pixel set that is best close to the graph at the fastest speed under the condition of dot matrix output equipment. To evaluate the merits of a graph generating algorithm, three factors should be considered: the precision of the displayed graph, the time complexity and the space complexity of the algorithm.

Considering the actual needs of the treatment, the basic graphics to be realized in the system include horizontal lines, rectangles, triangles and circle. Because the scanning of horizontal line is relatively simple and direct, the principle of boundary scanning and filling algorithm of the last three basic graphs is introduced in detail here, and the flow chart of each algorithm is given. The scanning range of this system is 3 ~ 20mm, and the scanning interval is 0.2 ~ 2mm. Since the system uses the analog voltage generated by the 8-bit D/A converter to control the scanning galvanometer system, the effective data range of coordinates and spacing in the algorithm discussion is an integer between 0 and 255.

Rectangle filling algorithm: currently there are two commonly used filling algorithm: seed filling algorithm and scan line filling algorithm. The former algorithm efficiency is lower, and need extra storage space for large stack structure, here we use the scan line filling algorithm, the algorithm of the basic idea is: using parallel to the Y or X axis lines intersect with graphics, call the line scan line, scanning line and graphics part is the need to fill the part between the intersection; When one scan line is finished, shift the scan line and continue the above intersection and filling process until the whole graph is filled.

Triangle filling algorithm: the realized triangle is isosceles triangle, and specify the midpoint of the triangle height as the origin of coordinates. The parameters of the triangle are user input, including the base length and height, thus determining the coordinates of the three vertices of the triangle. Then the line generation algorithm can be used to scan the three lines clockwise or counterclockwise to realize the boundary scanning of the triangle.

Circular boundary scanning has the classical Bresenham algorithm, and the circle is a special case of ellipse, so the ellipse boundary scanning can adopt the direct extended Bresenham circle drawing algorithm. One problem with this approach, however, is that the linear error between the ellipse and the selected pixel is not guaranteed to be minimal. In this study, a midpoint method is used to ensure that the maximum linear error between the actual ellipse and the selected ellipse pixel is 0.5. In The Bresenham ellipse drawing algorithm, the distance between the ellipse and the nearest two candidate pixels is used to select the appropriate pixel, that is, the nearest pixel is selected, while in the midpoint algorithm, the distance between the ellipse and the line center of the two selected pixels is used to judge.

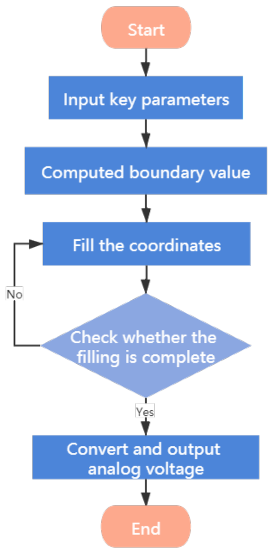

Figure 7 Flow chart of filling algorithm

In the design of the dot matrix carbon dioxide laser, the quality of the scanning pattern will directly affect the final therapeutic effect in addition to accurately controlling the laser power. The closer the scan pattern is to the shape of the patient, the more it can reduce the injury to the normal skin and reduce the pain of the patient during treatment. Therefore, the scan filling algorithm of the graph becomes the key to the control system.

Figure 8. Laser profile

REALIZE FUNCTION

Co2 laser is currently used in a wide range of clinical applications, in addition to dermatology, orthopedics, otolaryngology, gynecology, neurology, dentistry, stomatology, reproduction and general surgery. The earliest clinical application of carbon dioxide laser is as a scalpel, which can cut and stop bleeding through water molecules absorbing laser energy and vaporizing, with little tissue damage. As early as 1966, Yahr discovered that the carbon dioxide laser can cut and stop bleeding, so people began to study the carbon dioxide laser. In subsequent studies, it was found that the CO2 laser also vaporized infectious materials, such as pus or bacteria-containing fluids, thereby detoxifying those areas. Earlier studies have shown this.

It is expected to further expand its application in skin diseases by using the sterilizing function of co2 laser. Because some skin diseases are related to bacterial colonization or infection, considering the sterilization and safety characteristics of co2 dot array laser, it is expected to be applied to the treatment of skin diseases related to bacterial infection. Current evidence of a correlation between skin diseases and bacterial colonization of the skin surface focuses on atopic dermatitis. Atopic dermatitis is believed to be associated with staphylococcus aureus colonization or infection.

One trial included 4 patients with skin diseases, 2 with skin surface lesions associated with infection, and 2 with psoriasis. It was found that the bacterial population density of skin lesions was higher than that of normal skin. After laser irradiation, the bacterial population density of skin lesions decreased obviously. It is concluded that carbon dioxide laser has a good killing effect on the bacteria on the skin surface. In the process of irradiation, the patient had a transient tingling sensation without other obvious side effects, and the patient was well tolerated.

According to the current study, specific dermatitis is associated with the colonization of STaphylococcus aureus, and the addition of topical antibiotics can bring drug resistance problems. Therefore, the new method of laser sterilization may be used as an adjunctive treatment for diseases related to bacterial colonization or infection.

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Mental Health Assessment Model Based on TOPSIS Analysis Combined with Entropy Weight Method

Xingyuan Zhang[1,2], Tengda Zhang[1,2], Chukun Li[1,2]*
[1]Engineering Computing and Simulation Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Science, North China University of Science and Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: With the rapid development of social economy, ideological model, technology and culture, the mental health of minors has become an important social problem that needs to be solved urgently. This article mainly establishes a model of the distance method of superior and inferior solutions to construct a mental health evaluation system for minors, and analyzes the current state of mental health of minors. First, preprocess the questionnaire survey data for middle school students, eliminate cases with too many missing values, and fill in missing values in total scores and offline results. Then, the entropy weight method is used to weight the ten factors that affect the mental health of minors, and the TOPSIS mental health influencing factor evaluation model is established to obtain the level of each minor's mental health. Then through K-means clustering, the ten major impact indicators are classified into three categories and analyzed separately. Finally, the data is used to visualize the psychological status of minors.
Keywords: Entropy method; K-means clustering; TOPSIS analysis method; data visualization

1. INTRODUCTION

Minors are in a very important period of physical and mental development. With the development of physiology and psychology, the increase of competitive pressure, the expansion of social experience and the change of thinking mode, they may encounter or produce various psychological problems in learning, life, interpersonal communication and self-consciousness.

With the rapid development of China's economy and society, the incidence of minors' psychological and behavioral problems and the prevalence of mental disorders have gradually increased, which has become an important public health problem related to the future of the country and the nation.It is of great significance to build a mental health evaluation system for minors.

2. EXPERIMENTAL

2.1 DATA PREPROCESSING

Data preprocessing includes: merging questionnaire data, removing unique attributes, dealing with outliers, dealing with missing values, and adjusting levels.

Firstly,merging questionnaire data: The questionnaire data is in 15 tables, which has caused certain difficulties in the mental health analysis of minors in the region. In order to reduce the difficulty of the model, we use the pandas module of Python to merge the questionnaire data into one table, To facilitate the overall analysis.

Secondly,remove unique attributes: unique attributes are usually attributes that only exist in certain samples, and are not universal. They cannot describe the common law of all samples. In the middle school student psychological questionnaire data 12, the class and answer time can be classified into this category, so we removed these two unique attributes to reduce the impact on the overall data.

Thirdly,dealing with outliers: outliers are usually data that is very different from ordinary data, and these data do not reflect the general law of the sample. Here, the total score can be used to measure the mental health of minors. We need to determine the mental health of each minor, so we replaced it with the average of the total score.

Forthly,dealing with missing values: Since we need to visualize the psychological questionnaire data in this article, we have deleted the missing data from the top ten indicators for judging mental health, and used the average to calculate the missing values of the total score and offline score filled.

Finally, grade adjustment: Grade can be used to judge the degree of mental health. The grades in the psychological questionnaire data are all A. For this, we adjusted the grade with the help of the one-to-one correspondence between the total score and the grade.

2.2 ESTABLISH A MATHEMATICAL MODEL WITH THE TOPSIS ANALYSIS METHOD AS THE SCORE

Analyzing this problem, it can be concluded that the problem of minors’ mental health is a judging type of problem, which requires judging the minor’s mental health. [1] Ten factors are used to evaluate the mental health of middle school students. Then, for these data, the relationship between the data is analyzed, integrated and normalized, and the analysis can be completed. [2]

In the TOPSIS analysis method, indicators are usually divided into very large, very small, intermediate and interval types. After processing the 15 questionnaires in the attachment, the following conclusions can be drawn:

Available from the data in the question, there is a one-to-one correspondence between offline scores, total scores and grades, so you can ignore the grades and only analyze the total scores to avoid two or more index values that are the same element at the same time leading to analysis Deviations can also be evaluated and analyzed using grades or offline results.

When the total score value is larger, the data is better, then the offline score is extremely large. No need for normalization.

For other indicators, such as obsessive-compulsive symptoms, paranoia, hostility, interpersonal tension and sensitivity, depression, anxiety, learning pressure, maladjustment, emotional imbalance, psychological imbalance, etc., when the data is smaller, the data is better, then these values are extremely Small size needs to be transformed into very large size. The purpose of positive is to transform very small indicators into very large size. The method to convert the very small to the very large is:

$$\tilde{x}_i = max - x$$

Among them $\tilde{x}_i$ is the index data after the very small index is normalized, *x* is the original data, and *max* is the largest value in the similar index.

Normalizing normalized data to eliminate the influence of dimensions on data and reduce the error of experimental results. The standardized formula is:

$$Z_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{n} x_{ij}^2}}$$

(Z_{ij} is an element in the normalized matrix, X_{ij} is an element in the normalized matrix)

However, the matrix in the standardization cannot have negative numbers, that is, the values must be greater than or equal to 0; for negative numbers, you need to re-standardize according to the following method.

$$\tilde{Z}_{ij} = \frac{x_{ij} - min\{x_{1j}, x_{2j}, \ldots, x_{nj}\}}{max\{x_{1j}, x_{2j}, \ldots, x_{nj}\} - min\{x_{1j}, x_{2j}, \ldots, x_{nj}\}}$$

After the data is normalized, the entropy method is used to obtain the weight of each data, and the score is calculated and normalized.

Define the maximum and minimum values:

$$Z^+ = (max\{z_{11}, z_{21}, \ldots, z_{n1}\}, max\{z_{12}, z_{22}, \ldots, z_{n2}\}, \ldots, max\{z_{1m}, z_{2m}, \ldots, z_{nm}\})$$
$$Z^- = (min\{z_{11}, z_{21}, \ldots, z_{n1}\}, min\{z_{12}, z_{22}, \ldots, z_{n2}\}, \ldots, min\{z_{1m}, z_{2m}, \ldots, z_{nm}\})$$

Define the distance between the i (i = 1,2,...,n) evaluation object and the maximum and minimum

$$D_i^+ = \sqrt{\sum_{j=1}^{m} (Z_j^+ - z_{ij})^2}$$

$$D_i^- = \sqrt{\sum_{j=1}^{m} (Z_j^- - z_{ij})^2}$$

Calculate the unnormalized score of the i-th (i = 1,2,...,n) evaluation object

$$S_i = \frac{D_i^-}{D_i^+ + D_i^-}$$

Since the indicators in this question all have their own weights, the weights are used to modify the formula. The revised formula is as follows, and ω represents the weight.

$$D_i^+ = \sqrt{\sum_{j=1}^{m} \omega_j (Z_j^+ - z_{ij})^2}$$

$$D_i^- = \sqrt{\sum_{j=1}^{m} \omega_j (Z_j^- - z_{ij})^2}$$

Obviously $0 \le S_i \le 1$, and the larger the S_i, the smaller the D_i^+, that is, the closer to the maximum value.

Use entropy method to find data weight

Since the various factors play different roles in the comprehensive evaluation, the weight of each indicator needs to be determined. The traditional analytic hierarchy process has a lot of subjectivity, so we choose the entropy method to determine the weight of each indicator. The weight of using the entropy method to calculate the weight is:

$$d_j = 1 + \frac{1}{ln\ n} \sum_{i=1}^{n} \left(\frac{\tilde{z}_{ij}}{\sum_{i=1}^{n} \tilde{z}_{ij}}\right) ln\quad n\left(\frac{\tilde{z}_{ij}}{\sum_{i=1}^{n} \tilde{z}_{ij}}\right)$$

$$\omega_j = \frac{d_j}{\sum_{j=1}^{m} d_j}$$

According to the above formulas, the score of each case is shown in Table 1.

Table1 Top 10 case scores

Forward distance	Negative distance	score
2.190	1.380	0.387
2.210	1.360	0.381
2.160	1.330	0.381
2.240	1.360	0.378
2.250	1.370	0.378
2.320	1.390	0.375
2.180	1.300	0.374
2.190	1.310	0.374
2.240	1.330	0.373
2.350	1.400	0.373

According to the score results, a box plot of 1460 scores is produced:

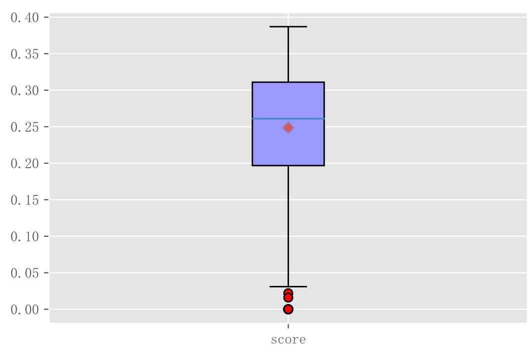

Figure1 Score boxplot

It can be seen from Figure 1 that the mental health scores of minors in this area are concentrated around 0.25, and they are in a relatively good stage of mental health. However, there are still many minors whose mental health is at a poor level, so certain measures still need to be taken to alleviate this situation.

3.USE K-MEANS CLUSTERING METHOD TO CLUSTER DATA

Aiming at the system that uses ten factors to assess the mental health of minors, after processing the data, the normalized scores are used for clustering, and these factors can be grouped into three categories.The mental health evaluation indicators with higher correlation degree are grouped into one category, which are roughly divided into relationship processing category, learning category, and personality category. The horizontal and vertical comparisons of the same set of data are carried out by drawing charts to draw more comprehensive and specific conclusions. A more accurate and clear overall control of the mental health of minors.

Because the requirement of this question is to establish an evaluation model, the data should be processed and analyzed. It is easy to know that the data given in this question does not quite meet the expectations of solving this problem, and it is necessary to process the relevant data of the ontology.

First, record the ten factors, and then find the offline score, total score and corresponding grade. When the data is analyzed and processed, it is not difficult to find that the offline score is related to the score of the ten factors, but it is not a simple addition and subtraction. The corresponding level is given by the offline score, and the total score It is given by the corresponding level, or can be regarded as the quantification of the level.

Second, establish two evaluation systems, one is determined by ten factors, and the other is determined by offline scores, total scores and corresponding levels.

3.1 MODEL CHARACTERISTICS ANALYSIS

First analyze the first model, use the total average score to assess the mental health of middle school students, then the total average score has only one piece of data, and you can rely on this data to analyze the mental health of middle school students. The analysis can be completed in one-to-one correspondence of the results. Use excel to research and analyze this data, so that you can see the relevant number of people at each level, and then the analysis is complete.

Table 2 Number of people and proportion at each level

grade	Number of people	Proportion
A	62	4.20%
B	778	53.20%
C	558	38.20%
D	41	2.80%
E	1	0.10%
F	20	1.30%

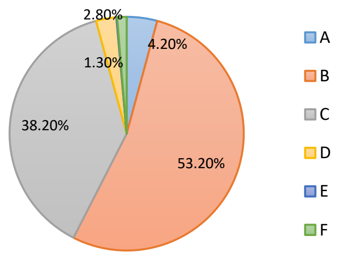

Figure 2 Proportion of people at each level

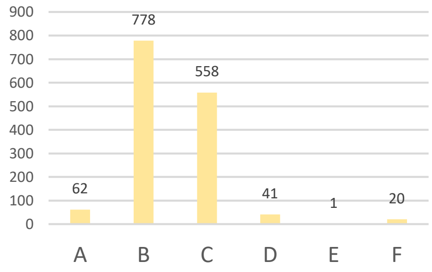

Figure 3 Number of people at each level

From the figure, it is found that there are more minors in grades B and C, the number of people in grade E is the least, almost none, and the number of people in grades A and D is relatively small, among which grade F is incomplete information and can be ignored.

It can be found that a large number of minors are still in a relatively good state of mind, and their life and studies are relatively stable. Despite some pressure and troubles, they can also make timely self-adjustment or seek professional institutions and personnel for counseling so as to return to their normal state. As for a small number of class D students, they may be faced with more troubles, easily feeling incomprehensible, lonely or even fearful, and urgently need to actively seek professional institutions and personnel for counseling.

For the second model, it is a model based on ten factors. There are ten columns of factor data. For this model, the TOPSIS algorithm with entropy weighting method can be used to solve the problem. This algorithm is superior to the analytic hierarchy process. The feature is that the weight is analyzed by the objective method, not as subjective as the analytic hierarchy process. Too strong, too bad persuasive.

3.2 CLUSTERING STEPS

Firstly,randomly select 3 objects as the initial cluster centers;then calculate the Euclidean distance of each data object to the cluster center $D(X_i, Z_{j(I)})$ (Where I is the number of iterations).According to this clustering result, use the mean value method to adjust the center points of the 3 clusters;this step starts with I=2, that is, it is not necessary to perform this step for the first time.

If it is $Z_{j(I)} \neq Z_{j(I-1)}$, use the adjusted center point to calculate the distance again.

After performing the K-means algorithm to cluster the data, the model has been perfected. This model aims to evaluate the mental health of minors based on the data provided. Now, only the data given by the TOPSIS analysis method is used for research, and the K-means algorithm clustering divides the obtained data into three categories. You can observe the distribution of data well for evaluation.

Use the K-means algorithm to solve the clustering problem, use Python for programming, cluster the processed large amount of data, find the cluster center, and visualize it, you can find the characteristics of the data and the distribution of the data. Figure 4 is the completed clustering diagram:

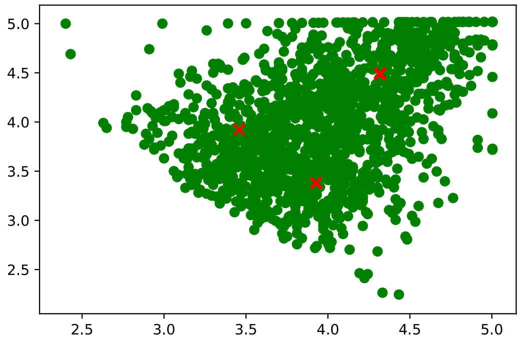

Figure 4 Cluster diagram

From Figure 4 and data analysis, it can be concluded that the mental state of most minors is relatively good, and the value of the cluster center also shows that the mental state of these minors is still very good. However, there are still some data that reflect that the mental state of a small number of minors is not very optimistic, and psychological counseling is urgently needed.

3.2 ANALYZE SINGLE-CATEGORY EVALUATION INDICATORS

As mentioned above ,this article use K-means clustering to group the evaluation indicators into three categories. Based on this, we classify the three categories of indicators into relationship processing, learning, and personality categories. The analysis is as follows:

Relation processing class :

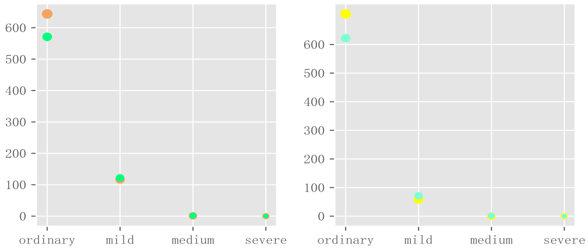

Figure 5 Statistics on the number of men and women dealing with relations

Figure 5 is a statistical chart of the number of men and women of the two mental health evaluation indicators of minor interpersonal relationship sensitivity and tension and emotional imbalance in the region. In each health level, the larger the bubble, the more the number, and the bubbles are distributed on the top. It is the number of boys, and the bubble below is the number of girls. From this figure, we can see that in the two psychological evaluation indicators of interpersonal sensitivity and tension, and emotional imbalance, boys are more serious than girls. The number of boys with sensitive psychological problems in interpersonal relationships accounted for 9.86% and girls accounted for 8.29%; The proportion of boys with emotional imbalance is 5.4%, and the proportion of girls is 3.97%. It can be seen that boys are more serious in these two indicators.

However, in the overall level, the normal level of interpersonal sensitivity and tension is as high as 83.2%, and the normal level of emotional imbalance is as high as 91.0%. It can be seen that the two psychological problems of minors in this area are not very serious. However, it is still necessary to strengthen the training of minors in handling interpersonal relationships and emotional stability, especially for boys.

Learning class:

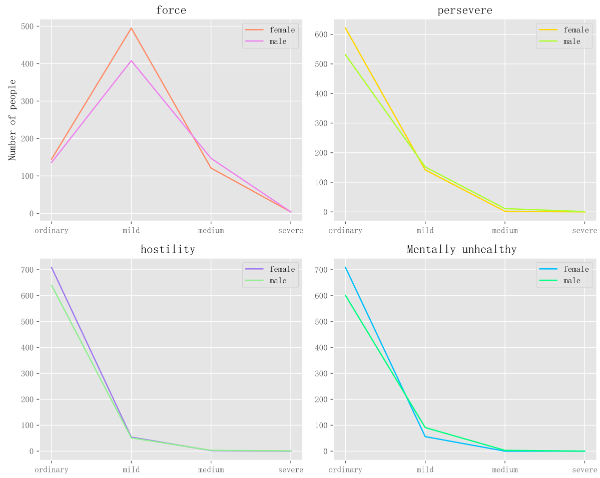

Figure 6 Statistics on the number of men and women in study

Figure 6 is a broken-line statistical chart of anxiety, learning pressure, depression, and maladjustment of minors in the region. The trend of the broken-line chart can reflect the changes in the number of minors in the region in terms of the severity of these psychological problems. Obviously, the number of minors with serious psychological problems is relatively small, but judging from each line chart, girls have more serious psychological problems than boys on these psychological evaluation indicators.

personality class:

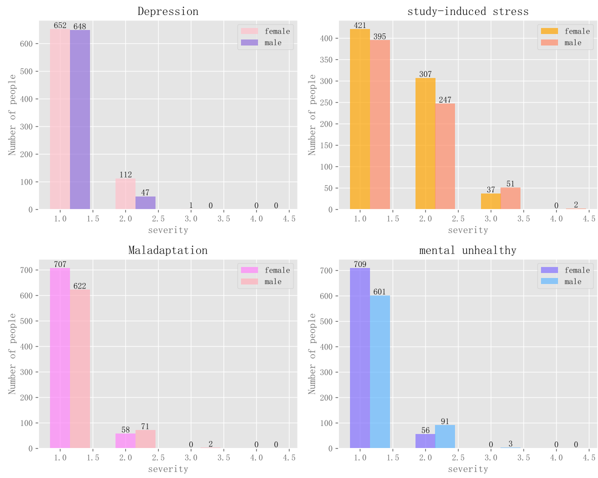

Figure 7 Statistics of the number of men and women in personality categories

Figure 7 is a histogram of obsessive-compulsive symptoms, paranoia, hostility, and psychological imbalance among minors in the region. From the above figure, it can be concluded that the mental problems of minors in this area are very serious in obsessive-compulsive symptoms. Such minors have obsessive-compulsive symptoms such as always thinking about unnecessary things, fearing poor test scores, and being paranoid. The number of symptoms is slightly higher than other indicators, and they have serious expectations for the perfection of life, but at the same time they are more likely to fall into their own thinking errors, and the proportion of male and female students in this psychological indicator is balanced, which represents the minorities in this area. The prevalence may also be more serious, requiring psychological counseling and psychological medical treatment for minors.

3.3 ANALYZE THE TOTAL SCORE AND OFFLINE SCORE

Due to the one-to-one correspondence between the total score and the offline score, here we analyze the situation of the total score, as shown in the figure:

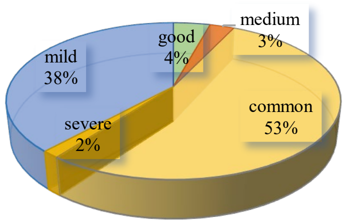

Figure 8 Statistics on the mental health of minors

Through analysis, we can see that the larger the total score, the better the mental health. From this, we can infer that the mental health severity is normal and belongs to the subjects with a total score of 4 points. It can be clearly understood from the figure that the mental health of minors in this area is at a relatively good stage. However, it is undeniable that minors in this area more or less have at least one psychological problem, which shows that this area may be an area where psychological problems are more common.

4. CONCLUSION

The mental health analysis made above shows that the mental health of this area is relatively good. However, combining the total score and various evaluation indicators, it is easy to see that there are almost all minors in this area. Mild psychological problems, from this level of analysis, the psychological situation in the area is not optimistic.Through statistical analysis of mental health evaluation indicators ,the average value of most of the mental health evaluation indicators is above 2 points, which belongs to the degree of mild psychological problems, and the standard deviation is relatively small. The psychological diagnosis and psychological medical treatment in this area are imminent.

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Analysis of the Economic Impact of the US Presidential Candidates on the United States and China

Yiyang Zhao[1], Xuanyang Lin[2], Ziyue Wang[2]*
[1]School of Materials Science and Engineering, North China University of Science and Technology, Tangshan, 063210, China;
[2]School of Yisheng college, North China University of Science and Technology, Tangshan, 063210, China
[*]Corresponding Author.

Abstract: This paper is mainly multifaceted generalized fitting model, economic change can be embodied into the national GDP, GDP, unemployment change, corresponding to financial, professional services, education and medical, manufacturing and other economic factors, through hierarchical analysis of the influence of the two candidates on China and America, and using gray prediction model to China's trade surplus in 2021, and by comparing different policies get the conclusion: facing the US, China should focus on improving China's trade surplus to get more profits.
Keyword: Situation policy; China-U.S. economy; AHP; Gray model and forecast

1.INTRODUCTION

The US presidential election is held every four years. 2020 is the year of US presidential election, with Republican candidate Donald Trump and Democratic counterpart Joe Biden running for president. The candidates of both parties have different political stands and administrative programs in finance and trade, economic and financial governance, and some other different key development areas (such as COVID-19 fighting measures, infrastructure, taxation, environmental protection, medical insurance, employment, trade, immigration, education, etc.).

The election of different candidates will shape different strategic patterns of global economic and financial development, and have a greater impact on the U.S. economy and the global economy (including China's economy). How will different policies affect American economy and Chinese economy? How should China respond?

2.PROBLEM ANALYSIS

This topic is mainly multi-faceted and broadly fitted model, economic change problems can be materialized as changes in national GDP, the title listed in this topic of many areas (such as COVID-19 combat measures, infrastructure, taxation, environmental protection, medical insurance, employment, trade, immigration, education, etc.) are economic factors, and economic indicators can be replaced by GDP, industrial GDP, unemployment rate and other indicators.

We require quantitative analysis of the possible impact of different candidates on the U.S. economy, we use finance, professional services, education and health care, and manufacturing as the components of GDP, build models through hierarchical analysis, target GDP, finance, professional services, education and health care, manufacturing as the criteria, Trump and Biden as the program layer, first of all, through the weighting of the criteria layer of the impact on the target layer, The combined analysis of Trump and Biden at the program level then shows the weight of each of the criteria layers, and then the impact of Trump and Biden on U.S. GDP, that is, the likely impact of Trump and Biden on the U.S. economy.

we use the transaction volume, exchange rate, trade surplus with the United States as the three factors affecting China's economy, throughit is necessary to quantitatively analyze the possible impact of different candidates on China's economy, the hierarchical analysis method to establish a model, the impact on China's economy as the target layer, transaction volume, exchange rate, trade surplus with the United States as the criterion layer, Trump and Biden as the program layer, first of all through the two china's policies to draw the weight comparison criteria layer of the impact on the target layer, The possible impact of Trump and Biden on China's economy can be derived by comparing the weighting of the program layer to the criterion layer.

The last is based on the results of the question to optimize China's response. As members of a Chinese think tank, we anticipate the future policies of the new US president and analyse its impact on the Chinese economy. Its essence is to amend the content of economic activities on the Chinese side, and the influence of the United States on China's economy in the second generational return problem, so that the "recommendation" becomes the disturbing data in the hierarchical analysis, making the weighting worth improving.

3.ESTABLISHMENT AND SOLUTION OF MODEL

3.1ANALYTIC HIERARCHY PROCESS

Basic idea of Analytic Hierarchy Process (AHP)

"The hierarchical analysis method breaks down the problem into different components according to the nature of the problem and the overall goal to be achieved, and combines the factors according to the interrelated influence of the factors and the affiliation to form a multi-level analysis structure model, which ultimately boils down the problem to the determination of the relatively important weights of the lowest level (the program for decision-making, measures, etc.) relative to the highest level (the overall goal) or the determination of the relative advantages and disadvantages of the order."

Basic Steps of AHP:

Building a hierarchical model

The goals of the decision, the factors considered (decision criteria), and the decision objects are divided into the highest, middle, and lowest levels according to their interrelations, graphing the hierarchy. The highest level refers to the purpose of decision-making and the problem to be solved. The lowest level refers to alternatives to decision-making. The middle layer refers to the factors to be considered and the criteria for decision-making. For the adjacent two layers, the upper layer is called the target layer and the lower layer is the factor layer.

Construct a judgment (pair comparison) matrix

In determining the weight between the factors at all levels, if it is only a qualitative result, it is often not easy to be accepted by others, so the consistent matrix method is proposed, that is, not to compare all the factors together, but to compare the two, when using a relative scale, in order to minimize the difficulties of different factors to compare with each other, in order to improve accuracy. For example, if a criterion is used, the programmes under it are compared in two or two and graded according to their importance. Is the result a_{ij} of comparing i with j importance. A matrix by two comparisons is called a judgment matrix. The judgment matrix is of the following nature:$a_{ij} = \frac{1}{a_{ij}}$

Hierarchical single sorting and its consistency test

The characteristic vector corresponding to determining the maximum feature root λ_{max} of the matrix is recorded as W after normalization (so that the summation of the elements in the vector is equal to 1). The element of W is the sort weight of the relative importance of the same hierarchical factor to a factor at the next level, a process called hierarchical single sorting. Whether the hierarchical single order can be confirmed requires consistency test, which refers to determining the allowed range of insistency with A. Where the only non-zero characteristic root of the n-order consistent array is n;The maximum characteristic root $\lambda \geq n$ of n-order positive and anti-array A , A is the consistent matrix when and only when $\lambda = n$.

Due to λ continue to depend on a_{ij},The λ is more than the ratio of n, the more serious the insistency of A, the smaller the CI, indicating greater consistency. The greater the degree of insemination, the greater the error of judgment caused by using the characteristic vector corresponding to the maximum feature value as the right vector to influence the upper level of a factor by the comparative factor. Thus, the insopass of A can be measured by the size of the value of the value of the value of the value of the value of the value of the value of the value of the value of the value of the value of the Define the consistency metric:$CI = \frac{\lambda - n}{n-1}$

CI-0, with complete consistency; CI is much closer to 0, with satisfactory consistency; The larger the CI, the more serious the uniformity is .".

To measure the size of CI, a random consistency indicator RI is introduced:

$$RI = \frac{CI_1 + CI_2 + \ldots + CI_n}{n}$$

Among them, the random consistency indicator RI is related to the order of the judgment matrix, in general, the larger the matrix order, the greater the probability of random deviation of consistency

Considering that the deviation of consistency may be caused by I and with random reasons, it is necessary to compare the C-machine consistency index RI in order to verify whether the matrix is satisfactory, and to arrive at the test coefficient CR, the formula is as follows:

$$CR = \frac{CI}{RI}$$

In general, if CR <0.1, the judgment matrix is considered to pass the consistency test, otherwise there is no satisfactory consistency.

The overall order of the hierarchy and its consistency test

Calculates the weight of the relative importance of all factors at a level to the highest level (total goal), called the total hierarchy sort. This process is carried out from the highest level to the lowest level.

3.2MODELS SOLUTION

The main components of the economic factors are extracted and modeled, as shown in figure 1.

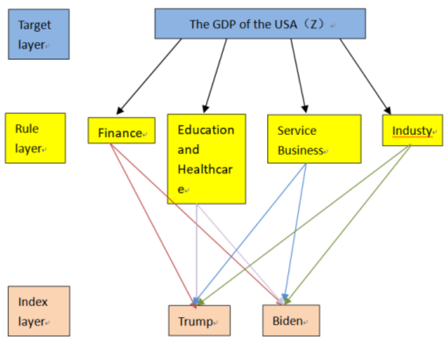

Figure 1. The main components of the economic factors

Key of factors extraction by AHP

The main components affecting the economy were extracted and the proportion of finance, professional services, education and health care, manufacturing, etc. from 2008 to 2019 was analyzed,as shown in Table 1.

Table 1.The weight scale

Ans=			
1.0000	3.0000	3.0000	7.0000
0.3333	1.0000	1.0000	5.0000
0.3333	1.0000	1.0000	5.0000
0.1429	0.2000	0.2000	1.0000

Based on the economic impact, A1, A2, A3, A4 and so on are used as independent variables.

Building a judgment matrix and consistency test.

Table 2.The weight of each factor

Based on the economic impact, A1, A2, A3, A4 and so on are used as independent variables. By entering the weight of each factor, we can get the scale,as shown in Table 2.

Rule layer	weight
A1	0.5281
A2	0.2100
A3	0.2100
A4	0.0519

$$CI = \frac{\lambda - n}{n-1} = 0.0245$$

$$RI = \frac{CI_1 + CI_2 + \ldots + CI_n}{n} = 0.0891$$

Because of

$$CR = \frac{CI}{RI} = 0.0275 < 0.1$$

It can be concluded that the model is established with satisfactory consistency.

The overall order of the hierarchy and its consistency test,as shown in Table 3.

Table 3. The consistency test

Ans=

1.0000	5.0000	7.0000	2.0000
0.2000	1.0000	0.5000	0.2000
0.1429	2.0000	1.0000	0.2000
0.5000	5.0000	5.0000	1.0000

Ans=

1.0000	3.0000	5.0000	7.0000
0.3333	1.0000	3.0000	5.0000
0.2000	0.3333	1.0000	0.5000
0.1429	0.2000	2.0000	1.0000

From the above weights, you can sort the top levels in general,as shown in Table 4.

Table 4.The top levels

Ruler layer	Weight	Ruler layer	Weight
A1	0.5144	A1	0.5646
A2	0.0678	A2	0.2690
A3	0.0877	A3	0.0768
A4	0.3301	A4	0.0896

Index layer	CI	CR	t
B1	0.0454	0.0511	4.1363
B2	0.0732	0.0822	4.2195

Another consistency test is performed through the weights of Table 4.

Both CR less than 0.1 can pass the consistency test. It can be concluded from the factors of their respective economic influences that Trump's manufacturing industry is relatively outstanding, which is of great help to the development of American manufacturing industry. Biden's relatively outstanding health care and education has been of great help to the development of education and health care in the United States.

In Obama 's economic policies, China-related economic policies:

China is called upon to expand domestic demand, reduce the U.S. trade deficit with China, and protect the U.S. working class.

Tough calls for an accelerated appreciation of the RMB.

China is called upon to reform its intellectual property system.

China's textile exports to the United States should be closely monitored.

According to the above, the transaction volume, trade surplus and exchange rate are chosen as the actual indicators of China's economic situation.

The main component extraction and modeling of the economic factors were carried out,as shown in figure 2.

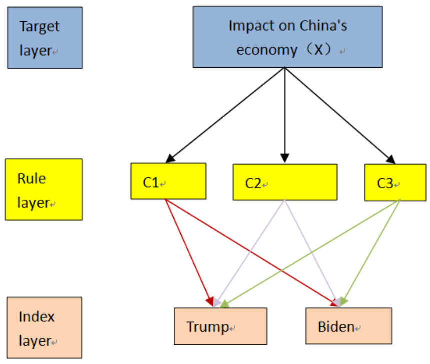

Figure 2.The main components

Key factors extraction by AHP

The main components of the economic factors were extracted and the volume of transactions, trade surplus and exchange rate components from 2008 to 2019 were analyzed, as shown in Table 5.

Table 5.The consistency test

Ans=

1.0000	3.0000	0.3333
0.3333	1.0000	0.2000
3.0000	5.0000	1.0000

Based on the economic impact, C1, C2, C3 and so on are used as independent variables.

Building a judgment matrix and consistency test,as shown in Table 6.

Table 6. Judgment matrix and consistency test

Ruler layer	weight
C1	0.2583
C2	0.6370
C3	0.1047

Starting from the economic impact, C1, C2, C3 and so on are independent variables, which can be derived by entering the right of each factor:

$$CI = \frac{\lambda - n}{n-1} = 0.0193$$

$$RI = \frac{CI_1 + CI_2 + \ldots + CI_n}{n} = 0.5216$$

Because of:

$$CR = \frac{CI}{RI} = 0.0370 < 0.1$$

It can be concluded that the model is established with satisfactory consistency

The overall order of the hierarchy and its consistency test,as shown in Table 7.

Table 7.The consistency test

B1			B2		
1.0000	0.5000	0.3333	1.0000	2.0000	0.2000
2.0000	1.0000	0.5000	0.50000	1.0000	0.2000
3.0000	2.0000	1.0000	5.0000	5.0000	1.0000

From the above weights, you can sort the top levels in general,as shown in Table 8.

Table 8.The top levels in general

Ruler layer	Weight	Ruler layer	Weight
C1	0.5396	C1	0.3522
C2	0.2970	C2	0.5591
C3	0.1634	C3	0.0887

Another consistency test is performed through the weights of the two,as shown in Table 9.

Table 9.Another consistency test`s weights of the two

Index layer	CI	CR	t
B1	0.0046	0.0088	3.0092
B2	0.0268	0.0516	3.0536

Both CR less than 0.1 can pass the consistency test. It can be concluded from the factors of their respective economic influence that Trump's trade volume with China has a greater impact; Biden has a big impact on China's trade surplus.

.Basic idea of Grey Models(GM)

The gray model is to establish the gray micro-prediction model through a small amount of incomplete information, and to make a fuzzy long-term description of the development law of things.

Basic Steps of GM

The raw data is processed into a number of generations;

After revising the residuals (the difference between the model calculation value and the actual value), a differential equation model is established;

Analysis based on correlation convergence;

The data obtained from the GM model must be restored by inverse generation before it can be used.

Using the method of "five-step modeling (system qualitative analysis, factor analysis, preliminary quantification, dynamic quantization, optimization), a differential equation model gm (1,1) prediction model is established.

In response to possible U.S. measures, China must respond forcefully to the war and prevent it in the long term. Trade should be more and more tough on the United States, China must maintain an unsopply attitude, actively communicate negotiations and timely retaliatory counter-attacks staggered, the domestic need to stabilize public opinion and market confidence, external needs to seek international organizations and other joint economic forces, and must accelerate the pace of supply-side reform: in the long run, the financial sector must speed up the liberalization of China's financial system, strengthen the international status of the RMB, and accompany the financial regulatory system's flexibility, And moderate financial counter-measures: Science and technology must speed up the reform of scientific research, education system and personnel education system: and continue to increase the "Belt and Road" and other multilateral trade construction to speed up China's trade liberalization process.

According to question two, the U.S. side focuses on narrowing the trade deficit between the U.S. and China, and actively implements a series of policies aimed at curbing China's economic development. Therefore, China should immediately seek countermeasures to weaken the U.S. attempt to interfere with China's economic development through a series of policies.

According to the weighted value obtained in question two, it is very likely that China will take the trade surplus as a breakthrough and propose countermeasures to deal with the economic impact, so the following model is established, as shown in figure 3.

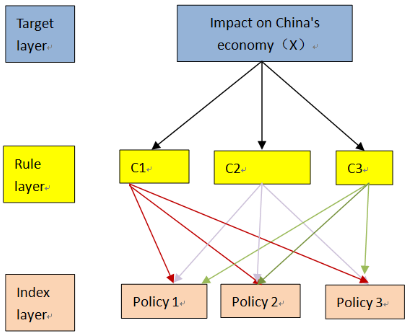

Figure 3.China`s main components

Key factors extraction by AHP

Extract the main components of the factors affecting China's economy and analyze the volume of transactions, trade surplus and exchange rate from 2008 to 2019,as shown in Table 10

Table 10. China's economy and analyze the volume of transactions

Ans		
1.0000	4.0000	0.5000
0.2500	1.0000	0.1429
2.0000	7.0000	1.0000

Based on the practicality of the exploration policy, C1, C2, C3 and so on are the independent variables.

Building a judgment matrix and consistency test,as shown in Table 11.

Table 11.Judgment matrix and consistency test

Ruler layer	Weight
C1	0.1870
C2	0.7153
C3	0.0977

Starting from the policy influence, C1, C2, C3 and so on are independent variables, which can be drawn by entering the right of each factor:

$$CI=\frac{\lambda-n}{n-1}=9.9075*10^{-4}$$

$$RI=\frac{CI_1+CI_2+...+CI_n}{n}=0.5214$$

Because of :

$$CR=\frac{CI}{RI}=0.0019<0.1$$

It can be concluded that the model is established with satisfactory consistency

Fitting out the equations that can represent the values of each policy authority:

$$\begin{cases} y_{\Omega}=k_1x_2+k_2x_3+k_3x \\ k_1+k_2+k_3=10 \end{cases}$$

PS:k1,k2,k3 are given different and reasonable assignments according to the emphasis of China's proposed policies, and the power form of argument x is to highlight the stability of the three indicators in Question II, which is defined as the trade surplus between China and the United States in 2021.

Policy 1: Focus on increasing the volume of goods trade between China and the United States Because in the short term, it is not possible to substantially increase the scientific and technological content of export

commodities, so only to expand the volume of goods exports to increase trade volume. However, according to the New Economic Policy of the United States, large imports of goods from other countries will lead to tariff retaliation by the United States and the re-identification of China as a "currency manipulator", which will have a more negative impact on the trade surplus and exchange rate average of the United States.
Therefore, the coefficient is defined accordingly:

$$\begin{cases} k_1 = 7 \\ k_2 = 1 \\ k_3 = 2 \end{cases}$$

Get the equation:

$$y_1 = 7x_2 + x_3 + 2x$$

So that

$$y_1 = 95{,}339{,}541{,}120$$

Policy 2: Focus on increasing China's trade surplus with the U.S. Since 2008, China's trade surplus with the U.S. has been on a growing trend, but the U.S. side has reduced dumping of U.S. goods by asking China to expand domestic demand; According to the above-mentioned problems facing China, China can take a "backwards" approach, actively communicate with the U.S. government and U.S. enterprises, win time at the same time, strive for greater market space, and accurately position the U.S. market demand, increase the proportion of rigid demand for goods, reasonable control of the export rhythm, combined with the background of the outbreak of the external conversion of the export commodities, such as medical protective equipment and health care sales to the United States, grasp the opportunity for the U.S. president's transition, and actively consult with the new government, Reach an agreement of friendship and mutual assistance and strive to make room for further expansion of the trade surplus in the situation.
Therefore, the coefficient is defined accordingly:

$$\begin{cases} k_1 = 3 \\ k_2 = 4 \\ k_3 = 3 \end{cases}$$

Getting the equation:

$$y_2 = 3x_2 + 4x_3 + 3x$$

So that

$$y_2 = 380{,}836{,}932{,}750$$

Policy 3: Focus on exchange rate adjustment to win greater dumping opportunities.
If the Chinese side through currency devaluation to win more markets in the United States, this will gain some benefits in a short period of time, but will lead to the United States trade protection policy, resulting in large-scale tariff increases, resulting in China's loss of more future markets.
Therefore, the coefficient is defined accordingly:

$$\begin{cases} k_1 = 3 \\ k_2 = 1 \\ k_3 = 6 \end{cases}$$

Getting the equation:

$$y_3 = 3x_2 + x_3 + 6x$$

So that

$$y_3 = 95{,}256{,}165{,}960$$

On this basis, it can be concluded that the superiority of option 2 is much greater than that of option i and option 3, so option 2 is a better scheme that China can take.

4.THE EVALUATION OF MODEL

4.1The Evaluation of AHP

Strength: The idea of the system is not to cut off the influence of each factor on the result, and the weight setting of each layer in the hierarchical analysis method will eventually directly or indirectly affect the result, and the degree of influence of each factor in each level on the result is quantified, very clear. The calculation is simple, and the results are simple and clear, and easy for decision makers to understand and maste.
Weekness: There is less quantitative data, more qualitative components, and less convincing. When there are too many indicators, the statistics are large and the weight is difficult to determine.

4.2The Evaluation of Gray Forecast Model

Strength: A large number of samples are not required, samples do not need to be distributed regularly, and the calculation workload is small.
Weekness: The accuracy is low.

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Minor Mental Health Assessment Model

Haoyu Zhou[1,2], Yiming Xu[3,4], Si Luo[2]
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]Collge of Electrical Engineering, North China University of Science and Technology, Tangshan 063210, China;
[3]Energy Saving and Emission Reduction Lab, North China University of Science and Technology, Tangshan 063210, China;
[4]College of Architectural Engineering, North China University of Science and Technology, Tangshan 063210, China;

Abstract: In a rapidly developing modern society, more young people need to be cared about their growth and their hearts need to be cared for. In order to deal with important mental health challenges related to the future of the country and the nation, we urgently need a quick and accurate method to evaluate the mental health of minors, so as to formulate and adopt more targeted measures. Therefore, this paper constructs a new evaluation system by analyzing and integrating the mental health survey questionnaires for middle school students in a certain area, so as to reasonably and accurately evaluate the mental health of a certain minor.

Key words: Factor analysis; grey relational analysis; SPSS data processing; TOPSIS; multiple linear regression

1.SPSS DATA PREPROCESSING--FACTOR ANALYSIS

According to the mental health survey questionnaire for middle school students, the sixty questionnaires are divided into ten indicators to describe the existing mental health status of minors. They are obsessive-compulsive symptoms, paranoia, hostility, interpersonal tension and sensitivity, depression, anxiety, learning pressure, Maladjustment, emotional imbalance, psychological imbalance. Before establishing the juvenile mental health evaluation system, we reduced the dimensions of these ten indicators and converted them to a few representative indicators for analysis. For this we use factor analysis algorithms. Factor analysis can find hidden and representative factors among many variables [1]. Putting variables with higher correlation into the same category, each category represents a basic structure, can reduce the number of variables, and can also test the hypothesis of the relationship between the variables.

A total of 1456 of the 1500 questionnaires are valid, and 10 indicators can form a sample matrix of 1456*10. That is, there are 10 factor variables and 1456 original variables.

Among them, F1, F2, F3, …, Fn represent factor variables, x1, x2, x3, …, xn represent original variables, and ε represents special factors. The factor analysis model is:

$$X = AF + \varepsilon$$

$$\begin{cases} x_1 = a_{11}F_1 + a_{12}F_2 + \cdots + a_{1m}F_m + a_1\varepsilon_1 \\ x_2 = a_{12}F_1 + a_{22}F_2 + \cdots + a_{2m}F_m + a_2\varepsilon_2 \\ \cdots \\ x_n = a_{n1}F_1 + a_{n2}F_2 + \cdots + a_{nm}F_n + a_n\varepsilon_n \end{cases}$$

In order to eliminate the influence of dimension and order of magnitude, SPSS software is used to standardize the original data, and convert it into dimensionless data with a mean of 0 and a variance of 1, and finally obtain the descriptive statistical results and factor analysis results.

Chart 1 Color chart

	A	B	C	D	E	F	G	H	I	J
A	1	0.216	0.039	0.111	0.079	0.07	0.056	-0.026	0.019	0.02
B	0.216	1	0.218	0.273	0.115	0.061	0.027	0.114	0.102	0.036
C	0.039	0.218	1	0.214	0.213	0.224	0.038	0.069	0.173	0.057
D	0.111	0.273	0.214	1	0.346	0.32	0.137	0.184	0.166	0.116
E	0.079	0.115	0.213	0.346	1	0.517	0.188	0.163	0.19	0.009
F	0.07	0.061	0.224	0.32	0.517	1	0.228	0.13	0.246	0.08
G	0.056	0.027	0.038	0.137	0.188	0.228	1	0.292	0.302	0.073
H	-0.026	0.114	0.069	0.184	0.163	0.13	0.292	1	0.293	0.215
I	0.019	0.102	0.173	0.166	0.19	0.246	0.302	0.293	1	0.195
J	0.02	0.036	0.057	0.116	0.009	0.08	0.073	0.215	0.195	1

(A: Forced symptoms B:paranoid C:hostile D:Interpersonal tension and sensitivity E:depression F:anxiety G:Academic pressure H:To adapt to the bad I:Emotional imbalance J:Mental imbalance)

As shown in the figure, the correlation coefficient between the variables can be used to visually describe the relationship between the variables using a chromaticity diagram. We believe that a correlation coefficient greater than 0.3 is better. There is a greater relationship between interpersonal tension and sensitivity, depression, and anxiety, and between emotional imbalance and learning pressure.

Chart 2 Cumulative variance contribution rate

composition	Initial eigenvalue			Extract the sum of squares of loads		
	A total of	Percentage of variance	The cumulative %	A total of	Percentage of variance	The cumulative %
1	2.515	25.153	25.153	2.515	25.153	25.153
2	1.325	13.253	38.406	1.325	13.253	38.406
3	1.148	11.478	49.884	1.148	11.478	49.884
4	0.98	9.795	59.679	0.98	9.795	59.679
5	0.875	8.748	68.427	0.875	8.748	68.427
6	0.814	8.138	76.564	0.814	8.138	76.564
7	0.655	6.546	83.111	0.655	6.546	83.111

According to the SPSS processing results, the appropriateness of KMO sampling is 0.713, and the Barlett's test significance is 0.000, which is less than 0.05. It shows that the null hypothesis is rejected at the 95% confidence level, the data passed the KMO test and the Barlett test, and the original data can be processed by factor analysis [2]. Then the eigenvalues and eigenvectors are calculated and the principal components whose cumulative contribution rate of variance reaches about 80% are selected. The cumulative contribution rate of the variance of the first 7 components reached 83.111%, and the information contained in the sample was basically extracted, so it is more appropriate to select the first 7 as the common factor.

In order to find the actual meaning of each principal factor, we rotate the component matrix. As follows:

Chart 3 Rotation component matrix

	1	2	3	4	5	6	7
Forced symptoms	0.056	-0.007	0.142	0.041	-0.029	0.959	0.003
paranoid	-0.050	0.033	0.858	-0.064	0.105	0.187	0.166
hostile	0.171	0.014	0.129	0.028	0.063	0.002	0.963
Interpersonal tension and sensitivity	0.548	0.089	0.602	0.151	-0.024	-0.049	-0.041
depression	0.823	0.120	0.085	-0.058	0.013	0.025	0.093
anxiety	0.823	0.043	-0.053	0.050	0.183	0.061	0.117
Academic pressure	0.192	0.707	-0.138	-0.151	0.345	0.191	-0.034
To adapt to the bad	0.050	0.837	0.191	0.243	-0.003	-0.143	0.045
Emotional imbalance	0.137	0.167	0.102	0.135	0.921	-0.042	0.070
Mental imbalance	0.017	0.090	-0.005	0.956	0.113	0.042	0.026

From the results of the rotating component matrix, it can be seen that the first public factor has a greater load on interpersonal tension and sensitivity, depression, and anxiety, so it mainly represents anxiety; the second public factor has a higher load on learning pressure and maladjustment. It is large, so it mainly represents the stress response; the third public factor has a greater load on paranoia, interpersonal tension and sensitivity, so it represents the ability to deal with relationships; the fourth, fifth, sixth, and seventh public factors are in the psychological The load on imbalance, emotional imbalance, obsessive-compulsive symptoms, and hostility is significantly higher than other factors, so they mainly represent psychological imbalance, emotional imbalance, obsessive-compulsive symptoms, and hostility, respectively.

Component coefficient matrix:

Chart 4 Component coefficient matrix

	composition						
	1	2	3	4	5	6	7
Forced symptoms	0.676	0.418	0.351	0.190	0.356	0.117	0.262
paranoid	0.231	-0.557	0.441	-0.337	-0.356	0.359	0.269
hostile	-0.608	0.140	0.539	0.421	0.071	0.367	0.058
Interpersonal tension and sensitivity	0.042	0.301	-0.127	-0.403	0.067	0.674	-0.520
depression	0.323	-0.318	-0.221	0.710	-0.234	0.264	-0.343
anxiety	-0.118	-0.268	-0.492	0.040	0.492	0.406	0.513
Academic pressure	-0.024	0.482	-0.291	0.066	-0.663	0.185	0.452
To adapt to the bad	0.676	0.418	0.351	0.190	0.356	0.117	0.262
Emotional imbalance	0.231	-0.557	0.441	-0.337	-0.356	0.359	0.269
Mental imbalance	-0.608	0.140	0.539	0.421	0.071	0.367	0.058

From the component coefficient matrix, the expressions of the seven common factors are as follows:

$$F_1 = 0.676X_1 + 0.231X_2 - 0.608X_3 + \cdots + 0.231X_9 - 0.608X_{10} \quad (3)$$

$$F_2 = 0.418X_1 - 0.557X_2 - 0.140X_3 + \cdots - 0.557X_9 - 0.140X_{10} \quad (4)$$

$$F_7 = 0.262X_1 + 0.269X_2 + 0.058X_3 - \cdots + 0.269X_9 + 0.058X_{10} \quad (5)$$

2.GREY RELATIONAL ANALYSIS ALGORITHM TO DETERMINE THE WEIGHT

Grey relational analysis [3] is mainly used in a comprehensive system with many factors, and the degree of influence of different factors on the system can be judged by calculating the grey relational degree. The process is to establish a parent sequence that changes with time in accordance with certain rules, take each evaluation object as a sub-sequence, and find the degree of correlation between each sub-sequence and the parent sequence.

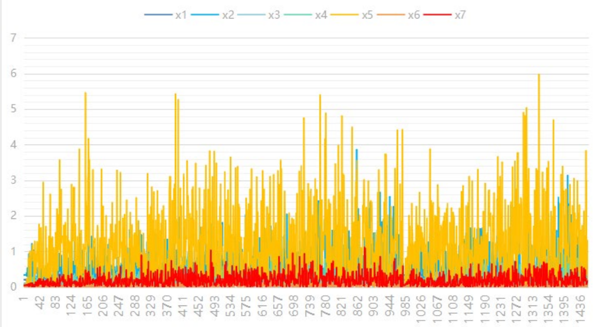
Because these elements of ours are indicators of the same nature and dimension, they do not need to be normalized, and we focus on their changes and trends. The line chart drawn is:

For reference series $x_0(k)$, comparison series $x_1(k), x_2(k), \cdots, x_i(k)$, there are

$$r\left(x_0(k), x_i(k)\right) = \frac{\min_i \min_k \Delta_{0i}(k) + \xi \max_i \max_k \Delta_{0i}(k)}{\Delta_{0i}(k) + \xi \max_i \max_k \Delta_{0i}(k)} \quad (6)$$

$$r(x_0, x_i) = \frac{1}{n}\sum_i^n r\left(x_0(k), x_i(k)\right) \quad (7)$$

$r(x_0, x_i)$ is the degree of relevance of the x_0 [4]. The reference sequence is the student's questionnaire scores, and the comparison sequence is the seven principal component indicators. The correlation coefficient diagram after analysis is as follows:



Substituting 7 irrelevant index variables for the original factors, based on the above results, using gray correlation analysis, the gray correlation degree is:

Chart 5 Grey relational degree

	x1	x2	x3	x4	x5	x6	x7
Grey correlation degree	0.9356	0.851	0.9432	0.9317	0.7457	0.9889	0.9401

$$z = 0.9356F_1 + 0.8510F_2 + 0.9432F_3 + 0.9317F_4 + 0.7457F_5 + 0.9889F_6 + 0.9401F_7 \quad (8)$$

Through the above formula, it is found that the questionnaire scores are all significantly positively correlated with the seven indicators. The gray correlation degree is normalized, and the data obtained is the weight corresponding to each factor:

Chart 6 Weight

	x1	x2	x3	x4	x5	x6	x7
Weight	0.148	0.134	0.149	0.147	0.118	0.156	0.148

3.CALCULATE TOPSIS SCORE

Through analysis, these seven indicators are all extremely small indicators. We normalize it and calculate the score. Finally, the score is calculated and normalized.

Maximum value:

$$Z^+ = (max\{z_{11}, z_{21}, \cdots, z_{n1}\}, \cdots, max\{z_{17}, z_{27}, \cdots, z_{n7}\}) \quad (9)$$

Minimum value:

$$Z^- = (min\{z_{11}, z_{21}, \cdots, z_{n1}\}, \cdots, min\{z_{17}, z_{27}, \cdots, z_{n7}\}) \quad (10)$$

Define the distance between the i-th (i=1,2,...,n) evaluation object and the maximum and minimum values as:

$$D_i^+ = \sqrt{\sum_{j=i}^{7} v_j \left(z_j^+ - z_{ij}\right)^2} \quad D_i^- = \sqrt{\sum_{j=i}^{7} v_j \left(z_j^- - z_{ij}\right)^2} \quad (11)$$

The TOPSIS scores corresponding to the seven health indicators are:

$$S_i = \frac{D^-{}_i}{D^+{}_i + D^-{}_i} \quad (12)$$

4.USE MULTIPLE LINEAR REGRESSION TO FIND THE EVALUATION EQUATION

The result of the Durbin-Watson test is 1.892. Generally speaking, the Durbin-Watson test value is distributed between 0-4, and the closer to 2, the greater the probability that the observations are independent of each other. That is, the observations of simple linear regression in this study are mutually independent. And R and R2 are both close to 1, indicating that the regression model has a high goodness of fit. And the test corresponds to P=0.000<0.05, that is, the regression equation is considered meaningful within the 95% confidence interval.

Chart 7 Durbin-Watson

Model	R	R2	Adjusted R2	Standard estimation error	Durbin-Watson
1	0.998a	0.997	0.997	0.00295	1.892

Since the independent variable and the dependent variable are linearly correlated and pass the significance test [5] (within the 95% confidence interval), we use multiple linear regression to solve the correlation coefficients of each indicator, and we get a result with 7 main factors. Multiple regression equation of component index. The above seven principal component indicators are used as independent variables, and the TOPSIS scores of each factor are used as dependent variables. Predict the coefficients of each index. f_i is the independent variable, y is the dependent variable, and satisfies the following linear relationship:

$$y_i = \beta_0 + \sum_j \beta_j f_{ij} + u_i, i = 1,2, \ldots n, j = 1,2, \ldots P \quad (13)$$

Among them $\beta_0, \beta_1 \cdots \beta_p$ is the regression coefficient, u_i is the disturbance term that cannot be observed and satisfies certain conditions [6].

The predicted value is

$$\hat{y}_i = \hat{\beta}_0 + \sum_j \hat{\beta}_j f_{ij} \quad (14)$$

$$\hat{\beta}_0, \hat{\beta}_1, \ldots, \hat{\beta}_P = \underset{\beta_0, \beta_1, \ldots \beta_P}{argmin} \left(\sum_{i=1}^{n} (y_i - \hat{y}_i)^2 \right)$$

$$= \underset{\beta_0, \beta_1, \ldots \beta_P}{argmin} \left(\sum_{i=1}^{n} \left(y_i - \hat{\beta}_0 - \sum_j \hat{\beta}_j f_{ij}\right)^2 \right) \quad (15)$$

$$\hat{\beta}_0, \hat{\beta}_1, \ldots, \hat{\beta}_p = \underset{\beta_0, \beta_1, \ldots, \beta_p}{argmin} \left(\sum_{i=1}^{n} (u_i)^2\right) \quad (16)$$

$$\hat{u}_i = y_i - \hat{\beta}_0 - \sum_j \hat{\beta}_j f_{ij} \quad (17)$$

Among them, we will call u_i the residual, which represents the numerical difference between the actual value and the predicted value.

Based on the above analysis, we define $f_1, f_2, f_3 \ldots f_7$ as worry, stress response, relationship processing ability, psychological imbalance, emotional imbalance, obsessive-compulsive symptoms, and hostility. The constructed model for evaluating the mental health of adolescents is as follows:

$$y = \beta_0 + \beta_1 f_1 + \beta_2 f_2 + \beta_3 f_3 + \beta_4 f_4 + \beta_5 f_5 + \beta_6 f_6 + \beta_7 f_7 \quad (18)$$

After solving the index coefficients, the regression equation obtained is as follows:

$$y = 0.741 - 0.045f_1 - 0.048f_2 - 0.01f_3 - 0.016f_4 - 0.04f_5 - 0.05f_6 - 0.013f_7 \quad (19)$$

The evaluation of students' mental health is based on the following criteria. Students whose y-value is within the 90% confidence interval of the average TOPSIS score are defined as average, and y-values higher than 1.1 times the average are defined as stable and lower than the average. 0.9 times is defined as severe, and the quantitative stable, normal, and severe are 3, 2, and 1, respectively. Stability means that the student's current mental state, life and learning state is very good and in a stable state. There is no special psychological problem; it generally means that the student is currently under psychological pressure and is easily affected by external factors; severely means that the student may be facing more troubles at present, and it is easy to feel incomprehensible, lonely, or even fear.

$$J = \begin{cases} 3, y_i > 1.1y_{mean} \\ 2, 0.9y_{mean} < y_i < 1.1y_{mean} \\ 1, y_i < 0.9y_{mean} \end{cases} \quad (20)$$

Among them, J represents the evaluation criteria, y is the score value solved by the model established in this paper, and y_{mean} is the average value of the score calculated by TOPSIS. The specific evaluation criteria are as follows:

Chart 8 Evaluation Criteria

stable	general	serious
Y>0.5957	0.595≥Y≥0.4874	Y>0.4874

The established model can calculate the student's mental health level score, and then according to the level of judgment above the chapter, the student's mental health level can be given, namely stable, normal, and severe.

In order to verify the model, we randomly selected the data of 15 students, and compared the scores calculated by the model with the Topsis scores of these 15 students. The comparison results are as follows:

Figure 1 Comparison of TOPSIS score and regression equation score

It can be seen from the figure that the mental health scores of 15 students are basically consistent with the scores and trends calculated by the TOPSIS method, which verifies the accuracy of the evaluation model.

5.ANALYSIS OF VARIANCE TO DETERMINE ABNORMAL INDICATORS

According to the questionnaire description and data description, establish a comprehensive evaluation standard suitable for self-evaluation. Those with a comprehensive score below 2 are rated as A, those with a score of 2 to 3 are rated as B, those with a score of 3 to 4 are rated as C, and those with a score of 4 to 5 are rated as D. A: good; B: moderate; C: heavy; D: severe.

Index: $U = \{u_1, u_2 \cdots u_7\}$ (21)

Weights: $V = \{v_1, v_2 \cdots v_7\}$ (22)

Overall: $Y = \sum_{i=1}^{7} u_i v_i$ (23)

In addition to comprehensive indicators, we should also pay attention to the anomalies of certain indicators. It can be seen from the weight analysis that the importance of each indicator is basically the same. In order to reduce the workload and conduct targeted analysis, the overall analysis of variance can be performed for each student in the two levels of B and C.

$$S_j = \sum_{i=1}^{7} (u_i - u)^2 \quad (24)$$

After that, the indicators of the students with larger variances are sorted and sorted, the abnormal indicators are determined and targeted measures are taken.

The data of the students in this area is brought into the model to calculate the scores, and then the grades are divided according to the evaluation criteria. The results of the classification are as follows:

According to the score range, we divide the psychological status of students into three levels:

Stable: 0.6~1 Normal: 0.49~0.6 Severe: 0.38~0.49.

Chart 9 Number of students in each level

Grade	Stable	General	Serious
Number of people	182	1063	188
Proportion	12.7%	74.2%	13.1%

86.9% of the minors in this area have relatively stable psychological conditions, but only about one-seventh of them are at a stable level. There are some problems in one or some aspects, so it is necessary to analyze the indicators at the general level. In this regard, we perform analysis of variance on each indicator, as follows:

Chart 10 Descriptive statistics of three sets of data

		x1	x2	x3	x4	x5	x6	x7	Regression score
Min	excellent	-0.17	-1.11	0.82	0.15	-2.06	3.15	0	0.6
	good	0.29	-0.91	0.73	0.02	-1.94	3.32	0.41	0.49
	poor	1.02	-0.18	1.31	0.63	-1.31	3.75	0.81	0.38
Max	excellent	2.54	1.4	4.69	2.08	0.36	6.34	3.09	0.7
	good	3.23	2.11	4.39	2.9	1.18	6.63	3.61	0.6
	poor	3.76	2.52	4.01	2.5	1.28	6.37	3.41	0.49
Mean	excellent	1.241	0.234	2.045	1.127	-0.623	4.418	1.407	0.62
	good	1.968	0.670	2.376	1.322	-0.335	4.995	1.740	0.541
	poor	2.567	1.177	2.718	1.531	0.0289	5.266	2.144	0.462
Variance	excellent	0.192	0.183	0.365	0.127	0.244	0.746	0.204	0
	good	0.208	0.186	0.298	0.159	0.224	0.504	0.182	0.001
	poor	0.183	0.155	0.276	0.132	0.212	0.315	0.234	0.001

Chart 11 Variance corresponding to each indicator

index	x1	x2	x3	x4	x5	x6	x7
variance	0.208	0.186	0.298	0.159	0.224	0.504	0.182

It is found that the variance of the x3 and x6 indicators is large, indicating that the students are not able to deal with themselves well in both relationship management and obsessive-compulsive symptoms. The region should increase education and counseling in these two aspects. At the same time, the proportion of severe grades should not be ignored, and the proportions are relatively high. High, indicating that if corresponding measures are not taken, it is very likely that the psychological problems of minors in this area will be aggravated in the future.

Students with a comprehensive score of A are currently in a good state of mind, living and learning, without major problems, and in a stable state. Students can deal with psychological problems on their own and choose to continue to maintain this state or pursue a higher quality of life to improve themselves. Students with a comprehensive score of D are facing difficulties in all aspects, and we can conduct comprehensive psychological testing and counseling alone. Therefore, our research focuses on students in grades B and C. They may have serious problems in one aspect, so they need to be judged by analysis of variance. The large fluctuations indicate that there is indeed a certain aspect of outstanding psychological problems, which can be directed to avoid general guidance and adjustments that do not work.

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A Study on The Mental Health of Minors Based on Fuzzy Comprehensive Evaluation Method

Yefeng Zhou, Xiangran Cheng, Qi Zou
Institute Of Economics, North China University Of Science And Technology, Tangshan, Hebei, China

Abstract: Mental health has increasingly become a public concern. This paper also analyzes various existing problems. For question 1: after data cleaning, it is found that everyone's final rating in the questionnaire score is a. therefore, we re divide the final standard of the data, classify the factor set, and construct a fuzzy comprehensive evaluation model. Based on a large number of literature and expert research, analytic hierarchy process is used to determine each weight value. After the model operation, we found that the data did not differentiate as expected, so we considered refining the preliminary standard again, adding two categories between normal and mild anomalies, recording them as negative normal and positive mild anomalies, and so on. For question 2: Question 1 can get the results. Most people are in a state of sub-health. In view of this phenomenon, this paper explains in detail the influence of each psychological state on the paper performance, and finds that obsessive-compulsive symptoms and learning pressure are the two main influencing factors. For question 3: through the analysis of the results of question 2, we put forward some questions and suggestions, and wrote a suggestion letter.

Keywords: mental health; correlation analysis; hierarchical analysis; fuzzy comprehensive evaluation method

1. RECAP OF THE PROBLEM

1.1 THE BACKGROUND OF THE PROBLEM

Minors are in a golden period of physical and mental growth, with the increase of social experience, psychological and mental changes are also changing. In recent years, with the rapid development of China's social economy and other factors, the mental health situation of minors is not optimistic[1]. In December 2019, the National Health Commission and 12 other departments jointly launched the Healthy China Initiative - Action Programme for Mental Health of Childrenand Adolescents(2019-2022), coordinated by the organization, Funding to focus on the mental health of minors gradually rise as an important public health issues and national strategies[2]. How to better solve the mental health problems of minors is urgent.

1.2 THE PROBLEM TO SOLVE

a). Annex 3 gives 10 factors related to the mental health of minors, discusses the extent to which these 10 factors affect the mental health of minors, and combines annex 2 Gives some criteria for analyzing and evaluating the weights of 10 factors.

b). For the data of 1500 psychological questionnaires of middle school students in a certain area given in Annex 1, a mathematical model of the mental health evaluation system for minors is established, and an error analysis of the model is given.

c). According to the evaluation results and analysis, combined with the background of the problem, to parents and schools to put forward feasibility recommendations.

2. PROBLEM ANALYSIS

First, importing the 15 data sheets provided in Annex I into Rstudiofound that not all of the data was complete, and some sample data contained missing values that could not be used directly. After an initial screening, we left a total of 1259 valid data. In our correlation analysis using matlab, we found that the test scores of MMHI-60 in individuals were not directly correlated with their offline scores[3]. Therefore, in order to make the correlation of the sample data more direct and considerable, we decided to discard the factor of the mid-line and offline score of the sample and directly follow up with the ten factors in MMHI-60 as the main reference.

2.1 PREP KNOWLEDGE

MmHI-60 has 60 gauge items with a score of 5, and the size of the score represents how much the symptoms described in the topic affect them,1-5 points Step by step. Ten different factors correspond to their own different question numbers, with the mean score of each factor of all topics as the reference result of the factor, with the mean score of all factors as the reference result of MMHI-60, within 2 points to indicate that the factor or the overall mental health is not a problem,2-2.99 points indicate the existence of mild problems, A score of 3-3.99 indicates a moderate problem, a score of4-4.99 indicates a more serious problem, and a score of 5 indicates a serious psychological problem.

2.2 RLANGUAGE ANALYSIS

Developed in 1993 by Robert Gentleman and Ross Ihaka of Auckland University and other volunteers, the open source statistical analysis language R has powerful and extensive statistical analysis and mapping capabilities , showing great advantages in data visualization and data mining. Its analysis speed is comparable to that of GNU Octave and even commercial software MATLAB.

The total score is determined as follows:

For the problem one: By comparing the total score column, we find that all the final ratings are A,hindering the subsequent data classification and sorting, so in order to make the results more reasonable and refined, we re-divide the ten factors into three categories, namely, the first and second factor sets, and construct the corresponding membership functions and evaluation sets, The fuzzy comprehensive evaluation model is used to determine the evaluation set to which each sample belongs.

Unlike the ordinary fuzzy comprehensive evaluation, we abandon the principle of taking big and small in the process and replace it with weighted matrix multiplication. The weighted value of different factor sets is determined by layer analysis on the basis of a large number of literature and expert research, so that the results are more scientific.

For question two: Through the solution of question one, the mental health status of minors in this area can be obtained based on our research model. Supported by this result, we will look at the causes of the result and the phenomena behind it, starting with the result itself.

In response to question three: Question two has carried out a preliminary analysis of the mental health status of minors in the area, we will add a deeper elaboration in the letter of recommendations, and from the problem spread to countermeasures, to provide effective advice to the relevant departments, so that not only the psychological health of minors in the area have a preliminary understanding, but also to start the implementation of policies to make the mental health of minors to green development.

3. MODEL ASSUMPTIONS

Firstly, it is assumed that different psychological states (e.g. compulsive symptoms, paranoia, hostility, etc.) have comparable and continuous effects on the mental health of middle school students. Secondly, the psychological state of different samples is dynamic, but basically stable, there will be no significant change in a short period of time. Thirdly, Mental state can be measured numerically and superimposed. Finally, the questionnaire is open-minded and basically conforms to the participants' psychological state.

4. FOURTH, SYMBOL DESCRIPTION

symbol	meaning
CI	Critical metric value
RI	Random consistency indicator
CR	The consistency ratio
λ	The maximum feature value
$A_I(i = 1,2,3)$	The secondary weight value
AA	The first-level weight value
$R_I(i = 1,2,3)$	A single-factor matrix
$B_I(i = 1,2,3)$	The evaluation matrix of the first-level factor
BB	All as well as the evaluation matrix of factors
$F_I(i = 1\sim10)$	Secondary factor
$f_i(i = 1,2,3)$	Level 1 factor
R	The membership function
V	Evaluation set

5.THE ESTABLISHMENT AND SOLUTION OF THE MODEL

The process of model building, as shown in Figure 1, first preprocesses the data until there are no gaps or missing values in the data, then blocks and sorts the data, builds a fuzzy comprehensive evaluation system based on the weight determination of the hierarchical analysis method, and if the results are not within the expected range, the data should be processed twice and the model reconstructed until the correct evaluation results are obtained.

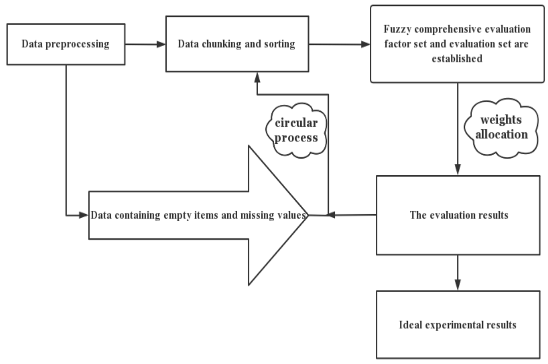

Figure 1. Model Build Flowchart

5.1 DATA ANALYSIS

MMHI-60 has 60 gauge items and a score of 5, and the size of the score represents how much the symptoms described in the topic affect them, with 1-5 points being increased step by step. In the data given by preliminary observation to know that all subjects are rated A, etc., such a broad result does not provide us with effective information, in order to further differentiate the results, we have MMHI-60 ten factors re-divided, such as Table 1 and construct a first- and second-level evaluation matrix, as shown in Table 2. On the basis of hierarchical analysis, fuzzy evaluation is carried out, and new results are obtained without changing the original data, so as to further analyze and put forward effective opinions.

Table 1. Factor Set Classification Form

Category representation
The physical characteristics of the minor f_1
Minors are in contact with others f_2
Minors have internal personality emotions f_3

Table 2. factor sets are represented

category	The set of factors	Representation
Own physical characteristics	Hostile	F_3
	Relationship tension and sensitivity	F_4
Interact with people	Compulsive symptoms	F_1
	bigotry	F_2
	depression	F_5
	anxiety	F_6
Intrinsic personality feeling	Learning pressure	F_7
	Poor adaptation	F_8
	Emotional imbalance	F_9
	Psychological imbalance	F_{10}

5.2 HIERARCHICAL ANALYSIS THE HIERARCHICAL

analysis method first divides the factors hierarchically, makes the judgment of the importance of each factor on the basis of the division, and then obtains the judgment matrix, and on the basis of the judgment matrix, the weight of each factor is calculated mathematically. The method of getting weight has strong professionalism.

Establishing a linear algebraic judgment matrix Based on extensive literature reading and expert

research, we judge the importance of the first and second-level factors by the scale-scale countdown measurement method of 1-9, and obtain the judgment matrix form as shown in Table 3. (This article takes the secondary causes, F_7, F_8, F_9 as an example for the F_{10}following operations).

Table 3. f_3 judgment matrix form table

f_3	F_7	F_8	F_9	F_{10}
F_7	1	2	1/2	1/2
F_8	1/2	1	1/2	1/3
F_9	2	2	1	1
F_{10}	2	3	1	1

Consistency test of judgment matrix When we make two judgments on things, it is necessary to judge the consistency test of matrix because there are no systematic references. First of all, the critical indicator value of the matrix is CIcalculated, and the randomness consistency index is obtained by checking the RItable, if, it can be $CR = CI / RI < 0.10$ considered that the judgment matrix meets the consistency test, and here, it is known by $matlab$ calculation $\lambda = 4.0458$.

$$CI = \frac{\lambda_{max} - n}{n-1}$$

n is the dimension of the determining matrix, RI the value of which is known in Table 4:

Table 4. Average Random Consistency Indicator Table

1	2	3	4	5	6	7	8	9
0	0	0.55	0.92	1.21	1.25	1.33	1.43	1.47

By calculating $CR = 0.0172 < 0.1$,knowledge, the judgment matrix meets the test of consistency. Determination of weight values the corresponding weight value of the matrix is

calculated by calculating three methods: average, geometric average and feature value vector. The result is as shown in Table 5:

Table 5. Matrix Weight Distribution Table

A_3	F_7	F_8	F_9	F_{10}
geometric mean	0.19370	0.1251	0.1325	0.13562
Arithmetic average	0.7930	0.1233	0.13245	0.13592
Feature vector	0.1936	0.1243	0.3257	0.13564

Finally, we take the average of the three methods above to determine the determination elements of the target F_3 layer, $F_7 F_8$, , and F_9 the F_{10} weight values of 0.193\0.124\0.325and0.358. You get $A_1\backslash A_2\backslash A_3$and by a similar AAmethod.

$$AA = (0.278{,}0.338{,}0.384)$$
$$A_1 = (0.429{,}0.571)$$
$$A_2 = (0.290{,}0.285{,}0.184.0.241)$$
$$A_3 = (0.193{,}0.124{,}0.325{,}0.358)$$

5.3 Fuzzy comprehensive evaluation method

Since the existing results are more consistent, in order to make them significantly differentiated, we have to re-evaluate the constructed factor level and get a new set of judgments, expressed as, $V = [v_1, v_2, v_3, v_4]$ $V = [v_1, v_2, v_3, v_4]$As shown in Table 6.

Table 6. Comment Set

Review set	Display format
Mental health is good	v_1
Mental health is normal	v_2
Mental health conditions are mildly abnormal	v_3
Mental health conditions are severely abnormal	v_4

And construct the membership function R, which represents the degree to which the factors in the factor set are dependent on different judging sets, and we determine R:n trapezoidality:

$$\begin{cases} 1, x \le 1 \\ \dfrac{2-x}{2-1}, 1 < x < 2 \\ 0, x \ge 2 \end{cases}$$

$$\begin{cases} 0, x \le 1 \\ \dfrac{x-1}{2-1}, 1 < x \le 2 \\ \dfrac{3-x}{3-2}, 2 < x < 3 \\ 0, x \ge 3 \end{cases}$$

$$\begin{cases} 0, x \le 2 \\ \dfrac{x-2}{3-2}, 2 < x \le 3 \\ \dfrac{4-x}{4-3}, 3 < x \le 4 \\ 0, x \ge 4 \end{cases}$$

$$\begin{cases} 0, x \le 3 \\ \dfrac{x-3}{4-3}, 3 < x < 4 \\ 1, x \ge 4 \end{cases}$$

Then, according to the membership function, the degree of membership of each factor in the secondary factor to the different evaluation sets is calculated, and in turn, the single-factor matrix is obtained. $R_1\backslash R_2\backslash R_3$ .Unlike ordinary fuzzy evaluation, we abandon the original law of taking big and small, and replace it with the multiplication of the matrix, and get the judgment matrix of each first-level factor by weighting the form.

$$B_1 = A_1 * R_1 = (0.429{,}0.571) * R_1$$
$$B_1 = A_1 * R_1 = (0.429{,}0.571) * R_1$$
$$B_{13} = A_3 * R_3 = (0.193{,}0.124{,}0.325{,}0.358) * R_3$$

Will be merged in the B_1、B_2、B_3 form of columns, with a judgment matrix of all first-level factors:

$$BB = \begin{bmatrix} B_1 \\ B_2 \\ B_3 \end{bmatrix}$$

Similarly, $f_1$the ,f_2, each as a different set $f_3$of factors, repeat the above matrix weighted multiplication of the operation, and finally get about an individual for different review sets of different degrees of membership, according to the principle of the greatest degree of membership, the maximum value is the evaluation category to which the individual belongs, to obtain results, such as Table 7 shown.

Table 7. Preliminary results

Evaluation set	v_1	v_2	v_3	v_4
Number	1259	0	0	0

5.4 IMPROVEMENTS

As can be seen from the above results, all of us are psychologically normal, which is obviously unrealistic, so we will refine the criteria again, in four different sets of judgments between two and two to add two criteria, that is, favor normal or bias abnormal, and so on. The result is as shown in Table 8.

Table 8. End Results

Evaluation results	Number
A negative tends to be normal	651
B Forward tends to be mildly abnormal	608

C negative tends to be mildly abnormal	0
D forward tends to be abnormal	0
E negative tends to be abnormal	0
F is moving toward a severe anomaly	0

6.ANALYSIS OF RESULTS

The pie chart Psychoanalysis of final data drawn from the final statistics is as follows:

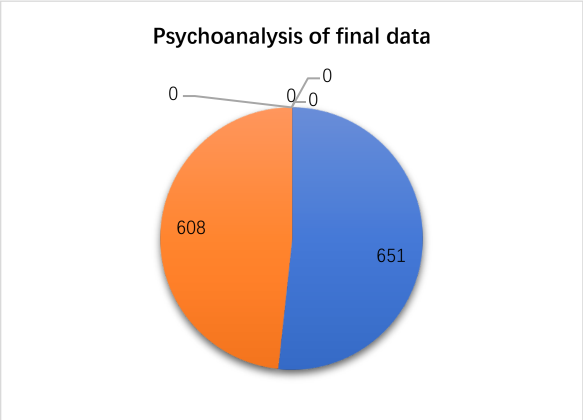

Figure 1. Map of adolescent mental health in the region

As shown in Figure 1., the vast majority of local youth have a certain degree of psychological problems, and we have a certain degree of relevance in real life, which not only for the contemporary youth frequent mental health accidents have been explained, but also for all of us to sound the alarm, not only we, but also related institutions, the Government. Contemporary teenagers may not be as physically unsympathetic as we think, but what they need more may be psychologically equivalent care.

It is important to note that:

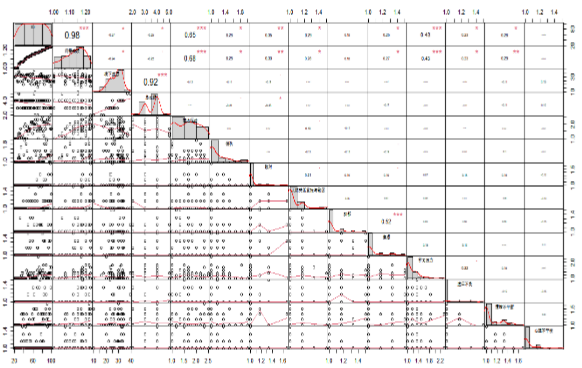

Figure 2. Visualization of the relativity of valid sample data

Although there are only two types of statistical results in this paper, it does not indicate that there are no other psychological states in the youth group in the area in practice.

$A \backslash B$ classification criteria depict the two situations under the preset mental health comparison standard in this paper, negative trend to normalize the individual's psychology is generally normal and healthy, positive tendency to mild abnormality indicates that the individual has potential psychological problems, and there is a tendency to continue to deteriorate.

We predict that 48.29% of adolescents in this area have a worsening mental state, so the psychological problems of adolescents really need the attention of all sectors of society, and it is urgent to improve the mental health status of adolescents.

In the process of assigning weights, this paper also pays attention to the impact of different psychological states on the mental health performance of the sample, as follows:

The cor.test() function in Rstudio allows you to find the perfect value of the correlation coefficient between different mental states and offline scores and overall results| cor | tend to 0,as shown in Figure2.,the correlation is very weak, so this article is not considered.

The volume score statistics table considered in this article are:

Table 9. The relative coefficient of mental state is referenced in the table

Different mental states	The absolute value of the relativity coefficient$\lvert cor \rvert$
Compulsive symptoms	0.682384
bigotry	0.2800562
Hostile	0.3027824
Relationship tension and sensitivity	0.2765358
depression	0.1848917
anxiety	0.2712092
Learning pressure	0.4285625
Poor adaptation	0.225001
Emotional imbalance	0.2927019
Psychological imbalance	0.03372036

It is worth noting that the results shown in Table 9. that the absolute value of the correlation coefficient between compulsive symptoms and volume performance reached 0.682384, hich is the biggest factor in the influence of each mental state, so this paper gives the degree of influence of each mental state on the volume score:

Forced symptoms (max)> poorly adapted>hostile>Psychological imbalance>paranoia>of interpersonal tension and sensitivity Anxiety>emotional imbalance>depression (min).

Based on this result analysis, combined with the social background, the rationalization proposals are put forward to schools and parents.

Letter of recommendation

Dear Schools and Parents:

Hello! We are part of a team of college students involved in analyzing adolescent mental health in this modeling competition.

Teenagers are the future and hope of the motherland, pay attention to the health of young people is our duty and obligation, now the rapid development of social economy, people's material life is rich day by day, but the mental problems of young people are emerging, their mental health has become an - an important social problem. The new outline of moral education promulgated by the State Education Commission clearly states: 'oral education is political, ideological, moral and mental health education.' Also speaks volumes about the importance of mental health.

According to our team's statistical analysis results, there are currently 48.29%, that is, nearly half of adolescents have mental health problems[4], the main factors are compulsive symptoms and learning pressure, some young people often make mistakes and then blame themselves, they are strong psychological, poor self-control, look at the problem extreme, one-sided, at the same time Poor learning stress exacerbates their anxiety levels.

Our team believes that the main causes of these problems are:

Firstly,the Internet is an important cause of mental illness in some children. Many children are addicted to online games, online violence, online pornography and other provocative websites, seriously affecting their children's mental health.

Secondly,with the growth of age, the physiological development of adolescents accelerates, which brings about the problem of psychological semi-maturity which lags behind the physical development

Then,Under the pressure of further education and examinations, the burden of schoolwork on young people is increasing, which also affects the physical and mental health of students

Finally,parents' failure to pay timely attention to the psychological development of adolescent children places too much expectation on adolescents

So our team recommends:

First, efforts should be made to create a good environment for the development of healthy personality of young people. We will speed up education reform, reduce the heavy burden of schoolwork on students, improve teachers' humanistic literacy, and strive to create a harmonious relationship between teachers and students and an environment for humanities education.

Second, vigorously carry out teacher training. The mental health education should be included in the school teacher training plan, and the full-time psychological tutors should be assigned and centralized-training, gradually implementing certified induction, through professional training, so that teachers engaged in mental health education to raise awareness of the importance of mental health education, master the knowledge and skills of mental health education, and establish a professional knowledge, practical experience, solid theoretical basis of mental health education team.

Third, gradually set up psychological counseling courses to further improve mental health education in schools. It is suggested that schools should pay attention to the combination of education prevention and counseling and treatment in educational and teaching activities, and do a good job of preventing it, carrying out mental health education in a planned, hierarchical and systematic way for students, teachers and even parents in all aspects, and popularizing psychological knowledge. Students with more serious psychological problems should pay more attention to the topics of 'frustration education","self-regulation of emotions' and 'interpersonal communication', targeted mental health education for young people. Cooperate with professional organizations for early treatment to make them healthy and healthy. At the same time, schools should set up psychological counseling rooms and provide health education classes or related lectures, pay attention to the use of radio, television, video, blackboard newspapers and other publicity tools, in response to students' psychological characteristics and knowledge requirements, so that students receive mental health education from many angles, many ways, guide them to correctly understand their physical and mental development characteristics, master the methods and techniques to solve psychological problems, change bad behavior, so that it has a good Psychological and social adaptability.

Fourth, to enrich the amateur life of young people. Actively create conditions to build a social practice base for young people, provide a stage for the healthy growth of young people to practice, exercise and improve students' ability to deal with interpersonal relationships. Strengthen the guidance of young people's life and leisure, enrich their spare time, guide them to participate in more healthy and beneficial cultural activities, use physical exercise means to promote students' mental health.

Hope that our proposal can improve the mental health of young people play a thin role, we also call on the community to pay attention to the mental health of young people, so that the flowers of the motherland in the sun free growth, physical and mental health!

7.MODEL TESTING

The model used in this paper is based on the fuzzy comprehensive evaluation of hierarchical analysis, the weight value determined by hierarchical analysis method has a certain subjectivity, the small change of the judgment matrix will make the final weight value will also change accordingly, so take the final weight matrix AA as an example, we carry out stability test.

We named the three weights in AA, name $\lambda_1\lambda_2$, λ_3, $\lambda_1 = 0.278, \lambda_2 = 0.338. \lambda_3 = 0.384$ When $\lambda_1\lambda_2$, λ_3 at 10%, the membership of the different evaluation sets is calculated separately and compared with the original data to determine whether the model is stable.

Table 10. Stability Check section data sheet

$\{\lambda_1, \lambda_2, \lambda_3\}$	$\{x_1, x_2\}$
$AA = (0.302, 0.321, 0.377)$	$659{:}\,600$
$AA = (0.279, 0,320, 0,401)$	$658{:}\,601$
$AA = (0.300, 0.310, 0.390)$	$661{:}\,598$
$AA = (0.271, 0.305, 0.424)$	$660{:}\,599$
$AA = (0.298, 0.312, 0.390)$	$662{:}\,597$

As can be seen from the table 10., when the weight fluctuates in a certain range, the result will change, but the magnitude is not large, and the overall satisfaction is satisfactory, so the model has some stability.

8. EVALUATION, IMPROVEMENT AND POPULARIZATION OF MODELS

8.1 THE ADVANTAGES AND PROMOTION OF THE MODEL

The correlation analysis method, hierarchical analysis model and fuzzy comprehensive evaluation method model given in this paper not only can establish the mental health evaluation system of minors, but also have the following advantages:

First,this model is based on all the data information in Annexes 1 and 2, and continuous analysis, inspection, and improvements make the model more accurate while ensuring the rigour of the model structure.

Secondly, this model fuzzy comprehensive evaluation method takes the form of weighted matrix multiplication and improves the credibility and scientific of the results.

Third, this model has a certain generality, such as the company's employee performance appraisal, air quality testing and other aspects have good practical application effect.

Fourth,data processing and modeling and solution of the full use of matlab, Excel and other mathematical software and R language programming analysis, a better solution to the problem, and obtained a more reasonable results. This model can be applied to environmental evaluation, investment risk benefit evaluation, product quality evaluation, market analysis and evaluation of the analysis of research.

8.2WEAKNESSES AND IMPROVEMENTS

First,the weight value obtained by this method is relatively subjective and will change with the change of human will, thus affecting the final result. Therefore, weight analysis should be more objective, so that the results are more authoritative.

Second, fuzzy comprehensive evaluation of the legal amount of data is less, focusing on qualitative components, and when the evaluation set is too vague, the final qualitative still can not appear obvious differentiation.

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Solar Energy - Semiconductor Auxiliary Refrigeration Device Based on PID Algorithm

*Tianhao Ji[1, 2, *], Yiguang Bo[1, 2], Zhiheng Xia[1, 2]*
[1]Mathematical Modeling Innovation Lab North China University of Science and Technology, Tangshan 063210, China;
[2]School of Yisheng Innovation Education North China University of Science and Technology, Tangshan 063210, China;
[*]Corresponding Author.

Abstract: This device for tourism, cold chain transportation in remote areas needs refrigeration conditions to lack electricity supply situation, combined with the situation of Solar energy resources in China, decided to use photovoltaic power generation as the energy source, semiconductor refrigeration chip as the refrigeration core, design a solar semiconductor auxiliary refrigeration device based on PID control. The device uses solar photovoltaic panels as the main energy source, a photovoltaic panel controller to ensure stable and continuous power supply to the device, and uses PID control algorithm to control the power of the refrigeration chip through the single-chip microcomputer, in order to achieve the purpose of accurate temperature control. Semiconductor refrigeration has no noise, small space, reliable operation, avoid environmental pollution, and other advantages. The overall system design structure is simple, makes full use of photovoltaic resources, has no pollution emissions, is cost-effective and environmental protection, has a good practical promotion value.
Keywords: Photovoltaic power generation; Semiconductor chilling plate; Cold-chain transportation; PID control

1. THE DESIGN BACKGROUND OF THE DEVICE

1.1 THE DESIGN BACKGROUND

China is located in the eastern part of Eurasia in the northern hemisphere, mainly in the temperate zone and subtropical zone, with a vast territory and abundant solar energy resources. As typical renewable energy, the conversion and utilization of solar energy play a key role in the process of energy structure transformation in China. At present, most refrigeration schemes use compressors. Under the current technical conditions, the efficiency of mechanical compression refrigeration is higher than that of thermoelectric refrigeration, but in the case of relatively small refrigeration capacity, semiconductor refrigeration has advantages that mechanical compression refrigeration can not match [1-2].

Based on abundant solar energy resources in our country, and the advantages of semiconductor cooling technology, we design a can reduce mains limit, long service life, safety, and environmental protection of solar semiconductor refrigeration system, in response to the national "double carbon" policy at the same time meet a small amount of food preservation, remote areas of transportation of the vaccine cold chain.

1.2 THE RESEARCH ACTUALITY

In China, Kumgang Sun et al. [3] combined photovoltaic power generation with semiconductor refrigeration and carried out experimental research. It is found that the maximum refrigeration coefficient of the device can reach 0.4 in a small space, which proves that refrigeration in a small space is workable. Jr Wang et al. [4] have validated the feasibility of automotive refrigeration by designing and manufacturing small photovoltaic panel semiconductor air conditioners for nonoperational vehicles.

There are also many related studies in the world, of which KashifIrshad [5] designed and manufactured a new energy wall by combining photovoltaic panels and semiconductor refrigeration pieces and built a test space of 9m3 with it. The experiment found that: at the current of 9A, the peak temperature difference between inside and outside the space is 6.8℃, the peak cooling coefficient is 1.15, and the peak cooling capacity is 517.24W. Liu [6] et al. designed a refrigeration air conditioner using photovoltaic panels and semiconductors. This new type of refrigeration air conditioner can supply hot water. The experiment shows that the space refrigeration coefficient can reach 4.51, and the performance can reach 3.01 after water heating.

2. DESIGN OF THE SYSTEM

2.1 INTRODUCTION TO THE SYSTEM

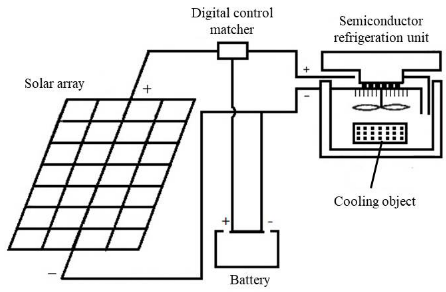

Figure 1. Solar - semiconductor combined refrigeration system

The photovoltaic thermoelectric experimental system is connected as shown in figure 1. The photovoltaic panel generates electricity due to the photovoltaic effect and supplies it to the refrigeration device. Since the photovoltaic panel power generation efficiency is susceptible to solar radiation intensity and environmental factors, in order to ensure the stable operation of the system, the solar numerical control adapter is connected between the refrigeration device and the photovoltaic panel, which includes a single-chip microcomputer control device and a photovoltaic panel controller. When the output power of the photovoltaic panel is greater than the power required for refrigeration, the controller will charge the excess energy for the battery. When the output efficiency of photovoltaic panel is less than the system power, the power in the battery will be released by the controller to ensure the stable operation of the refrigeration device.

2.2 DESIGN OF CONTROL SYSTEM PART

The control system of this device consists of two parts; one is a photovoltaic panel controller, the other part is a PID temperature control system based on MCU.

The photovoltaic panel controller uses the main control chip matching the photovoltaic panel, and the controller will not be emphasized. This paper mainly introduces the temperature control system based on SCM.

2.2.1 OVERVIEW OF PID ALGORITHM

Pid control algorithm is one of the simplest closed-loop control algorithms. It can correct the deviation of the controlled object through the combination of Proportion, Integral and Differential coefficient control algorithms. A control algorithm to achieve a stable state. Pid control algorithm is divided into incremental Pid control algorithm and Pid position control algorithm. The incremental PID control algorithm is used in this paper.

The formula of incremental PID control algorithm is shown in Formula (1) and Formula (2)

$$\Delta u(k) = u(k) - u(k-1)$$

$$\Delta u(k) = Kp[e(k) - e(k-1)] + Kie(k) + Kd[e(k) - 2e(k-1) + e(k-2)]$$

In Formula (2), Kp, Kie, and Kd respectively represent the proportional coefficient, integral coefficient and differential coefficient. The proportional coefficient, integral coefficient and differential coefficient should be set appropriately before the operation of the system.

2.2.2 REALIZATION OF CONTROL SYSTEM

The hardware of the control system consists of a single-chip microcomputer, a temperature sensor, an OLED screen and a matrix keyboard. The user can set the target temperature through the matrix keyboard. The temperature sensor is placed in the cooling space with PU insulation layer as the main body (hereinafter referred to as the cooling space), connected to an idle I/O port of the single-chip microcomputer through wires, and the temperature in the cooling space is transmitted to the single-chip microcomputer in real-time. The OLED screen can display the target temperature as well as the real-time temperature in the cooling space transmitted by the temperature sensor for the user's application. In addition, the OLED screen can display real-time time.

For the PID control algorithm, first of all, the three coefficients of Kp, Kie and Kd are set, and the coefficient setting is particularly critical. If the coefficient is too large, it may cause the change of the controlled quantity to be too radical and consume unnecessary electric energy. If the coefficient is too small, the controlled quantity may change too slowly, and the time to reach the target temperature will be longer, resulting in a less obvious cooling effect.

After the temperature sensor sends the real-time temperature in the refrigeration space back to the single-chip microcomputer, the difference with the set target temperature is put into the incremental PID control algorithm for calculation, and after obtaining △u (k), the controlled quantity is adjusted to achieve the purpose of accurate temperature control. The flow chart of the system is as figure 2.

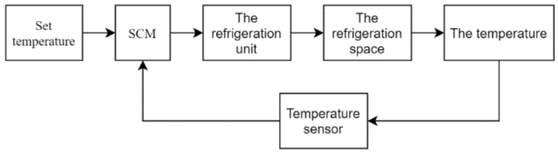

Figure 2. Flow chart of control system

2.3 DESIGN OF THE REFRIGERATION PART

The refrigeration part consists of a TEC1-12705 semiconductor refrigeration sheet, fan on the heat dissipation side and cooling side, fins on the heat dissipation side and cooling side, guide cold aluminium block and a refrigeration space with PU insulation layer as the main body.

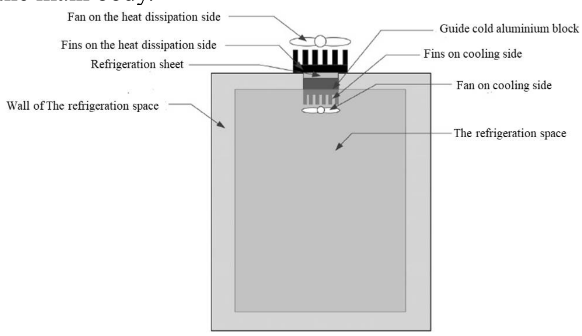

Figure 3. Design of refrigeration part

At the material level, single-stage semiconductor refrigeration maximum temperature difference can reach about 70 k, at the same time, the work under the larger temperature difference, the refrigeration coefficient drops rapidly; refrigeration condition deteriorates, so we apply silicon grease, install hot side fin and heat and cooling fan to strengthen the cooling of the hot end, in order to improve the performance of semiconductor refrigeration.

Rigid polyurethane foam plastics, rigid polyurethane foam (RigidPU) for short, are mostly closed pore structure, has good performance in thermal insulation, lightweight, excellent characteristics, construction is convenient wait for a larger than strength, at the same time also has the sound insulation, shockproof, electric insulation, heat resistant, cold-resistant, solvent resistance and other characteristics, so we choose the PU as the main material of heat preservation box as refrigeration and space.

2.4 DESIGN OF THE SOLAR PHOTOVOLTAIC PART

We use a 12V single-crystal 100W solar panel with a specification of 670mm×910mm as the photovoltaic power supply panel, and its parameters are shown in Table 1:

Table 1. Solar photovoltaic panel parameters

Rated power: 100W	Operating voltage: 18V	Open circuit voltage: 22V
Weight: about 8kg	Peak current: 5.72A	Short circuit current: 6.46A

The battery is the 12V9Ah lead-acid battery c12-9 of SANSTKTE, which is simple to maintain, stable in quality and low in cost.

For battery charge and discharge conditions of regulation and control, prolong the service life of the battery, and on the demand of the load of the refrigeration module control solar cell components and battery power output of the cooling module, we chose to form a complete set of solar photovoltaic panels, solar controller regulated power supply, prolong service life, in order to achieve the purpose of.

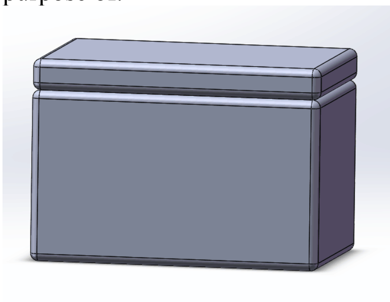

Figure 4. Cooler box

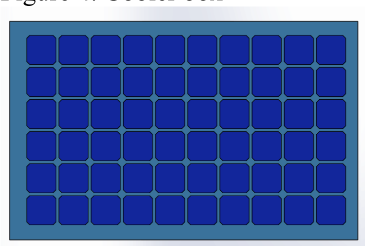

Figure 5. Solar photovoltaic panel

3. CORE INNOVATIONS AND TECHNICAL KEYS

3.1 CORE INNOVATIONS

The main innovations of this project are:

a. The hybrid power supply of solar photovoltaic panels and lead-acid batteries can not only achieve the goal of energy conservation and emission reduction, but also ensure the long-term and stable operation of refrigeration devices.

b. On the premise of relatively small refrigeration capacity, the use of semiconductor refrigeration chip for refrigeration, reduce the space occupation, convenient for travel and vaccine transportation, no noise, no wear, long service life, to avoid refrigerant pollution to the environment.

3.2 TECHNICAL KEYS

a. Coordination of solar photovoltaic panel power supply and battery charge and discharge;

b. Material selection and structural optimization design of refrigeration unit.

3.3 TECHNICAL INDICATORS

Efficiency of solar photovoltaic panels as a primary energy supply for refrigeration systems.

4. PERFORMANCE ANALYSIS

We build the model through the physical object, the design of the following four aspects of performance analysis [7-10]:

4.1 CHANGE RULE OF HOT-END OUTLET TEMPERATURE WITH WIND SPEED

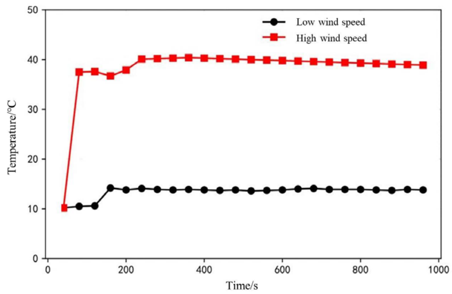

Figure 6. Change rule of hot end outlet temperature with wind speed

4.2 THE VARIATION RULE OF COOLING CAPACITY WITH TIME

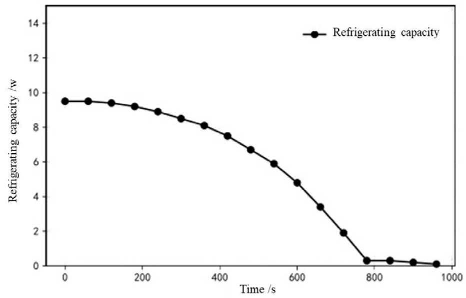

Figure 7. The variation rule of cooling capacity with time

4.3 THE TEMPERATURE IN THE BOX CHANGES WITH TIME

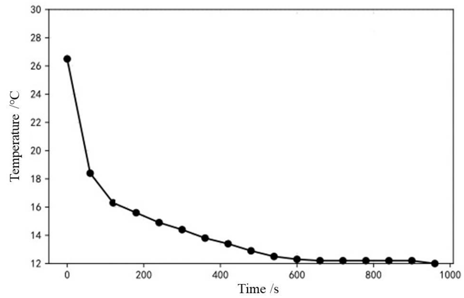

Figure 8. The temperature in the box changes with time

4.4 THE LAW OF REFRIGERATION COEFFICIENT CHANGING WITH TIME

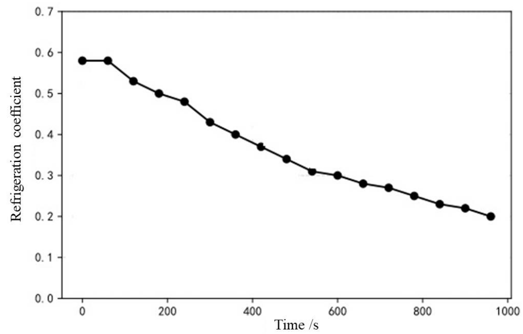

Figure 9. The law of refrigeration coefficient changing with time

5. APPLICATION PROSPECT

Whether it is driving out or transporting medical supplies in remote areas, appropriate cold storage temperature is a very necessary condition. The direct current generated by the solar photovoltaic cell drives the semiconductor refrigeration device, which not only narrows the space occupied by the refrigeration device, runs reliably, but also avoids the problem of air pollution. The photoelectric conversion also achieves the goal of energy-saving and emission reduction, which have a good reference and promotion significance. The use of traditional refrigerators needs to consume a lot of conventional energy, indirectly causing more and more serious pollution to the environment. In view of China's current energy supply and environmental protection needs, it is an inevitable trend to develop refrigerators using clean energy. In addition, there are many remote areas and nomadic communities in China that are not yet connected to the power grid and do not have access to refrigerators to preserve food, which also provides a potential market for the development of solar refrigerators.

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Characteristics Of Joint Angle Variation of Badminton Player's Smashing Action

Qifeng Gou[1, 2], Sunnan Li[2], Wei Zhang[3], Gui Ren[2], Mengnan Zhao[2], Lingyun Li[2]*
[1]*College of Physical Education, Northwest Normal University, Lanzhou, 730070, Gansu, China;*
[2]*College of P.E and Sports, Beijing Normal University, Beijing, 100875, China;*
[3]*China National Basketball Academy, Shandong Sport University, Jinan, 250102, Shandong, China;*
[*]*Corresponding Author.*

Abstract: Badminton backcourt smashing technique is an important means of scoring, mastering the correct smashing action can effectively avoid sports injury, so as to improve the level of badminton competition. The biomechanics analysis of the backcourt forehand smashing action of the amateur badminton players can find the deficiency of this technique, so that they can improve and improve in the future training and teaching training. Supplement the badminton training theory, at the same time, it is of great help to the standardization of the movements of young badminton lovers and the formation of lifelong sports thoughts. In this study, the joint angles of backcourt forehand smashs of 10 outstanding amateur and 2 professional registered male athletes in Gansu province were studied by using kinematic method, video analysis method and mathematical statistics method. The results are as follows: Amateur badminton players' trunk arch amplitude is smaller than the right hip extension angle of 24.62±5.06˚of professional athletes, and their elastic potential energy reserve is poor. Amateur athletes turn less during the moment of smashing the ball, and the joint extension of the racket-holding arm is not sufficient, leading to a low hitting point in the E_3 period.

Key words: Amateur Badminton Player; The Back; Forehand Smash Technique; Joint Angle

1.INTRODUCTION

Badminton technology is more and more comprehensive, stable, prominent, rapid, change and change, in the play from slow pull slow lift into accelerated assault. Therefore, set fast speed, power, straight arc, more lines and other characteristics of the ball smashing technology has been the attention of various sports teams, but also become an important means of scoring in the game.The test subjects selected in this study represent the amateur level of Gansu Province. Among the test objects, there are no lack of physical education teachers and coaches, who are always responsible for badminton teaching and amateur badminton training in Gansu Province. There are a large number of young and adult students, so it is particularly important to standardize their own skills. Therefore, this study is of great significance.

1.1 Angle characteristics of lower limb joint of athletes in ball smashing

As shown in Figure 1, the Angle of the right hip and right ankle of the athlete has little change in the process of smashing the ball, showing a trend of increasing first and then decreasing gradually. The Angle of the right knee joint changes relatively greatly, and the maximum Angle of the joint is larger, which appears in the landing buffer stage, about 174˚, and the athlete completes the transition of the center of gravity after turning the waist to smash the ball. The minimum Angle of the right hip appears in the stage of preparation for squatting, which is about 123˚. At this time, the body mainly uses elastic potential energy reserve before take-off.

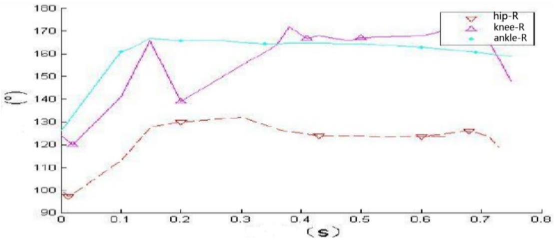

Fig.1 Angle of right hip, knee and ankle of amateur athletes

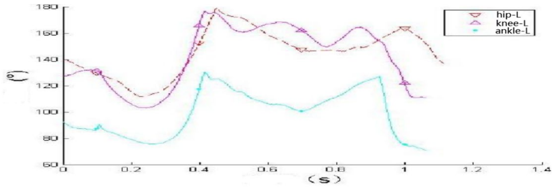

Fig. 2 Angle of left hip, knee and ankle of amateur athlete

As shown in Figure 2, the variation trend of the Angle of left hip, left knee and left ankle was basically the same during the smashing, with two peaks appearing in $E_2$and E_4 respectively. The Angle of the left knee joint changes greatly, showing the difference between the second half of E_2 stage and before hitting the ball, which is mainly for the power transmission of the torso at the moment of smashing the ball. The maximum Angle of the left hip joint is about 175˚. At this time, the athlete's torso is in the state of anti-arch in the take-off stage, which completes the reserve of elastic potential energy. The minimum Angle of the left ankle is about 68˚, and the landing buffer ends.

1.2 Torso Angle characteristics of athletes in ball smashing

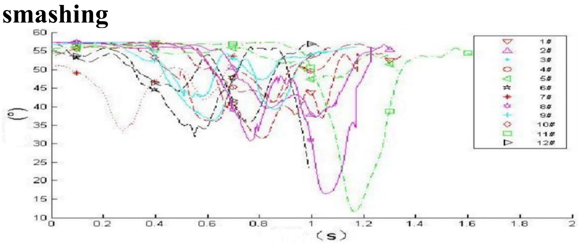

Fig. 3 Changes of torsional Angle of athlete's torso

As shown in Figure 3, the variation trend of torsional Angle of torso during the smashing is decreasing→increasing→decreasing→increasing. During T_1, the torsional Angle of the trunk gradually decreased to complete the preparation before take-off. The maximum torsional Angle of the trunk at T_2 time was 55±5.3°, and the minimum Angle was 31±16°. T_2 time athletes body torsion Angle difference is bigger, relative to the athletes 1#, 2#, 6#, 8#, and 11# athletes in the action phase of premature, smash the ball speed transfer effect is poorer, in the future training to targeted practice of air time to smash the ball movement, the swivel and the trunk of each joint flexibility.

1.3 Upper limb characteristics of ball smashing

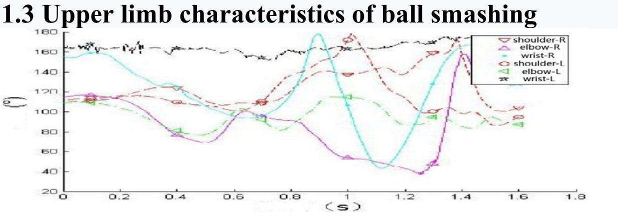

Fig.4 Angle curves of shoulder, elbow and wrist joints

As can be seen from Figure 4, the Angle of the left wrist joint changed the least during the ball smashing, which remained at about 162°.The Angle of the right wrist joint changed greatly, showing a trend of decreasing→increasing→decreasing→ increasing, and the extreme value appeared at T_2 time. The Angle of the left elbow had little change, and the change trend was the same as that of the right wrist, with a range of 100±20°.The Angle of the right elbow joint varies greatly, showing a trend of decreasing→increasing→decreasing→increasing. The Angle of the whole joint decreases from squat preparation stage to hitting stage, and increases sharply in landing buffer stage. The Angle of left shoulder and right shoulder increased first and then decreased, and the maximum Angle of left shoulder reached about 176°in the take-off stage. The Angle of the right shoulder continues to increase before hitting the ball, and reaches the maximum at the moment of hitting, about 172°, and decreases sharply after hitting the ball. At this time, the athlete's right shoulder joint Angle is larger, easy to get a higher click on the ball, increase the smashing power. At this stage, the athlete's right shoulder joint should be extended backward to the maximum to obtain enough moment of moment. Therefore, we should pay attention to the flexibility training of shoulder joint in the future ball smashing practice.

1.4 Head characteristics of ball smashing

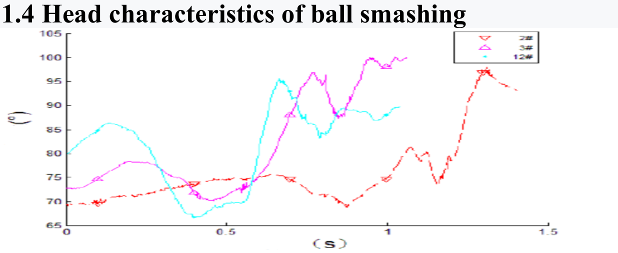

Fig. 5 Variation curve of mandibular Angle characteristics

The head of a player has distinct features when he smashs the ball. As shown in Figure 5, the mandibular Angle varies greatly in the process of ball smashing, while the change of speed has obvious characteristics of movement stage, which varies with the change of the speed of the center of gravity of human body. The trend of mandibular Angle of athletes 3# and 12# was basically the same, and athletes 2# were in $T_1 \backslash T_2$ period, the jaw Angle changes little. In this stage, the head is tilted up, and the ball is positioned according to the movement of the incoming ball and the jump is used to find the hitting point. 3# and 12# athletes' mandible Angle changes greatly at this stage, resulting in a bad grasp of the best take-off time after finding the exact take-off position, and the selection of hitting point will be unreasonable. At T_3, the head rotates to the left in coordination with the trunk, and the mandibular Angle changes greatly. Among them, the lower jaw Angle of the 12# athlete is small, and the coordination effect of the turning movement is poor. The change trend of Angle in T_4 period firstly increases and then decreases, which is mainly to maintain the stability of landing attitude. Excellent amateur athletes in Gansu province should pay attention to the role of head movement in the whole process of smashing the ball in the future training.

2. CONCLUSIONS

(1) Excellent amateur male badminton players in Gansu province have a reasonable proportion of E_1-E_4 stages in the process of smashing the ball, and their swing time is more accurate. There is a great difference in the completion time between the squatting stage and the landing buffering stage, which is mainly reflected in the positive judgment of the ball and the difference in the stability of the landing buffering stage.

(2) There are great differences in the backcourt forehand smashing actions of elite amateur male badminton players in Gansu Province. In the process of smashing, the height of the jump of some players is not high enough, the range of body counter-arch is small, and the right hip extension Angle of 24.62±5.06°is obviously smaller than that of professional athletes, and the elastic potential energy reserve is poor. Amateur badminton players have a small range of rotation in the instant of smashing the ball, and their arm joints are not fully extended in the instant of hitting, resulting in a low hitting point in E_3 stage. The Angle of some joints and the maximum speed are different at the moment, causing the action to be not coordinated and coherent, affecting the cumulative effect of speed, making the ball speed decrease at the moment of hitting.

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A Study on College English Teaching based on "Ideological and Political Education"

Lixin Liu
Foreign Studies College, Northeastern University, Shenyang 110819, Liaoning, China

Abstract: Curriculum ideological and political education is the requirement of national strategy and educational goal in the new era, and a new topic in the college curriculum. Ideological and political education in college English courses is a scientific and systematic integration of ideological and political education and English teaching, and it is an advantageous platform for practicing knowledge teaching and value leading in the same direction. By improving English teachers' political theory literacy and ideological and political teaching ability, digging deep into teaching resources, perfecting the method system and optimizing the evaluation mechanism, we aim to optimize the educational value of English courses and wholly improve the ideological and moral cultivation of college students.

Key words: Curriculum ideological and political education; college English teaching; language learning

I. THE CONNOTATION, PURPOSE AND SIGNIFICANCE OF CURRICULUM IDEOLOGICAL AND POLITICAL EDUCATION

The foundation of education lies in establishing morality and casting soul. In December 2016, at the national conference on ideological and political work in colleges and universities, Xi JP, the general secretary, pointed out that "To do a good job in ideological and political work in colleges and universities, we should make good use of classroom teaching as the main channel, and ideological and political theory courses should be strengthened through improvement. All other courses should keep a good canal and plant a good field of responsibility so that these courses and ideological and political theory courses can go in the same direction and form a synergistic effect." [1] In May 2020, the Ministry of Education issued the Guiding Outline of Curriculum Ideological and Political Construction in Colleges and Universities, proposing to firmly establish the central position of personnel training, and to constantly improve the curriculum ideological and political work system, teaching system and content system around building a high-level personnel training system. For college English teaching, how to realize curriculum ideological and political education in language learning is an important issue facing college teachers.

The ideological and political course and curriculum ideology and politics are two completely different concepts of curriculum form and content. The former refers to the ideological and political courses, such as *Marxist Philosophy* and *Introduction to Scientific Socialism*. Its core is "spreading Marxist theory and our Party's innovative theory, especially Xi JP's socialist thoughts with Chinese characteristics in a new era." [2] The latter is not a specific course, but an educational and teaching concept. Its basic meaning is that all university courses have the dual functions of imparting knowledge, cultivating ability and conducting ideological and political education. These courses bear the role of cultivating college students' outlooks on world, life and value. Curriculum ideological and political education is also a way of thinking. In teaching design, teachers should put the ideological and political training as the goal of curriculum teaching in the first place, and combine it with professional development education, and intentionally, organically and effectively carry out ideological and political education for students in the teaching process.

The purpose of ideological and political courses is to realize that all kinds of courses and ideological and political theory courses go in the same direction to form synergistic effect and to realize collaborative education so that students can consciously strengthen ideological and moral cultivation and enhance political consciousness in the process of learning professional knowledge. Therefore, ideological and political courses and professional courses can be organically unified, and ideological and political work and personnel cultivation can be dialectically unified. Ideological and political education should be integrated into every class, for "what kind of people to cultivate", "how to cultivate people" and "for whom to cultivate people" are the fundamental issues of personnel cultivation. By deepening the reform of curriculum objectives, contents, structures and models, curriculum ideological and political education organically combines these educational orientations such as political identity, national consciousness and cultural self-confidence with the knowledge and skills teaching in various courses to promote students' all-round development.

Curriculum ideological and political education has clearly defined the direction for higher education: adhering to the socialist theories on school management, cultivating useful talents who have both abilities and political integrity, support the leadership of the Communist Party of China and the socialist system, and are determined to strive for socialism with Chinese characteristics. In order to follow the direction, curriculum ideological and political education should stick to cultivating people by virtue, learning and teaching by virtue, strengthening the cultivation and education of students' outlooks on world, life and value, inheriting Chinese excellent traditional culture, guiding students to share the same fate with the nation, moving forward with the development of the country, and becoming qualified builders and reliable successors for the socialist cause with Chinese characteristics.

II. The strategies of integrating ideological and political elements into college English courses

1. Improving English teachers' political theory literacy and ideological and political teaching ability

The General Secretary Xi JP emphasized that "teachers are engineers of human souls and undertake sacred missions. Teachers are the foundation and source of successful education. High-quality teachers are indispensable to obtaining the high-quality education. The preacher himself must have perception and cognition and believe in the right path." Therefore, college teachers should insist that educators receive education first, strive to become disseminators of advanced ideology and culture and staunch supporters of the Party's governance to better assume the responsibility of guiding students' healthy growth.[3] College teachers should strengthen the construction of morality and teaching style as well as adhere to the unity of teaching and educating people, the unity of words and deeds, the unity of concentration on education and concern about the society, the unity of academic freedom and academic norms.[4]

College English teachers can participate in ideological and political course training regularly, or set up ideological and political course teams so as to improve their ideological and political educational abilities and political theory literacy through continuous learning. In teaching, it is necessary to break the rigid thinking that emphasizes the theory of knowledge system, readily accept the teaching method of integrating ideological and political elements into English courses, explore the ideological and political differences between Chinese and Western cultures, introduce ideological and political ideas into the overall design of teaching process, spread positive ideological and political energy to students, earnestly cultivate students' craftsmanship spirit, and truly become the guides of students' studies and life. Teachers should also strengthen the communication with students in thought, emotion and life to grasp their ideological trends, find out their problems and difficulties in time, offer help and solutions, and become the academic guides and the intimate friends in their life.

2. EXPLORING TEACHING RESOURCES AND INTEGRATING IDEOLOGICAL AND POLITICAL FACTORS

College English curriculum content is the carrier of ideological and political elements. English teachers should try to dig deeply into the teaching resources, and skillfully integrate ideological and political education with English language skills step by step to cultivate students' lofty professional spirit. [5]

Textbook is the main medium for students to acquire knowledge. It has the important function of spreading language knowledge and also carries specific ideology. In order to implement the concept of "cultivating people by virtue" and "people-oriented", teachers should base on teaching materials, dig and refine the cultural genes, ideological values and spiritual connotations contained in the language and cultural knowledge system, and consciously integrate them into the socialist core values and Chinese excellent culture. The specific methods are as follows: explore the ideological and political points contained in teaching materials, combine with the themes of teaching materials, carefully select materials and design teaching contents, and reasonably arrange class activities to achieve the goal of ideological and political education. While learning the western language and its culture, students can cultivate their understanding of the Chinese system, Chinese road, Chinese theory and Chinese culture. They also consolidate the foundation of comprehensive language skills, improve their speculative abilities, shape correct values imperceptibly, stimulate their sense of historical mission and responsibility to inherit and carry forward Chinese civilization, and constantly enrich and innovate Chinese culture in cross-cultural communication, and tell the world Chinese stories in English.

The ideological and political elements of the curriculum should be based on the actual needs of students and conform to their cognitive laws. While students learn English knowledge, they can accept the influence of humanistic quality, develop good ideological quality, and enhance their sense of identity with Chinese culture and national pride. Teachers can expand teaching materials according to the unit teaching contents, infiltrate ideological and political education into English teaching, and realize the effect of "moistening things silently".

Taking the College English Integrated Course B2U1 as an example, in the introduction part, teachers can take Confucius' famous sayings "Zhi yu dao, ju yu de, yi yu ren, you yu ji" as the breakthrough point, and explain "young people should establish a life goal, take morality as the basis, have a loving heart and respect others, grasp profound knowledge and comprehensive abilities"; while improving self-cultivation, young people should constantly equip themselves, attain certain achievements and abilities to serve people and the society, and become the pillar of the country.

When explaining the word "distinctive", teachers can quote the original sentences from the 19th National Congress Report and ask students to do translation exercises. ("We have every confidence that we can give full play to the strengths and distinctive features of China's socialist democracy and make China's contribution to the political advancement of mankind. ")Similar exercises combine with the key words in the text, and also enable students to understand how to express the Party's policies and guidelines in English, thus achieving the penetrating effect of ideological and political education.

3. PERFECTING THE METHOD SYSTEM OF IDEOLOGICAL AND POLITICAL EDUCATION

1) In terms of teaching resources, the teaching team can study important documents of the Party and the government, classic books on current politics and classic works of China, such as the 19th National Congress Report, the speech on the 70th anniversary of the founding of the People's Republic of China, the Chinese and English versions of *Xi JP's Talks on Governing the Country*, the English versions of the *Analects of Confucius and Mencius*, and the *Chinese Culture Reader* and the *Translation of Chinese Traditional Culture*. These

contents can be used to guide students to learn language knowledge and basic translation methods, meanwhile, they can have a deeper understanding of cultural differences between China and foreign countries. Teachers can also collect English texts and videos on the latest interpretation of current affairs and national policy development, such as China International Television, Xinhuanet and China Daily, and establish a dynamic teaching resource library with theoretical depth to keep pace with the times.

Teachers can also select ideological and political courses on MOOC or SPOC platforms that fit the teaching materials, and carry out mixed teaching activities; Sentences containing key words are to be selected from the Party and government documents and traditional cultural books to add to example sentences, While explaining the vocabulary, teachers can guide students to look at the western culture dialectically when learning English articles, correctly interpret the similarities and differences between Chinese and Western cultures through cross-cultural comparison, take in the essence and discard the dross to enhance students' cultural self-confidence.

2) In the teaching process, teachers can highlight students' subjectivity, provide students with more platforms for autonomous learning, communication and discussion to improve students' emotional experience. In addition, teachers can make full use of multimedia technology to create realistic situations so that students can experience and feel them personally to form emotional and ideological resonance and improve the effect of ideological and political education. Teachers may introduce some real cases based on students' real life, give full play to their English language abilities, improve their thinking ability and achieve good ideological and political education results.

3) Based on China's excellent traditional culture and social hotspots, teachers and students can make better use of the second classroom to carry out various forms of English club activities, such as English speech contests, debate contests, writing contests, short play performance, etc., to infiltrate ideological and political education at various levels. Teachers can strengthen the communication with students, such as answering questions after class, group discussion, online communication, teaching feedback and academic guidance, so as to guide students to further clarify their outlooks on world, life and value so that ideological and political education can be carried out in parallel inside and outside the classroom as well as online and offline.

4. OPTIMIZING THE EVALUATION MECHANISM OF COLLEGE ENGLISH CURRICULUM

At the National Education Conference in 2018, General Secretary Xi JP emphasized that it is necessary to deepen the educational system reform, improve the mechanism of cultivating people by virtue, reverse the unscientific evaluation orientation, resolutely overcome the stubborn stereotype of only scores, diplomas and essays, and fundamentally solve the problem of educational evaluation baton. [6]

The effective promotion of ideological and political education in college English courses cannot be separated from the perfect teaching evaluation mechanism. The teaching evaluation mechanism of "curriculum ideological and political education" includes not only the evaluation of teachers' teaching work (teaching content design, teaching activity design and organization and implementation), but also the evaluation of students' learning. The two are effectively combined to test, improve and guarantee the effective implementation of "curriculum ideological and political education" strategy more scientifically and reasonably.

The evaluation of teachers' teaching should not only start from teachers' teaching design, specific organization and implementation, teaching effect, but also extend to teachers' ideological and political awareness, moral quality, humanistic quality, etc., so as to promote English teachers to actively change their teaching concepts and ensure the effective implementation of "curriculum ideological and political education". Specifically, a comprehensive evaluation system of teaching, scientific research and social service should be set up, and teachers' guidance to students on network platforms and in social practice should be quantitatively assessed and evaluated. A multi-dimensional evaluation is formed combining teachers' self-evaluation, students' evaluation and Party leaders' evaluation to enhance the credibility, objectivity and reliability.

Under the background of curriculum ideological and political education, teachers should pay attention to students' moral cultivation, ideological status, patriotic emotions, national self-confidence, etc. Incorporating these factors into the usual teaching evaluation system is helpful to understand students' ideological status and trends and penetrate the content of ideological and political education in a targeted manner. Teachers can take questionnaires, interviews, students' compositions or reports, speeches or debates, etc., and use quantitative research methods to make multiple scientific evaluations on the implementation effect of curriculum ideological and political education. In view of the problems found in the evaluation process, teachers can hold collective meetings to work out improvement methods in time to make students further understand Chinese traditional culture and social status quo, arouse their deep thinking to correctly treat western culture and enhance their patriotism.

Education is the cornerstone of national rejuvenation and social progress. College students shoulder the responsibility and mission of social development and progress. College English, as a compulsory course, has the characteristics of wide coverage and far-reaching influence, so it is of great significance to carry out ideological and political education. College English teachers should change their teaching ideas, spread socialist core values while teaching knowledge, guide students to establish correct outlooks on world, life and value, deepen their ideals and beliefs, and carry out patriotism, moral education and social responsibility education. Integrating curriculum ideological and political education into college English teaching is the only way for college English teaching reform, and it is also a correct idea in line with the development of the times.

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Research on the Construction of Home Field of Women's Basketball League -- Liyang Competition Area of Jiangsu Province for Example

Xuelu Yu
Department of Physical Education, Nanjing University, Nanjing 210046, China

Abstract: Boosting New Economic Models, Creating New Motive Force, generating new industries and stimulating new consumption "for the city to host events and to build up an image of sports city. The construction of an excellent home match area can not only extend the popularity and influence of the city, but also respond to the slogan of promoting the construction of a sports power and inject new vitality into the development of both the city's sports culture and the basketball sport. This article, which starts with the development status quo, limiting factors and improving ways of WCBA Liyang match area, can provide more theoretical support for the construction of WCBA home match area and promote the future construction of WCBA home match area.
Keywords: WCBA; Women's also; Economic Home

1. INTRODUCTION

Sports carry the dream of national prosperity and rejuvenation. When sports are strong, China will be strong; when the country is prosperous, sports will be prosperous. The dream of sports power is closely related to the Chinese dream. Competitive sports is an important part of moving from a sports power to a sports power. Since the 19th CPC National Congress, General Secretary Xi JP has delivered a series of important speeches on sports work. General Secretary Xi's important instructions on the work of Jiangsu and his important discussion on sports work have pointed out that jiangsu will contribute to promoting the construction of a powerful country in sports and making sports a symbolic cause of the great rejuvenation of the Chinese nation. In rejuvenating and developing the "three big balls", our province proposes to develop and cultivate the "three big balls" competition market and improve the marketization and socialization level of the "three big balls" development. The development of professional sports should focus on popular projects and cultivate a number of professional sports clubs with high competitive level, good economic benefits and good social reputation. This provides us with a fundamental basis for the development of competitive sports work in the new era, pointing out the direction. Liyang city is famous as "the land of fish and rice", "the land of silk" and "the land of tea". Its economy has been ranked among the top 100 counties (cities) in China for many years. Liyang is connected with WCBA, as the host of China Women's Basketball League and the home division of Jiangsu Women's Basketball Team, due to the comprehensive strength and charm of urban development. Liyang Municipal People's Government and Liyang Municipal Bureau of Culture, Sports, Radio, Film and Tourism have fully supported the league in the past two seasons and made liyang contribution to the revitalization and development of Jiangsu basketball and China Women's basketball League.

2. WCBA LIYANG DIVISION DEVELOPMENT STATUS

2. 1 Awarded WCBA Excellent Competition Area and achieved excellent results

China Women's Basketball League has developed for 18 years up to now, Liyang Division in 2018-2019 season, 2019-2020 season undertook a total of 30 games, Liyang Division with first-class organization, first-class service and first-class level, by the majority of fans, 18 national clubs, CCTV media, Chinese Basketball Association and other high reputation. In the 2018-2019 season, Liyang Division was awarded the honorary title of "Excellent Division" of WCBA League by China Basketball Association, which is really deserved. Not only shows the liyang as a national demonstration base, the national top ten sports leisure sports industry the image and charm of the city, more to promote further popularization and development of basketball in liyang, realize the development of competitive sports and the double harvest of backup talent cultivation, but construction of sports industry in also promoting liyang, the promotion of the national fitness movement has played a positive role. With the support, care and help from jiangsu Provincial Bureau of Sports, Liyang Municipal People's Government, Liyang Municipal Bureau of Culture, Sports, Radio, Film and Tourism and other relevant units, Jiangsu Women's basketball team has won the third place in two seasons. At the same time, Jiang Jiayin, the main player of Jiangsu Women's Basketball Team, competed on behalf of China team, won the gold medal of Women's Three-player Basketball World Cup and was awarded the MVP. In April 2020, Jiangsu Women's Basketball Team was awarded "Jiangsu Workers Pioneer" by Jiangsu Federation of Trade Unions. Xu Chenyan was selected to the National Women's Basketball Team.

2. 2 Take competition as the medium to boost the new development of Liyang city

Increased the influence of the city. Nine media, including CCTV Sports Channel, Tencent Sports, Youku Sports, Sohu Sports, China Sports, PP Sports, Qigoose Sports, Basketball Guest and Toutiao, have formed the WCBA League media live broadcasting Alliance. Since the event was held in Liyang District in 2018, CCTV and CCTV client have live-streamed 4 home games, and other network media have live-streamed 20 games for 30 hours. There are 20 mainstream media reporting Jiangsu Women's basketball team, and the attention of important matches has reached the audience of CBA Professional league (Bayi, Guangdong). CCTV, Tencent, Sina, Jiangsu Sports and leisure channel, litchi news focus on and long-term tracking reports. Liyang division by the vast majority of fans and the national 18 clubs love, through the league media strong publicity, attracted local advertising sponsors, to achieve a win-win situation. In addition, the undertaking of the league also stimulates the consumption of the city and promotes the economic development.

2. 3 Inject vitality into the development of urban basketball

Basketball league market cultivation has established rules. Generally speaking, a city can build a fairly mature basketball market in three years. From the 2018-2019 season, WCBA high-quality sports events will be introduced to Liyang City, with the goal of "sports urbanization, city name card", to drive the development of local sports and cultural industry, improve the market value of Jiangsu women's basketball, which is the strong cooperation, but also to achieve a win-win prospect. During liyang home field, there are 3, 419 fixed seats in total, with an average of more than 1500 fans per game and an attendance rate of 46. 8%. Through two seasons of market breeding, Liyang fans have a certain understanding of women's basketball league, have a strong demand to watch the game, fans of basketball to further improve. For Liyang Basketball Association, the association's subordinate clubs and youth basketball enthusiasts, through participation and watching basketball games for Liyang city basketball project into the sustainable development of vitality.

2. 4 Meet the needs of ordinary people to watch high-level events

Jiangsu Women's basketball team ranked third in the past two seasons. The women's basketball team participated in 30 games in Liyang city, winning 24 games and losing only 6 games. The team ranked third in total scoring, first in 3-pointers made and third in assists for the second consecutive year among 18 teams this season. According to the above data, the excellent performance of the team has increased the attention of the masses in Liyang to the matches of Jiangsu Women's Basketball Team and met the strong demand of the masses to watch high-level matches. The successful holding of the matches has urged the improvement of political and economic benefits.

2. 5 Train a group of local basketball competition professionals

Provincial basketball management Center in the past two seasons to support and cooperate with the liyang division of the work. Through business exchanges, learning and discussion, liyang now has a compound team that can operate professional basketball league skillfully, such as: competition team, security team, electronic equipment and network broadcast team, etc. , which has cultivated professional human resources for the development of the city's basketball. Embodied in, with the CCTV broadcast team work business communication study, organize conference race team to other division view and learning, professional network video streaming system operators to participate in the Chinese basketball association business training, women's basketball team athletes and liyang fans positive interaction, the local basketball team players and team player in hand at the job.

3.WCBA LIYANG DIVISION DEVELOPMENT RESTRICTIONS

3. 1 Improve the comprehensive guarantee conditions of the competition area

Liyang Gymnasium once undertook six CBA preseason matches in 2017-2018 season, and also held china-Australia men's basketball match and China-Cuba women's basketball match, which has the experience of undertaking large-scale basketball matches. However, it is the first time that Liyang division is the main division of Jiangsu Women's basketball team, which is restricted by many factors in the development and promotion of women's basketball league. It mainly includes: first, the local government of Liyang has a single source of funds for undertaking basketball events;Second, there are few professional talents to undertake professional basketball matches;Third, compared with CBA, WCBA women's basketball League has less audience, fans lack of competition rules, and the market degree is not high. It can be said that the operation of the ENTIRE WCBA season should further improve the comprehensive guarantee conditions of the division.

3. 2 Further upgrade the functions of the venue.

Liyang Gymnasium belongs to the small and medium-sized gymnasium in terms of national professional basketball competitions, and is located in a better geographical position, which can fully meet the needs of undertaking WCBA league. Liyang Gymnasium is 74KM away from Lukou Civil Aviation Airport and 100KM away from nanjing high-speed railway. The stadium covers an area of 19097m2 and has 4400 seats. In terms of construction and function use, the stadium is mainly to undertake indoor comprehensive sports events, but the hardware conditions for holding professional basketball league still need to be strengthened, such as the overall layout of functional area, physical training room, venue lighting, live network operation and other hardware needs to be upgraded to a certain extent.

4. ACTIVELY EXPLORE THE FUTURE DEVELOPMENT OF THE COMPETITION AREA AND CONSTANTLY IMPROVE THE DEVELOPMENT PATH

4. 1 Improve the development path of WCBA professional League

As a national sports industry base and a strong sports city in Jiangsu Province, Liyang city constantly around the "sports + tourism" development model, the introduction of international and domestic high-end brand events every year, is committed to creating a nationally known leisure vacation destination and the most attractive leisure vacation city in the Yangtze River Delta. Constantly satisfy the people to new look forward to a better life, efforts to improve the comprehensive strength of the competitive sports at the same time, liyang city people's government in the process of undertaking the WCBA, further perfect the first-class venues, strengthen brand publicity, expand business development ability, improve the level of ability run competitions, enriching the connotation of the sports show, intensify efforts to safeguard the home team to contribute at high level of service conditions and so on.

4. 2 Constantly renovate and upgrade existing venues

There are 7 major provisions and 230 minor provisions in the regulations of cba league competition. It has strict working standards and requirements for venues, lighting, heating, network broadcast, LED large screen, electronic timing and scoring, electronic large screen, audio, various functional rooms and so on. During the season, Liyang division in the Chinese basketball Association, Liyang People's government, Liyang Culture, Sports, Radio, film and tourism bureau of care and support, under the full cooperation of the event executive team, the work is carried out in an orderly manner, successfully passed the Chinese basketball Association venues work inspection. It can be said that Liyang Stadium made full use of the existing venue facilities and resources, venue functions have been further upgraded during the competition, the future can be better used to carry out national fitness and various large-scale activities.

5. STRENGTHEN HIERARCHICAL LINKAGE TO ACHIEVE MULTI-DIMENSIONAL WIN-WIN OUTCOMES

5. 1 Actively expand the influence of Basketball in Liyang

Sports city name card is the city's new competitiveness of "revitalizing the new economy, creating new kinetic energy, creating new industries and driving new consumption". With the help of liyang city name card, the charm of the city of landscape, increase CCTV live broadcast. Fully integrate with The Basketball team of Jiangsu Province, strengthen cooperation, organize excellent coaches and athletes of the provincial team to carry out campus activities, regularly go to Liyang to guide coaches and athletes, work hand in hand to build echelon, constantly expand the audience of basketball, improve the influence of basketball project in Liyang city.

5. 2 Strengthen multi-party cooperation through brand events

Liyang division to undertake home game to strengthen with the provincial, municipal sports bureau, the Chinese basketball association, jiangsu province sports bureau basketball management center, and the linkage of the various organs, departments cooperation, on the basis of summarizing experience to undertake work, leak fill a vacancy, actively planning the new season, with the help of liyang city senior media propaganda, multidimensional and win-win.

6. BUILD GOOD RELATIONSHIPS AND SEEK GREATER DEVELOPMENT

6. 1 Work together to create high-quality brand events

2018-2019 season is independent of the first year of operations, WCBA league 2019-2020 season is the WCBA league following "18" as an adult, yao Ming, chairman of the China basketball association, said in the future to consolidate and develop the WCBA league, on the basis of good work, will make high quality brand competition, innovative perfect competition system, improving service and fans, the media, sponsors experience;To build an innovative business operation system, pay attention to the shaping of league culture, and build a younger, more energetic brand image for business. It can be said that the influence of WCBA league has been heating up continuously.

6. 2 Strengthen contact and cooperation with cross-border units

Chinese basketball association attaches great importance to the work of Liyang competition area, and many times to guide the work. Duan Lian, director of league Department of Chinese Basketball Association, Chen Shaojun, director of Sports Bureau of Jiangsu Province and Party Secretary, Huang Yixin, Party secretary and chairman of Nanjing Iron and Steel Group, and other leaders gave guidance and care to Liyang Division during the league. The successful running of the above season, Liyang division and China Basketball Association, related units, enterprises to establish a good relationship of communication and cooperation, but also WCBA clubs, fans and the community's extensive attention and support.

7. CONCLUSION

Liyang is a new ancient city with a history of more than 2200 years. It is a strong sports city in Jiangsu Province, and also a vigorous and healthy sports city. Liyang and basketball management center of shandong province, held women basketball professional league, this is not only the practice of acquisition secretary about sports work the vivid practice of a series of important speech spirit, but also development of liyang + "sports tourism", and constantly satisfy the people the growing demand for a better life, promote the city's comprehensive strength of a major move of competitive sports.

WCBA for the national team has trained large quantities of outstanding talented person, become the important foundation, China women's basketball team standing in the world basketball league overall healthy and orderly development of the current women's basketball team, and in the continuation of advocate team spirit and tradition, also reflected the women's basketball team league, caring and tolerant culture construction of higher levels of the WCBA league is one of important goals for the future development of basketball in China, at the same time attaches great importance to the WCBA each home division construction development is also important path to promote the development of Chinese basketball. At present, Liyang city after two seasons of full operation, Liyang competition district not only harvest the reputation, in addition to spread liyang city culture.

Starting from the study of Liyang Division of WCBA, this paper can discuss and promote the positive and healthy development of Liyang Division, better assist the cause of China's WCBA professional basketball League, and better provide theoretical support and experience for other divisions to undertake women's basketball professional league.

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The Development Trend of Swimming in China in The Era of Internet Big Data

Yang Li[1], Xing Liu[2]
[1]Department of Physical Education, Hanyang University, Seoul Korea;
[2]College of Sports Education, Shenyang Sport University, Shenyang, Liaoning, China

Abstract: As a sunrise industry in our country, sports industry in our country under a series of government policy guidance, the promotion of national fitness has risen to some political level, with the development of the Internet, the improvement of science and technology, the Internet concept arises at the historic moment, using the Internet to thinking and technical means, combined with the sports industry in depth. As the upstream of sports industry, sports events are at the top of the pyramid in the sports industry chain. Based on this era, it is of great significance to study the development trend of Chinese swimming events in the Internet era. This paper takes the management of Chinese swimming events of Chinese swimming clubs as the research object. Combine the connotation of Internet big data. Characteristics and technical means, as well as the theoretical basis of sports China swimming event management, analyzes the necessity of the combination of Internet and Chinese swimming club events. It also analyzes the current situation of Chinese swimming club event operation and management in the era of Internet big data.

Key words: Internet; Swimming; The development trend

1. INTRODUCTION

The development of China's sports market is still in the primary stage, the national government policy guidance, Internet technology progress, economic market-oriented development, the swimming industry has great potential. In the era of Internet big data, the management mode of Chinese swimming events of Chinese swimming clubs has the following problems: small scale of events and less operation investment. Insufficient interaction of media promotion and publicity of the event. Lack of Internet competition management talents. Problems such as insufficient brand value and slow growth. Draw lessons from the joint promotion of the government and the market to promote competition reform and innovation. With innovative Internet thinking and advanced scientific and technological means, the organization can improve the integrity of industrial chain and enrich the utilization of alliance resources. The entry threshold is low and convenient, and the participation mass base is huge. At the same time, it attaches importance to the construction of its cultural connotation and promotes the successful experience of healthy sports concept. It proposes to highlight the advantages of the competition in the setting of the schedule by creating the EVENT IP, and firmly develop the organization and development of happy swimming. Swim healthy. The concept of safe swimming; Comply with the development trend of social market economy, implement the national fitness plan, make full use of Internet thinking and technical means, optimize the operation and management mode of the event, improve the level and quality of the event, so as to improve the industrial resources ecological chain. Through swimming this mass foundation profound project, vigorously promote the development of national fitness, promote happy swimming. Swim healthy. The concept of safe swimming stimulates the enthusiasm of the masses to participate in sports activities. At the same time, Chinese swimming clubs include industry talent through integration. Sports venues. Media resources. Commercial resources, to create a sports industry value platform in the way of market operation, promote the healthy and vigorous development of the sports industry.

2. DEVELOPMENT STATUS

First, as the first non-governmental organization in the domestic swimming field, swimming club industry organization is very forward-looking, but there is still a long way to go in the future. Under the promotion of government policy planning and market economy, the folk competition industry is developing and growing, and the competition organization in the form of clubs is bound to become the development direction of the transformation of domestic sports competition mode in the future. The research of this paper provides theoretical basis and reference for the transformation of swimming competition mode and the development of the combination of Internet + and traditional industry, which can provide beneficial theoretical help for sports events and thus promote the development of sports industry and swimming events. It has strong theoretical significance. Secondly, in the context of adapting to the development of China's market economy, combined with the development needs of the national fitness system, with Internet big data network platform and information technology means, analysis of the deficiencies in the management of sports Chinese swimming events, the events are networked. Intelligent operation management, and in view of the problem based on the corresponding countermeasures and suggestions. It is helpful to promote the future operation management and long-term development of the event, so this paper also has strong practical significance. Finally, the competition system of our country is in a period of transition, and the development of sports competition of the whole nation system is gradually changing under the current market-oriented economic environment. The development of folk sports organization and involvement and the rise of Internet big data of traditional industry has become the impetus of the development of traditional industry, is still in the primary stage of the development of sports industry in our country, the relevant competition system reform and the combination of China's swimming events with big data management and Internet is less, so the research in this paper provides a larger can explore space, It makes up for the gaps in Internet big data and Chinese swimming event management research, and provides a broader vision for the development of swimming events.

3. DEVELOPMENT TREND

Internet plus Sports is the comprehensive use of the Internet. The new generation of information technology, such as big data, takes the Internet as the platform, takes the public's sports demand as the leading, integrates all kinds of sports resources, optimizes and upgrades the sports industry chain, transforms the development mode of the sports industry, promotes the transformation and upgrading of the sports industry, and realizes the new industrial mode and form of the full integration of the Internet and sports. The concept of Internet + sports is not a simple Internet technology + sports industry, the purpose is to use the Internet technology means to integrate with the sports industry. Internet big data is the further development of Internet thinking mature practical results, drive and enhance the vitality of social economic entities, for the reform of traditional industries. Innovate to provide a broad information service platform, excavate and utilize the role of Internet technology in sports industry model optimization and resource allocation. Internet big data sports is mainly reflected in sports events. Physical fitness. Sporting goods. Sports tourism. Sports real estate. Sports training and sports big data. Make the new sports industry share. Intelligent. Data characteristics. Operation management of swimming events as a resource. The process of data fusion, through the integration of Internet big data technology can achieve this goal, optimize the allocation of resources. Provide accurate, fast and effective competition layout. Scientific and reasonable arrangement of the games and results announcement and other content changed the past artificial stopwatch timing. In the era of long paper results announcement and high error rate, innovation, and optimization of Chinese swimming event management mode, promote the development of swimming competition.

3.1 Pre-Competition

The pre-competition section includes the composition of the event organizing committee. Competition management and market development. The event will release relevant competition rules and registration information through WeChat official account. Use Twitter. WeChat publicizes the competition and the composition of the organizing committee and announces the competition management methods and news media publicity. Through the combination of the online registration system of Suzhi Sports and the event programming program, the list of registered athletes will be compiled into the order manual.

3.2 Part of the competition

Part of the competition includes the development of supporting activities and the announcement and release of the comprehensive results of the event media publicity, as well as the guarantee status. Chinese swimming club events through the automatic/semi-automatic electronic timing system developed by Suzhi Sports, the results can be directly imported into the list, and the real-time results can be directly displayed on the big screen. During the competition, the results of the athletes will be directly released through the APP of Suzhi Jingyitong, and at the same time, the results will be released through the major news media. Weibo. WeChat. Print media and electronic media platforms broadcast the events.

3.3 Post-Match Part

After each Chinese swimming club meet, the athletes. The coach. Parents can query the results through the APP, and can query the results of historical events, and compare the results of athletes in the past, which will help improve their training in the future. Internet big data mainly includes cloud. Net. End three parts; Includes cloud computing. Big data. The Internet. The Internet of things. Intelligent terminal. APP and other technical means. With Internet thinking and technical means, combined with the practice of China Swimming club China swimming event management process, deep integration and application. Using the multi-event system developed by Zhongyong company, Suzhi Sports provides a complete solution for swimming events from pre-race online registration. Choreographed, to the competition inspection. Automatic timing. Results will be released in real time. Large screen display, and query results after the race. There are corresponding products for the result analysis, which have been tested by many national large-scale competitions. Meanwhile, we also provide a mobile APP called Zhizhijingtong, which can query the information of swimming events anytime and anywhere, realizing the Informa ionization of swimming events.

4. ANALYSIS ON THE CURRENT SITUATION OF CHINESE SWIMMING EVENT MANAGEMENT MODE IN THE ERA OF INTERNET BIG DATA

Sports management system refers to the general name of the system and the organization of sports management. Permission division. Operation mechanism, etc. It is the organizational guarantee to achieve the overall goals of sports. Integrating the current sports management system in the world, it can be divided into three types: government management, social management and comprehensive management. Among them, the government management system, that is, the government departments as the main body of sports management, especially sports events, performance is directly involved in the process of competition. This system is generally applicable to the operation and management of sports events under the planned economy environment, which is conducive to the rapid integration of limited resources and the realization of organizational goals. However, it is passive in mobilizing all sectors of society to participate actively. The social management system is completely managed and operated by various social sports organizations. This system is generally applicable to the operation and management of sports events under the environment of market economy system, which is conducive to fully mobilizing and giving play to the enthusiasm of all aspects of society. The internal management of sports organizations is not subject to interference from political policies and other aspects, and the operation of competitions fully conforms to market rules. But this kind of management system lacks the whole coordination and unity at the macroscopic level; Comprehensive management system is a cooperative management system between government leaders and social organizations. In this system, the government carries out the macro-management of sports, and social sports organizations operate microscopically under the macro-management of the government. The system is conducive to government coordination of action, mobilize the enthusiasm of people from all walks of life to participate in and support sports events, has become a major trend of sports management system. Chinese swimming club belongs to the management system of social management, which is a national single sport event.

4.1 Influential factors of Internet big data on China's swimming management mode

Through the competition as the core, using the Internet as the technology, through the huge user market, form a good sports industry ecological chain cycle. The Internet information platform makes use of the huge, big data processing system and the use of mobile terminal infrastructure to clearly locate user needs and collect user information. Storage. Analysis. Although the swimming industry accounts for a small proportion of the overall sports market, it attracts more users and commercial products by using the long tail theory on the Internet platform. Not only tangible goods, but also information services such as accommodation and travel can be collected and classified using Internet technology. Sponsors related to swimming events. Undertaker. Brand value and consumer users have obtained high-quality and rapid supporting services for swimming events. The development of swimming events can improve economic benefits and market development through the intervention of the Internet. As a member of the chairman unit of the event and the designated official timing brand of the swimming event, Digital Intelligence Sports has successfully developed the third generation of semi-automatic electronic timing device, which was used for the first time in the event and has been highly praised by the organizing committee and participants. The timing accuracy of the system. The stability and safety are far beyond the technical service standards stipulated by FINa. It can be installed quickly and the timing error is within one thousandth of a second. At the same time, it can automatically record the results in real time and announce the results directly through the big screen. On June 18, 2016, the swimming industry Internet operation platform was officially launched. Through the self-operated wechat public account platform and the online Chinese Swimming Club APP, a series of services such as the release of relevant events, news and information, swimming training registration, swimming event registration, venue booking and so on can be completed online. On January 16, 2019, the event big data center was established. Through cooperation with Shandong Zhongyong Sports Co., LTD., various services such as information management of athletes and parents, real-time result release, club record management, result ranking management, and historical result query can be completed on the APP software of the Event. Athletes and parents can check training and competition results directly through data. Meanwhile, China Swimming Company also provides comprehensive big data management services for Chinese swimming clubs, including the number and distribution area of athletes through the above data. The overall performance of age group athletes in each member club and the annual development status. The establishment of the big data Center for swimming club events is an important part and starting point of the construction of the big data application platform for the national swimming events industry. As the chairman of the unit and an important builder of the national swimming events information service platform, China Swimming shares will be released from the information. Race schedule management. In order to provide complete big data services and application solutions for swimming events, we continue to explore and explore the application value of big data for swimming events. This will also become the use of big data to reconstruct the industry DNA. The important attempt to arouse the vitality of industrial development will definitely have a positive and far-reaching influence on the development of Chinese swimming cause.

5.CONCLUSION

The successful experience of Chinese swimming Club's Chinese swimming event management mode in the Era of Internet big data: The government and the market jointly promote and promote the competition reform and innovation. The Internet is innovative in thinking and operation and advanced in science and technology. The integrity of the organization industry chain is high, and the utilization of alliance resources is rich. The entry threshold is low and convenient, and the participation mass base is huge. The competition schedule is diversified, and the reward mechanism is rich and innovative. Pay attention to the construction of its cultural connotation, promote the concept of health movement. In the era of Internet big data, problems exist in the management mode of Chinese swimming events of Chinese swimming clubs: events are small in scale and less investment in operation. Insufficient interaction of media promotion and publicity of the event. Lack of Internet competition management talents. The brand value of the event is not enough, and the growth is slow. In the era of Internet big data, the favorable factors of Chinese swimming clubs' Management mode of Chinese swimming events: market trend guided by policies. High integration of Internet industry. Swimming has a solid mass foundation. Constraints of China Swimming Club's Management mode of China swimming Events in the era of Internet big data: incomplete construction of relevant legal environment. The competition is fierce and the competition starts late and develops long.

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Colleges Host Basketball Tournaments to College Basketball Culture Development Impact Studies

*Meng Chen, Xue Hongwei**
Department of Physical Education, Henan Polytechnic University, Jiaozuo, Henan 454000, China
**Corresponding Author.*

Abstract: Basketball activities as one of the main parts of the school physical education curriculum, in the cultivation of basketball and other fun activities love good, but also promote the students' own health to flourish, develop students' good willpower character Improve the spirit of unity and cooperation. Compared with other sports, the greatest charm is to be able to adapt to all kinds of people, basketball itself has the leisure, exercise, collaboration is very suitable and conducive to people's daily physical and mental health needs. Basketball is accompanied by intense muscle collision, tacit team cooperation, strong sense of competition, which is also an important factor for basketball to become a favorite of many students in colleges and universities. The deepening reform of campus basketball in China has developed towards the direction of national strategic policy, thus improving the reserve strength of basketball personnel training and national selection of basketball professional athletes, and thus revitalizing the development of basketball in China. By hosting basketball events, schools can more fully demonstrate the innate appeal of basketball, physical collisions, group collaboration, uncertainty, and the immersive way to enjoy the game through a live audience. And this characteristic can attract more college students to understand the love and devote themselves to basketball as a sport, but also can promote the development of college campus basketball culture, improve the campus basketball atmosphere It is beneficial for colleges and universities to improve the cultivation of students' interests and hobbies in traditional teaching, to improve students' enthusiasm to participate in basketball, to make the teaching process more smooth, and to improve teaching results.

Key words: College; Basketball; Campus Culture

1 THE DEVELOPMENT STATUS OF COLLEGE BASKETBALL CULTURE

The current situation of the construction of college basketball culture in China, because of the high ornamental and fierce confrontational nature of basketball, makes it widely welcomed among college students. With the comprehensive deepening reform of quality education and the further development of Chinese college basketball league, in recent years, a solid foundation has been built to promote the establishment of college basketball culture. Although most colleges and universities have formed a better basketball atmosphere, there are still some problems in the construction of college basketball culture. 1 The material infrastructure is not perfect, the investment of the construction funds of the sports stadiums of colleges and universities is less, which leads to the backwardness of the sports facilities of the universities, the smallness of the sports venues, and the old infrastructure of some of the stadiums The development of related sports activities can not be effectively supported by the field, which is not conducive to the construction and development of college basketball. 2 The imperfection of the school education system culture, at the present stage of the establishment of the school basketball culture, the traditional single mode teaching method is not conducive to the cultivation of college students' interest in sports And the monotonous teaching content and curriculum indoctrination make students simply imitate, thus reducing the enthusiasm of students to learn. 3 For the school basketball activities of low importance, held less basketball activities, indirectly lead to the management system is not perfect, low student attention, campus basketball atmosphere is poor, Thus, the development of campus basketball activities has stagnated, which is the main factor in the construction of campus basketball culture.

2 THE INFLUENCE OF HOSTING BASKETBALL TOURNAMENTS ON THE DEVELOPMENT OF COLLEGE BASKETBALL CULTURE

Basketball, a competition based on basketball. Basketball games have many forms of expression, both the more common five-a-man basketball game, and now popular street three-a-player basketball game, is a three-to-three competition form, but also pay attention to personal technical level. At present, there are many basketball tournaments in China, mainly divided into professional CBA professional leagues, amateur competitions, college competition CU series college basketball games, large-scale commercial games and invitational tournaments, colleges and universities can apply to host college basketball games, National U-Series Basketball, CBA Professional League, Take Advantage of the Influence of Major Basketball Events, and The Level of Activeness of the Atmosphere of Live Games To promote the development of college basketball culture.

2.1 Promote the improvement of basic site facilities

High-level international basketball tournament is a competitive sport, there is a great demand for stadium resources. For college basketball courses, professional basketball teaching places and training venues can effectively solve the needs of the school basketball curriculum. However, due to the school's insufficient investment in sports curriculum, and the low degree of attention, the number of school basketball curriculum is insufficient to meet the needs of students' physical exercise.Or the basketball field waste basket damaged the aging of the venue, the quality of the venue does not meet national standards. In addition, because most schools in the basketball stadium aging, coupled with the strong competitive confrontation of basketball activities make it have certain risks, so that basketball activities and learning process has a great security risk, is not conducive to the smooth development of school basketball teaching. If colleges and universities must meet the requirements of high-level basketball tournaments, they need to pay more attention to campus stadiums, increase the investment of stadium infrastructure, and improve the standardized facilities of playing venues It is the basic requirement for the basketball match. The organization of basketball tournaments requires the campus to have a sufficient number of venues for the participating teams to conduct pre-match training, which to a certain extent also promotes the construction of campus basketball facilities. The improvement of site infrastructure is conducive to avoiding the emergence of safety problems in teaching. Professional basketball teaching ground can effectively reduce the risk of students' injury in basketball learning, to a certain extent to ensure the safety of students, but also to ensure the smooth development of basketball teaching activities, for some high-risk adversarial movements and technical learning also have a certain degree of protection. The increase in the number of venues can meet more students to participate in basketball, and physical training, relax the mood to promote the physical and mental development.

2.2 Improve students' basketball enthusiasm and improve learning outcomes

Enthusiasm is a form of emotional expression. This performance is positive and upward. This emotional force directly leads to a spirit of uplifting and ungrateful work attitude. It is under the inspiration of these emotions that students' interest in class and desire for knowledge are mobilized, so that these two emotions can be brought together and taught in the process, in order to get the best teaching results. Colleges and universities host basketball tournaments, which can enable more students to watch high-level basketball games on the spot, under intense physical confrontation and visual impact, to hit students directly into the heart. Live watching of the basketball game, easy to be the atmosphere of the scene to drive the whole person into the game atmosphere will be more people into the scene, basketball court wonderful passing, cooperation, dunks, three points, give people a feeling of excitement It can eliminate annoyance and relieve stress. By watching basketball games live, students can greatly enhance their enthusiasm for basketball, and in the course of watching the game, students will cooperate by running the players on the field Learn about some techniques and tactics, but also pay attention to the favorite player's technical action and playing style, and then in the process of playing to imitate learning. This can enable students to learn in basketball lessons, more active rather than simply for the sake of credit, improve the original inherent situation of teachers blindly indoctrination, students will be more active learning technical action. Not only in basketball class to learn basketball for basketball, after class will also go to basketball exercise.

2.3 Create a strong campus basketball atmosphere

Colleges and universities can attract a large number of students to pay attention to basketball, through the broadcast of basketball tournaments publicity and promotion, after a long period of accumulation and development, the formation of their own characteristic campus culture, the formation of the school's traditional cultural heritage. To create a strong atmosphere of basketball not only makes students participate more in basketball sports, but also is a kind of spiritual and cultural heritage, the composition of which is multi-layered.There is both the spiritual culture inherited by the predecessors, but also the artistic style with campus characteristics. Therefore, it is of positive significance to promote the construction of college basketball culture. It promotes students' mental health and cultivates the values of lifelong sports. Cultivate the enthusiasm of students to participate in basketball activities, so that students with greater passion into basketball activities.Thus promoting the physical development of students, students can also have a stronger body to complete their studies, and in the future into the socialist cause of construction second, With the development and popularization of basketball culture in schools, it will make the strong basketball culture have the ideological recognition in the course of basketball activities, and then produce a love for basketball. And love is the best motivation to keep going. The number of people participating in basketball activities has increased and the basketball atmosphere has become more intense. Basketball is a kind of group sports, team sports, through active participation in it, students can develop the initiative, participation, unity, hard workof good character, the students will, group honor, collective communication ability, anti-pressure ability, group collaboration ability, such as the cultivation of positive

2.4 Promote the development of basketball clubs

The development of large-scale student basketball tournaments can also promote the development of school basketball associations, and there will be many positions in the school basketball tournaments that require students to volunteer and recruit more volunteers. The students of the Basketball Association have been responsible for school-level basketball and faculty basketball tournaments all year round, and have served as the organizers, management and It will be better to decide and pre-judge the intensity of a single match according to the ranking regulations and to be responsible for the reasonable adjustment of the referees. Therefore, the students of the basketball club are directly involved in the work of the large-scale basketball tournament, which is conducive to the smooth running of the basketball tournament on the one hand, and also gives the students more learning opportunities on the other hand, after the campus basketball club is exposed to high-level events, We can summarize the shortcomings of previous work, the loopholes in the system, improve their own development, and provide a higher quality protection team in future campus basketball games. Because it is not just ordinary campus basketball games, but large-scale basketball tournaments at a higher level will increase the enthusiasm of students in the community, and will attract more students to participate in the community The basketball club will also gradually grow, recruiting more people to join the club and providing a lasting impetus for the development of the club.

3 CONCLUSION

With the comprehensive deepening reform of quality education and the further development of national college student basketball, the construction of national school basketball traditional culture plays an increasingly important role in enriching the cultural connotation of students' campus, cultivating students' social ability and establishing students' lifelong sports values It is of great significance to promote the further development of basketball in schools all over the country. After holding basketball tournaments, the school has gradually established its own cultural tradition of college students, and after further construction of basketball culture, not only can the connotation of the cultural tradition of college campuses be further enriched It can also effectively improve the interest and polarity of our young college students in basketball, so that our young college students gradually form a healthy sports will and sports habits, thus promoting the growth of our young college students. Similarly, by establishing a college campus basketball culture, you can also establish a campus basketball culture with local characteristics, so that school basketball activities can be more vigorous development. Schools should adopt various methods to develop rich school basketball traditional cultural connotations, and use various conveniences to expand the development of school basketball activities In order to promote the prosperity and development of campus culture in colleges and universities more rationally and comprehensively. However, the school's basketball culture construction in the current stage is still facing the problems of inadequate facilities, lack of social and cultural propaganda, in the process of further increasing the campus basketball culture construction Improve the campus basketball management system and campus infrastructure, and strengthen campus basketball culture publicity to help spread the campus culture and promote the development of campus sports through attention and active play to the functions of the college basketball community For the rapid development of China's basketball cause to create a good foundation.

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Brand Marketing Research of Sports Technology Brand Keep

*Wang Ran, Liang Huawei**
Department of Physical Education, Henan Polytechnic University, Jiaozuo, Henan 454000, China
**Corresponding Author.*

Abstract: The sports and fitness industry has ushered in a rather bright development opportunity under the environment of various national policies to enhance national health, and the brand marketing strategy of sports and fitness enterprises has a significance that cannot be ignored for the development of the enterprises, and excellent brand marketing is often an important asset for an enterprise to be invincible in the market. This paper takes the sports technology brand keep as a research case, analyzes its brand marketing strategy, discusses the specific implementation of its strategic means, and the outlook on the future development of its enterprise.
Keywords: Keep; Brand Marketing; Sports Technology Brand

1 BRAND MARKETING OVERVIEW

In 1127 A.D., the world's earliest brand advertisement appeared in China, the "White Rabbit" copper plate of "Liu's Kung Fu Needle Shop" in Jinan, Shandong Province, Northern Song Dynasty. This shows that the concept of "brand" has a very long history. Until the early 20th century, marketing was gradually separated from other disciplines such as economics and began to form an independent discipline, brand marketing this marketing concept also gradually matured with the development of marketing.

Brand marketing is mainly refers to the process of injecting intangible assets into the brand through various marketing means to assign value to the brand, so that customers can form the expected perception of the brand and products. Brand marketing focuses on brand spirit, brand image, brand personality and communication with stakeholders, aiming to build a strong brand equity through the psychological positioning of the brand in the stakeholders and the integration into consumers' lifestyles and values, and the establishment of a competitive barrier[1] .

2 OVERVIEW OF KEEP'S DEVELOPMENT HISTORY

Keep fitness app was officially launched in 2015, and it received $32 million in Series C funding in May 2016, and the number of Keep fitness app users reached 100 million in August 2017, and the overseas version of Keep fitness app was also launched in the same year, Keep fitness has been established in 2015, just like its brand name, and has kept progressing and developing in each year, expanding Keep Fitness has expanded its offline fitness stores, smart bikes and treadmills, smart bracelets and healthy light food, multi-category products and services covering food, wear and practice, online interactive live classes and many other products and services. By now, Keep has become a sports technology ecological company that has completed $360 million in Series F funding, and Keep Fitness App has long been upgraded from a simple fitness app to a sports technology platform that integrates more comprehensive sports and health-related resources today. But keep is not the earliest group of companies providing online fitness services, before the birth of keep fitness APP, goudong and yuekou circle providing running services, sugar beans for square dance lovers, daily yoga for more female users, and xiaomi sports linked with xiaomi[2] bracelet all had a place in the market at that time, and were able to kill in many competitors and have been in a more The value of its brand marketing should not be underestimated.

3 KEEP BRAND MARKETING STRATEGY ANALYSIS

The target customers of Keep are young people who have simple fitness needs but lack basic fitness knowledge. Just like the marginal effect in the concept of economics, the process from basic to mastering basic concepts is relatively easier, while the sprint from high score to higher score is much more difficult than the learning from zero to mastery, and the demand of fitness whites for zero to begin is also generally higher. It is a high degree of adaptability for fitness professionals who do not have enough time, energy, space and financial capacity to directly connect to their pain points. This point is also fully reflected in its marketing strategy.

3.1 Sensory marketing

Sensory marketing is also known as the five senses marketing, mainly divided into visual, auditory, smell, taste, touch five categories, keep the main sensory marketing is mainly focused on visual and auditory these two aspects, visual compared to other similar products UI design is often bright colors, impactful pictures to highlight the sense of movement of their own products, keep fitness is the choice of subtractive design, a light sense of movement, a sense of movement. The simple, clean and elegant service interface has become its main sensory experience. In terms of hearing, Keep fitness courses often have clear slogan instructions, for new users to train when the problem, in the recording process of the course has been done in advance to make a prediction, often to achieve accurate point, while the course also set similar to "hold on for 5 seconds" and other similar encouraging audio, users can also be based on personal Users can also choose the background music in the exercise process according to their personal preferences. According to the data of Eview Thousand Elephants, Keep users are mainly concentrated in first and second-tier large and medium-sized cities, accounting for more than 3/4; the age of users is mainly under 35 years old, accounting for about 75%; the ratio of men to women is nearly 1:2[3]. The sensory marketing of Keep is a combination of the characteristics of users and the corresponding sensory marketing of its products.

3.2 Emotional marketing

Keep has attached great importance to the emotional marketing of the brand since its inception, and its brand name "Keep" is the meaning of "to stay in a state, position, or place without changing or moving" , which implies that exercise is accompanied by persistence, and the company has always maintained the meaning of providing users with high quality. Keep has gradually become a symbol that represents people to start and persist in sports. And Keep's emotional marketing is much more than that.

3.2.1 Brand story

From Chanel to Swarovski, from Alibaba to Byte Jump, almost every brand has a story of its own birth, and Keep is no exception. Using its founder Wang Ning's internship experience and weight loss story from his college days as a blueprint, it tells the reason and process of the birth of keep and shows the function and value of the product. The use of Wang Ning's weight loss story also brings the product closer to the target users and their products, enhancing the sense of camp of the target users and strengthening the attractiveness of the product, and Wang Ning has also become a role model for countless weight loss and plasticity target customers.

3.2.2 Brand tagline

Whenever users open the keep fitness app, the first thing that comes to mind is the phrase "self-discipline gives me freedom", which is a philosophical slogan from the first keep commercial that has not only become a bible for keep users to stick to exercise, but also a motto for countless people who want to stick to self-discipline. Strongly stimulate the enthusiasm of the user to adhere to the fitness, in the following years also launched the "which what was born so, just we adhere to every day", but also poke the heart of countless users.

3.2.3 Brand and life

In the past two years, keep began to consciously integrate the brand more into the user's life scenarios, the commercial "Fear is right" to encourage users to face difficulties from the perspective of different life experiences, "This is all keep" commercial, will be dumping garbage, fighting flies, subway and other near In the "Keep" commercial, nearly ten life scenes such as taking out the garbage, swatting flies, and getting off the subway are connected to the various functions of the product, and the target users have a more intuitive understanding of the services provided by the product while resonating quickly.

3.3 Word-of-Mouth Marketing

With the support of the Internet, word-of-mouth marketing in the fitness industry has become much more efficient due to its wide audience and fast dissemination. Word-of-mouth marketing in the fitness industry under the background of "Internet+" can make consumers more aware of the fitness industry, increase their interest in the fitness industry, improve the visibility of the fitness industry, and promote the development of the fitness industry. 4000 users for internal testing, and in major fitness enthusiasts gathered in various places such as forums, posting, etc., to share the experience of using the product, through the form of word of mouth, the keep fitness APP to promote. In 2017 on the happy camp guest Zhu Yawen recommended keep fitness to the audience, celebrity word of mouth is often more attractive, and often more able to win the consumer's trust, in the show broadcast the day keep fitness will add 1 million users.

3.4 Data platform marketing

Marketing through Internet data is an indispensable marketing activity in the Internet era. keep fitness collects user information through various platforms on the Internet, uses the big data system to collect and organize data to profile users, and targets target users who frequently pay attention to fitness, plasticity, weight loss and other related content, and places product-related ads to attract users' attention. keep fitness APP was launched before keep microblogging started operating on October 30, 2014. The WeChat public number also began to operate before the launch of APP, public number tweets not only include fitness science tutorials, fitness stories, and, such as "Beijing LiveHouse Play Guide", this kind of life guide, although not related to fitness, but rich public content, more likely to give followers a more recognized psychological impression, these also for the development of APP has also laid a solid When the APP Store was launched, keep launched a follow and forward gift campaign in Weibo, which received a lot of retweets. After that, on February 10, 2015, the promotion was released through the microblogging account "app bacteria" and forwarded by a group of microbloggers such as "memory special vest"; on March 17, 2015, the promotion was carried out jointly with the microblogging account "app mushroom boy". On March 17, 2015, we joined hands with the Weibo account "app mushroom boy" to promote the app, which greatly increased the brand exposure rate. These operations and promotions gave keep a large number of users in the APP store and gave keep a higher visibility. At the same time keep fitness also in a popular platform, ShakeYin, Xiaohongshu and so on to open an official account, which because of ShakeYin full of traffic, keep in the platform set up a number of official accounts, the greater the possibility of increasing the exposure of its products.

3.5 Public welfare marketing

Since 2016 keep has been in the public welfare activities, has been in Qinghai, Xinjiang, Shaanxi and other places for the poor areas of elementary school to build a total of about 2, 000 square meters of sports field, launched "I invite you to sleep" "support book support teenagers" "I'M YOUR EYES" and other public welfare activities focus on the problems of episodic sleeping sickness, teenagers reading, visually impaired runners, keep fitness through public welfare marketing, while highlighting a sense of corporate social responsibility, but also greatly enhance the goodwill of the target users for the brand, and promote the development of corporate brand public relations to the good development.

3.6 Event marketing

Time marketing has also been made event marketing, through the user to attract activities to actively participate in corporate activities, and thus expand the promotion of products. Since 2016, keep has carried out a number of events such as "Eliminate 0km", "Earth Day" fat loss ride, "Fun Run North Horse" and so on, which have gained wide attention.

4 KEEP'S BRAND MARKETING INNOVATION STRATEGY

On June 26, 2019, Keep held a brand marketing open day in Shanghai with the theme of "K new life, free domain see" and announced its new marketing system -up panoramic ecological marketing[4] . Its panoramic marketing penetrates marketing from five aspects: sound, power, sound, heat and energy, forming a marketing scene and realizing a full range of penetration marketing. In its constructed marketing scene, its brand marketing strategy is also more innovative.

4.1 KOL marketing

KOL marketing continues to rise in recent years under the auspices of the rapid development of the Internet economy, KOL refers to key piont leader, that is, key opinion leader, keep as a sports vertical platform, will more often choose the sports leaders who have a key voice in sports and fitness. From "jessie was registered" and "Derek Big Jun" who lived in the early days of the platform to "Pamela" and "Saturday Wild Zoey" who later had high attention in the whole network. "Saturday Wild Zoey" has a certain influence of sports and fitness KOLs for keep to attract a large number of users. The combination of celebrity traffic and KOLs has injected more vitality into keep's brand marketing. The queen of the vest line, Yuan Shanshan, perfect body Li Xian, ant waist Zhao Liying and so on in the entertainment industry because of the more excellent body conditions and attention of the flow of stars, through cooperation with keep recording fitness guidance video, launch star volume activities, have a large fan base of celebrity group is for keep to attract millions of flow.

4.2 UGC content marketing

UGC is the user original content, keep fitness APP at the beginning of the creation of the emphasis keep is a sports social platform, users can share their own fitness experience, fitness results or other original content in the platform, other users can share their various social dynamics of the likes, comments and other content interaction greatly promote the active degree of APP, the platform itself will also invite sports and fitness The platform itself also invites more excellent practitioners in the field of sports and fitness to share their experience and skills and diet plans in the social section of the platform, and the platform also relies on UGC to launch various online challenges and generate interesting data reports to attract a large number of users to participate.

4.3 Brand co-marketing

Brand joint marketing refers to the cooperation between the company's own brand and other products to promote, jointly launch products and share product resources. Keep has also released its brand partner program "K-Partner". Partners include Everbright Bank, Quaker, Link, BEATS, Coca-Cola, lululemon, and other brands. For example, through the cooperation with Mary Kay, Keep and Mary Kay share the process of becoming beautiful with users, attracting a large number of beauty chasers and achieving win-win cooperation between the two brands through the combination of their respective influence.

5 SUMMARY AND OUTLOOK

In April 2021, the number of Keep users exceeded 300 million, monthly active users exceeded 30 million, and the sales scale of online channels alone, exceeded 1 billion yuan [5]. This is inseparable from keep from the beginning of the establishment to today's attention to their own brand marketing, keep's brand marketing no matter what strategy is used, are on the basis of a clear target users and the development of marketing strategies, clear user characteristics in the selection of marketing strategies to develop specific marketing tactics will be less error rate, keep's innovative marketing strategy is more integrated marketing of resources, through the flow to promote Flow, to achieve the purpose of brand marketing. After attracting a large number of users keep should pay more attention to the issue of user activity, due to the existence of similar competitors, keep may face the problem of user loyalty is not high, in the future keep in adhering to the brand marketing at the same time also due to focus on improving user activity, and thus promote the better development of the enterprise.

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Research on Hybrid Teaching Mode of Tax Inspection Course

Rong Zou
School of Finance and Public Administration, Anhui University of Finance and Economics, Bengbu 233030, Anhui, China

Abstract: Nowadays society to the requirement of increasing the accounting personnel, not only should have solid knowledge of accounting theory, also should have accounting moral judgment and the ability to solve the actual problem in accounting is a theory combined with focusing on the subject, not only to solve the problem of what and why theory, but also must solve the problem how to do the actual operation. This puts forward new requirements for accounting teaching, and it is necessary to cultivate compound applied accounting personnel with new knowledge, practical business operation ability, professional judgment ability, independent analysis and problem-solving ability, good communication and coordination ability.

Key words: tax Inspection; Curriculum Model; Blended Teaching

1. INTRODUCTION

With the development of China's economy and the demand of accounting internationalization, economic construction and social development have increasingly diversified requirements for talents. We need not only talents with systematic theoretical knowledge, but also high-quality workers with innovative spirit and entrepreneurial ability to carry out technology dissemination and application in all walks of life. As far as accounting major is concerned, a large number of compound applied talents are needed, that is, accounting personnel with new knowledge, practical business operation ability, professional judgment ability, independent analysis and problem solving ability, good communication and coordination ability. Accounting education training object is has a certain theoretical knowledge and strong practice ability of applied talents, one of the key accounting teaching reform is to strengthen the practical link, with its remarkable characteristics and irreplaceable role, to promote the development of accounting teaching continuously and perfect, abundant, achieve the combination of theory teaching and practice teaching.

The classroom theory teaching of tax inspection course is abstract and difficult to understand. If we want to combine accounting theory with practical operation in the teaching process, we should go to the on-site unit to observe the practical operation. However, due to the accounting work environment is not suitable for centralized practice in the contract field and the seriousness of accounting work, confidentiality and lack of practice funds and other conditions, the possibility of practical operation to the scene and the effect is difficult to achieve. Then, the conception and practice of how to combine the theory and practice of tax inspection in hybrid teaching emerged at the historic moment.

2. BASIC THEORY OF BLENDED TEACHING MODE

2.1 Teaching Theory

Today, the research methods of education scientific research method and representative is the Soviet educator great husband founded by teaching him, he thinks that quality education is the comprehensive development of education and personality education in the development of the harmony of education, and believed that education should walk in front of development, promote the general development of students, the students' individual character development, the teaching method should be as large as possible Effect to promote the general development of students. The main goal of teaching is development. Development is not only the development of ability, but also the development of students' personality. The more the society develops to a higher level, the more people need comprehensive and harmonious development. Therefore, our teaching should pay attention to the combination of rationality and irrationality, intelligence and non-intelligence factors, so as to cultivate students' integrity of personality with the integrity of teaching. The guiding ideology of the teaching of praise word husband provides an important theoretical basis for us to carry out simulation teaching.

2.2 Case teaching theory

Influenced by the historical tradition, the education department hopes to achieve this requirement by expanding the content of textbooks, increasing the number of classes, and carrying out encyclopedic education. It didn't work out as expected. Example teaching theory is produced under such background. Krafsky once came to China to give lectures and introduce the theory of exemplar teaching. Example teaching theory tries to overcome the disadvantages of traditional teaching. Wagen Schein thinks that traditional teaching process pursues systematic Ness and teaching perfection, and teachers always want to teach the subject from beginning to end without missing a bit. In fact, the teaching is in a hurry in front of a large number of textbook contents, students in this kind of teaching process, the intellectual activities are rented in a pile of materials, there is no systematic understanding. Wagenschein believes that a distinction should be made between systematic knowledge and systematic teaching materials. Teaching should enable students to acquire systematic knowledge rather than memorize so-called systematic knowledge material. In order for students to gain a systematic understanding, teaching should be strengthened, some parts deepened, and the main points highlighted. These key pieces of knowledge are examples. Example teaching is to organize teaching by example way, and students can get a glimpse and see the whole result by mastering the demonstrative materials selected from the basic concepts and basic knowledge. The exemplar teaching process generally goes through four stages: exemplar illustrating the individual stage, that is, exemplar illustrating the characteristics of the whole through one or several typical examples of the whole, exemplar illustrating the class stage, that is, classifying the knowledge gained through the individual stages, Inference, the purpose is to make the students from learning migration to the class learning, this kind of things master the rule of stage common features of the example, through two stages of cognition, to further explore the regularity of the sample to get first-hand experience about the world relations, namely in the stage of the teaching on the basis of the experience and life experience about the world.

Example teaching attaches importance to the basic nature and foundation of teaching content, and it accords with the characteristics of students' understanding of things in the teaching process. It emphasizes on guiding students to study independently, highlighting the awareness of problems, and organizing teaching by relying on students' initiative and enthusiasm in learning, which reflects the development trend of modern education.

2.3 Situational learning theory

Brown, Collins and Du Jisui published their famous paper situational cognition and Learning Culture in the Journal of Educational Researchers, which systematically and completely discussed situational cognition and learning theory. They believe that knowledge is situational, that knowledge is part of activities, backgrounds and cultural products, and that knowledge is constantly used and developed in activities, rich contexts and cultures. Learning knowledge, thinking and situation are closely related to each other, knowledge and action are mutual -- knowledge is in the situation and gets progress and development in the behavior. Knowledge is the product of interaction between learners and situations, and in essence is deeply affected by activities and social culture. Knowledge can only have meant when it is explained in the activities and situations in which it is generated and applied. Therefore, real, and complete knowledge is acquired in real situations. Situational learning summary of basically has the following view completely abstract teaching is meaningless action is rooted in the specific situation of teaching it should implement of knowledge transfer in a complex social affection is needs certain conditions, it will not automatically migrated automatically from one task to another task, but on those tasks on the extent to which the elements of a convergence. Financial situation simulation teaching actually plays a real situation, it shows students is a real problem, a simulation experience. Through the problem situation presented by financial events, students can think and learn the problems caused by the problem situation, and analyze the problems in financial events with the knowledge they have learned, so as to obtain meaningful learning.

2.4. Teaching model theory

According to the modern teaching theory, the teaching mode is called situational virtual mode. The teaching mode is guided by modern teaching theory, aiming at different teaching objects and teaching contents, integrating modern education technology and scientific and practical teaching methods. The virtual education environment is close to the actual scene, improving the quality of skills, and comprehensively cultivating students' comprehensive application ability and innovation consciousness. According to this educational concept, accounting teaching should consider setting up accounting simulation room. Because indoors, can according to the actual situation of enterprise, virtual accounting environment, make the students entered the room, as if into the enterprise's financial department, make its immersive, curiosity and novelty, lets the student feel oneself is a accountant, resulting in a strong interest in learning, arouse their strong desire for knowledge, for to learn professional knowledge to create a good accounting the door Good learning atmosphere.

2.5 Teaching interaction theory

Piaget, a Swiss psychologist, put forward a theory of teaching interaction based on the theory of generative knowledge. He believed that the motive force and basis of the occurrence and development of cognition was the interaction between subject and object, and all experience originated from action. The key point of this theory is that in the teaching process, students are always the subject, while teachers, learning environment and teaching means are all objects. Whether the teaching goal can be achieved depends on the internal interaction of the subject, so the focus of work must be placed on students. Teachers are the organizers and guiders of the realization of teaching objectives, and play a leading role in the teaching process, which should be shown in trying to create various scenarios and give play to the main role of students. The research shows that the scenario simulation method can reduce and fully develop the interaction between teachers and students, between individuals, between groups, between groups, between individuals and groups, and between individuals and groups, so that they show greater learning enthusiasm and creativity. Based on life and designed according to the needs of learners, scenario simulation combines students' emotions and thoughts with their own knowledge, so that students can devote themselves wholeheartedly and achieve good teaching effects.

2.6 Mixed teaching model theory

The basic framework of the teaching system is composed of subject, object and mixed teaching mode. The main body includes teaching main body and foundation main body. The main body of teaching consists of teachers, staff and students. Teachers and staff are the first element that play a leading role in the system, and they are the organizers, guides and commanders of teaching activities.

2.7 The Object

The object consists of teaching objective, teaching task and teaching content. Teaching objectives are the basic skills training of cultivating students' ability to independently engage in practical work according to the professional training objectives and personnel training specifications. The teaching task is the concretization of the teaching goal, which is arranged and organized systematically for each link and level of teaching. Teaching content refers to the general term for the knowledge and skills taught to students, the cultivation of ideology and morality, and the development of intelligence, which are generally expressed in the form of teaching plans, teaching programs and textbooks.

3. MIXED TEACHING MODE OF TAX INSPECTION

The mixed teaching mode includes teaching process, teaching method and teaching evaluation. The teaching process includes four basic elements: teachers, students, teaching content and teaching management. It is the intermediary for educators to exert effects on the educatees, as well as the link and bridge between educators and educatees. Teaching method is not a fixed way, but refers to a series of teacher-student interaction activities, in order to complete the teaching objectives and tasks, adopt certain teaching methods and teaching methods and activities. Teaching inspection and evaluation includes inspection and evaluation, which is an activity to scientifically judge the completion of teaching objectives and tasks and the quality and quantity of knowledge mastered by students. It is also an important means for the school management department to control the teaching process.

3.1 Scenario

The modern Chinese Dictionary annual edition explains that situation is situation, and situation situation refers to a practical teaching activity in which students play a certain role in the simulated working situation so as to master certain working knowledge and skills. Situational teaching method is a modern teaching model with great development potential. In order to achieve a certain teaching purpose, students read and analyze cases provided by teachers under the guidance of teachers. Evaluation and discussion, and then draw a conclusion or solution to the problem, deepen the understanding of the relevant principles and the scientific knowledge of the system to master, so as to promote the development of students' ability and quality of a teaching method.

3.2 Simulation

Simulation method is a general scientific research method to study the prototype of object through model. Its essence is to design and build a simulation model on some points with the prototype according to the principle of analogy, and reveal the characteristic relation and change rule of the prototype through the study of the model. Simulation refers to the design of a model similar to the research object through the simulation method when it is difficult to take the research object directly, and then indirectly study the natural laws of the prototype through the model. This method is called simulation. Simulation teaching method is to use simulators or simulated situations to make participants play a certain role in close to reality, and interact with people or things in it, so as to achieve the expected learning purpose.

3.3 Teaching Method

It is a scientific research method to artificially control or create certain conditions according to specific research objectives and theoretical hypotheses, so as to verify hypotheses and explore the causal relationship between phenomena. Teaching refers to a form of teaching carried out in a specific room. Is characterized by a high degree of control of the situation under study, highlighting important factors to the maximum extent, to prevent the interference of irrelevant factors. Accounting simulation is to model the simulated object and let students carry out accounting activities in it by simulating its production and management process, so as to master accounting theory and get familiar with accounting operation skills.

3.4 Financial scenario simulation teaching

Accounting simulation teaching refers to the teaching activities in which students can conduct practical operation in the accounting simulation room on the basis of mastering certain accounting theories and in accordance with the requirements of the actual work of accounting, and improve the practical operation ability of students by combining theory with practice. Situational simulation teaching refers to a virtual practical training method in which students play different roles in situations that are close to real work or life and teachers give guidance, analyze and make a final summary.

Financial scenario simulation teaching is required to focus on a certain financial subject to be discussed, from financial practice, Case and related data, collect relevant material, write into the simulation instruction or script, will be moved into financial practice class or room, let the students play the role of the various financial personnel, scene, the scene in the heart, to learn from them and to use the financial knowledge and operation art, a substantial financial control to improve students' quality goals. The core of this teaching method is that students act as various financial roles or actors to stimulate students' learning enthusiasm, initiative and creativity. It is a typical hands-on teaching

Learning methods.

4. CONCLUSION

The content of the hybrid teaching mode of tax inspection course is not only limited to the basic economic business of industrial enterprises, but also can develop multi-level and multi-directional comprehensive teaching projects, such as group companies and enterprises. In addition, the industry involved can be broadened to other types of accounting entities, such as commerce, finance, administrative institutions and so on. In the teaching project, can enrich other single item content, according to the development of understanding and constantly improve. Hybrid carrying out the teaching mode in hybrid teaching management, for the convenience of the students, exert students' autonomy and creativity, can students complete a course of study and simulation training, with the help of a guiding teacher, the teaching program is open to all students, and students can learn according to their own needs to design research, innovative project.

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Analysis on the Use of Western Union in Foreign Trade

Juliang Mi
Shandong Polytechnic, Jinan, Shandong, China

Abstract: Western Union is widely used in foreign trade due to its advantages of convenience, safety and fast, especially in the collection and payment for small amount of transaction and sample fee. However, the differences and loopholes in the Western Union business operations by different banks have led the seller to use it to defraud remittances or sample fees. This article mainly elaborates the seller how to uses Western Union to collect remittances, and combined with the author's years of foreign trade experience in WU business, and analyses the risks in the use of Western Union in foreign trade, and proposes countermeasures on how to prevent risks.
Keywords: Western Union; Mtcn; Defraud; Risks; Counter Measures

1. INTRODUCTION TO WESTERN UNION

Western Union (Western Union, WU) is the world's leading express remittance company. It has a history of 150 years. It has the world's largest and most advanced electronic remittance financial network, enabling global remittances to be realized within minutes Huida is so fast that you can't feel the existence of distance. Its agency outlets cover nearly 200 countries and regions around the world, and it has more than 480,0001 cooperative outlets around the world, and it is still expanding.

2. THE CURRENT SITUATION OF WESTERN UNION'S USE IN FOREIGN TRADE BUSINESS

At present, there are nearly hundreds of thousands of companies engaged in foreign trade business. In addition, there are tens of thousands of various offshore companies, foreign trade SOHOs, etc. For the majority of foreign trade companies, safe and timely payment of payment has always been everyone The focus of attention is that traditional international trade payment methods such as remittance, collection, letter of credit, etc., due to cumbersome procedures and high costs, can no longer meet the needs of buyers and sellers for flexible and diversified payment of goods, especially small payment or sample fees, etc. Receipt and payment of money.

It is precisely because Western Union has the advantages of fast speed, simple procedures, no fees for the recipient, etc., it is very suitable for businesses such as small transaction amount or sellers charging sample fees. Especially now, the form of SOHO foreign trade is very common. Everyone can use a computer to The B2B platform is engaged in some small foreign trade export business, and the transaction amount is very small, so Western Union is often used to collect payments. At present, Western Union is more and more widely used in foreign trade business.

3. EXISTING RISKS

3.1 Risk to the seller. The seller's risk mainly comes from the following two situations: ①The seller delivers the goods first, and the buyer pays later. Union transfer is essentially a traditional type of international payment transaction, similar to traditional T/T. For example, the buyer and seller agree to adopt the Western Union transfer method, requiring the seller to ship the goods or send the samples, and then the buyer through Western Union. After the seller ships the goods or the samples are sent, if the buyer does not remit the money, the seller will suffer loss of the goods. ②The buyer took advantage of the seller's unfamiliarity or negligence with Western Union business, deliberately mistyped the beneficiary's name during remittance, or deliberately notified the beneficiary of the wrong MTCN and remitter's name, so that the beneficiary believed that the buyer had paid the payment. Or the buyer did not pay at all, and the remittance monitoring number provided to the seller was false information. When the seller went to handle the Western Union foreign exchange collection, they discovered that these wrong information caused it to be unable to collect foreign exchange at all and suffered losses.

3.2 Risk to the buyer. The buyer's risk mainly comes from the following situations: the buyer pays first, and the seller delivers the goods later. In general, Western Union is beneficial to the seller to a certain extent, because it has the advantages of fast collection, simple procedures, and no fees, so sellers are very willing to use Western Union to collect payments, using the buyer to pay first and the seller to ship the goods. This also provides an opportunity for many sellers and scammers, making the buyer face the risk of paying but not getting the goods.

Currently, using the Internet to publish products on many foreign trade B2B platforms, there are many unscrupulous sellers who use Western Union to defraud. This has affected the development of foreign trade business to a certain extent, even to the point of talking about Western Union.

4. CAUSES OF RISK

4.1 Western Union is determined by its own characteristics. Western Union money transfer is mainly a private-to-private business, and the recipients are all individuals, which is convenient,

Fast is the most basic feature of Western Union business. It provides a lot of convenience for the small collection and payment services of many small and medium-sized enterprises and individuals. However, this kind of convenience is used by some unscrupulous sellers to quickly and conveniently collect the remittance and not ship the goods. Because the buyer and seller are in different countries, the distance is relatively long, and the amount of fraud is not very large, the buyer suffers a dumb loss. Don't call the police if you think it's troublesome. Even if you call the police for such a small amount, the police may not open a case. Once the case is filed, the recovery may not be successful. Therefore, you generally have to leave it alone. This also makes these scammers more confident.

4.2 Banks handling Western Union's foreign exchange collection business are too loose and not rigorous enough. In our country, the payee goes to the bank counter to handle the Western Union collection. The procedure is very simple. Just bring your ID card and fill in the Receive Form correctly, and you can receive the remittance immediately, even without opening a bank account. Take Bank of China's Western Union payment receipt as an example, the receiver only needs to fill in the contents correctly according to the form, such as the remittance monitoring number, the currency and amount of the remittance, the receiver's name, surname, ID card information, and the sender For the test question and answer in the receipt, the bank does not review this content at all, which makes this content useless and can't play the role of the second password at all. It is this lenient practice that has become a loophole exploited by bad sellers and provides an opportunity for fraud.

5. RISK RESPONSE MEASURES

5.1 Use Western Union with care. When the buyer and seller cooperate for the first time and lack mutual understanding and trust, try to use a relatively safe payment method such as letter of credit. For old customers, consider using Western Union.

5.2 Combine actual business and use Western Union flexibly. For the first cooperation, during the trade negotiation, the two parties have agreed, and when the payment is made, let the other party set up the test question and answer. After the remittance, only the MTCN will be notified to the seller, and then the seller will arrange the express delivery, and the express number will be given after the delivery. Notify the other party, and then the other party will notify the seller of the verification questions and answers, and the seller can handle the collection of foreign exchange. This operation method is relatively fair to the buyer and seller and can reduce the risks of both parties.

5.3 Banks handling Western Union business should strictly review the procedures.

5.3.1 When handling at the counter, in addition to strictly reviewing the recipient's ID card and the detailed information of the sender and recipient on the receipt, if the sender has set up a Test Question, then it must also Strictly review the Test Question and answers, and only after verifying that the questions and answers are correct, can the remittance be paid to the recipient.

5.3.2 Strict and perfect the procedures for collecting foreign exchange through online banking, mobile banking and smart teller machines. The recipient is required to input the correct information such as the remittance amount, currency, country, sender, recipient, MTCN number, verification questions and answers, etc., and strictly review the system. If there is any discrepancy, the remittance will not be resolved. At the same time, Set up face recognition to ensure that the receiver himself collects the foreign exchange.

5.4 Establish and improve e-commerce laws and regulations, standardize the product release regulations of the B2B platform, strictly prohibit the information release and sale of illegal and illegal products, and eliminate hidden dangers for fraudulent use of Western Union.

In short, buyers and sellers engaged in foreign trade business must not only use Western Union with care, but also be honest, strictly abide by the law, and use Western Union in accordance with regulations, so that Western Union is a payment method that can be used in foreign trade business more conveniently and quickly. It has the advantage of local area to serve both buyers and sellers to promote the healthy and rapid development of foreign trade business.

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Brief Analysis of The Factors Influencing Precise Push of Sharing Platform on User Stickiness-Take Xiaohongshu as An Example

Qing Liu
Silla University, Busan, South Korea

Abstract: With the application of big data technology in the lifestyle sharing platform represented by Xiaohongshu, "doing what they like" has become a magic weapon for each platform to attract users' attention and enhance user stickiness. Precise push is quietly changing user habits and preferences, and the resulting cocoon effect and user privacy concerns are also problems and tests that future platforms need to face.
Key Words: Precision push; xiao' hongshu; Information Cocoons; privacy Concerns

1. XIAOHONGSHU DEVELOPMENT AND STATUS QUO AND USER CHARACTERISTICS

1.1 Development status of Xiaohongshu

According to the 47th Statistical Report on Internet Development in China, China had 989 million Internet users by December 2020, up 85.4 million from March 2020, and the Internet penetration rate reached 70.4 percent. The number of mobile Internet users reached 986 million, and 99.7 percent of Internet users used mobile phones to access the Internet. The rapid economic growth has also enhanced the differences between users' self-interests and demands. User-generated content (UGC) has become a special and trendy community culture. A wide variety of online virtual communities, led by various mobile apps such as Sina Weibo, Zhihu, Douban group and Xiaohongshu, are popular among the younger generation of netizens.

Founded in 2013, Xiaohongshu has over 300 million registered users as of October 2019, showing a rising trend with over 100 million monthly active users. 70% of the new users are post-90s. As a "lifestyle sharing platform" popular with young people, users can share and record their lives through videos, pictures, texts and other forms. Meanwhile, Xiaohongshu builds a space to guide users to carry out daily sharing and communication. When users have actual shopping needs, xiaohongshu can also provide one-stop shopping service.

2. USER CHARACTERISTICS OF XIAOHONGBOOK

According to the Qiagua Data Report (April 2021), nearly 300 million notes were published in 2020, generating over 10 billion note exposures per day. Active users tend to be younger, with 18-34 year old users accounting for 83.31% and female users accounting for 90.41%. The younger users of the platform are more likely to realize social interaction through sharing behaviors after commodity purchase, so as to satisfy their desire for shopping sharing and self-presentation and obtain emotional belonging. At the same time, users prefer scenario-based shopping experience, especially in social scenarios, which tend to weaken the sense of consumption and enhance the satisfaction of shopping. They can make purchase decisions in a short time, save the cost of shopping time and obtain the best shopping experience. Because of information asymmetry between the seller and the buyer, the user does not really get product functionality and features, thus caused the user wants to seek a consumer feedback as the core of the platform, real personal since production real feedback content with others reference, so the little red book is under the user requirements development hand in hand into a social platform to popular among young people.

The key to the sustainable development of Xiaohongshu and other similar platforms is to use big data to generate accurate content push to realize multi-level interaction of users, maximize UGC content, increase user attention and enhance user stickiness.

3. LITTLE RED BOOK ACCURATELY PUSHES DEVELOPMENT TRENDS

3.1 Use big data to drive precise push

Born to scope the little red book from cross-border shopping extend to broader areas of life, the official partition to the current contents are as follows: skin care, fashion, cosmetics, funny, of pets, food, music, film and television variety show, sports fitness, games, sporting, emotion, photography, home decoration, digital science and technology, automobile and other fields. Xiaohongshu uses big data technology to collect user information, integrate users' personal characteristics and preference categories, and depict users' portraits. According to users' target needs, the push notes in the "discovery" column not only attract users' attention, but also increase users' stickiness. Meanwhile, Xiaohongshu's huge number of daily active users is inseparable from its accurate push.

3.2 Personalized customization and in-depth interaction

Different from its initial focus on cross-border e-commerce, Xiaohongshu is now divided into cross-border e-commerce, lifestyle, beauty and skin care and hot events. In addition to Posting notes, cross-platform sharing, comments, likes, favorites and other columns also increase the user and platform, user and user interaction. At the same time, accurate push with big data can effectively deliver and push information to customers, which can also increase users' attention and user stickiness.

4. ANALYSIS OF PRECISE PUSH PROBLEMS

4.1 Information cocoon room

In His book Information Utopia: How People Produce Knowledge, Cass R.Sunstein, a professor at the University of Chicago, describes the "Information Cocoon" as follows: In the field of information, the public's demand for information is very limited, and it is largely guided by individual interests, thus confining its life in a "cocoon" like a cocoon.

Big data will only focus on users' preferences and favorites for a long time, and in the long run, information cocoon effect will also separate xiaohongshu users themselves. This not only "Narrows" users' acceptance of diversified information, but also hinders the exchange and development of different information. Under the influence of information cocoon room, the polarization of user network group and the lack of social adhesion will also cause immeasurable negative impact on Xiaohongshu.

4.2 User privacy concerns

Bake&&Morimoto(2013) points out that highly personalized advertising messages may cause consumers to worry about losing the ability to control private information. Previous studies have shown that consumers will have psychological resistance to highly personalized advertising messages, because consumers will feel uncomfortable for companies to identify and observe their own behavior. Similarly, if xiaohongshu users pay more attention to privacy, it indicates that they have a stronger sense of personal privacy. When strongly targeted push information appears in front of such people, it is easy for them to think of their privacy has been leaked, trigger their bad emotions, and thus show a negative attitude towards their push information.

4.3 User stickiness

On the one hand, precise push enhances user experience and strengthens the bond between the platform and users. But on the other hand, information cocoons and user privacy concerns also degrade the user experience. In the short term, accurate push can improve user viscosity, but at the same time, it will lead to a drop in loyalty. At present, Xiaohongbook sets "don't like the note" and "don't look at the author" buttons to help correct accurate push data, and sets "advertising", "too much similarity", "pornographic and vulgar", and "inappropriate content" content feedback to achieve push calibration according to user needs. Secondly, avoid pushing too much homogenized content, and constantly bring forth new ideas while accurately pushing, and establish user reaction mechanism, which can also help solve some problems. At the same time, the platform should pay attention to user privacy. While collecting user information, the platform should pay more attention to the security of user personal information. Excessive accurate information push may also cause some customers' privacy concerns.

5.CONCLUSION

In the booming era of big data, Xiaohongshu should give full consideration to user characteristics and cultural diversity while skillfully applying big data to accurately push information to users to avoid negative consequences caused by information cocooning. Secondly, attention should be paid to users' privacy concerns and users' psychological mechanism should be mastered. During the development of the platform, appropriate consideration should be given to whether users have personal privacy concerns so that users can check themselves. For Xiaohongshu, creating a positive online environment and correctly guiding the culture of the younger generation will also be the key to sustainability.

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Analysis Of Piano Teaching Strategies in Higher Vocational Colleges Based on Core Literacy

Tingting Lv
School Of Teacher Education, Dongying Vocational College, Dongying, Shandong, China

Abstract: With the development and progress of teaching reform, promoting people's all-round development has become the focus of education. Overemphasis on knowledge and skills in the traditional education teaching mode has already can not adapt to the new development needs, in the process of piano teaching in higher vocational schools notice to student's comprehensive ability, such as the humanities accomplishment and ideological and moral quality, etc., it is only through the core literacy into the piano teaching of higher vocational colleges, to achieve the development of the students' overall quality improvement, Cultivate high-quality talents needed for social development. This paper aims to discuss the existing problems in piano teaching in higher vocational colleges and the teaching development strategies under the core literacy.
Key Words: Core Literacy; Higher Vocational Colleges; Piano Teaching; Strategy

1.INTRODUCTION

On March 30, 2016, the Ministry of Education officially issued the Opinions of the Ministry of Education on Comprehensively Deepening the Curriculum Reform and Implementing the Fundamental Task of Moral Education. The core literacy system was proposed in the document, whose fundamental purpose is to cultivate all-round development of people. Core literacy is not only suitable for specific situation and characteristics of subject or specific character of a particular quality, it applies to all context and all people of accomplishment, is a combination of knowledge, skills, attitudes, both in problem solving, exploring ability, critical thinking and cognitive accomplishment, and including the self management, organizational skills, interpersonal and other non cognitive accomplishment. Applying it to piano teaching in higher vocational colleges is to cultivate students' comprehensive ability, so that students in higher vocational colleges show the characteristics of diversification.

2. PROBLEMS EXISTING IN THE CURRENT VOCATIONAL PIANO TEACHING

In the context of advocating core literacy, there are still some problems in the piano teaching in higher vocational colleges. Firstly, the traditional teaching mode is still adhered to in the teaching process, focusing on the mastery of piano playing skills. On the cultivation of students in higher vocational colleges pay attention to is the development of professional ability, thus in the process of piano course of conduct, through the practice to enhance the students' ability and skills, playing the piano but play in professional knowledge and the emotion expression, tend to neglect the needs of students, thus to some extent, limits the student's career development, Piano performance only has skills but no own style, so it is difficult to achieve the effect of touching people's hearts, and the choice of future work will also be greatly limited [1].

Secondly, some higher vocational colleges do not pay enough attention to students' piano teaching, resulting in insufficient learning time of students every week, thus affecting the effect of piano teaching. Piano teachers themselves are also lacking in professional quality. Although they have skilled piano playing skills, they are relatively inadequate in educational ability, unable to integrate the cultivation of core quality into piano teaching, resulting in the limitation of the overall development of students. Therefore, in order to comprehensively cultivate students' core accomplishment ability, it is necessary to cooperate in many aspects.

3. COUNTERMEASURES OF PIANO TEACHING IN HIGHER VOCATIONAL COLLEGES UNDER CORE LITERACY

In view of the existing problems in piano teaching in higher vocational colleges, it can be carried out mainly from the following aspects:

3.1 Follow the teaching rules

In the piano teaching of higher vocational colleges, we should grasp the specialty characteristics of the course and make appropriate teaching programs according to the development needs of students. In the development of piano teaching, the first thing is to have a full understanding of the actual learning situation of students, students before entering vocational colleges for piano learning basis is different, so the learning ability will show different results, so in the teaching should be detailed understanding of students' learning situation. In terms of the development of learning plans, students should proceed according to the degree of difficulty. They should start from the basic knowledge of music theory and gradually transition to piano performance, and follow the regular teaching rules to keep students' normal learning. In order to blindly improve the core literacy of students, and disrupt the normal law of teaching, but not conducive to students' learning.

3.2 Pay attention to humanities

Core literacy advocates the quality cultivation between disciplines, so in the process of piano teaching, we should not only pay attention to the study of piano knowledge, but also integrate humanistic connotation into the teaching to improve students' core literacy. For example, in the teaching process of a piano piece, students should first understand the author's life and creation story to arouse spiritual resonance, so as to better understand the emotion to be expressed in the piano piece. Take Beethoven's "Symphony of Destiny" for example, Beethoven's life experience bumpy but still full of love for life, on this basis to create "Symphony of Destiny" magnificent, magnificent atmosphere. Through learning the songs, students can feel the distinctive emotional characteristics of the songs, so as to motivate themselves, which is also an important aspect of humanistic cultivation [2]. The piano teaching in higher vocational colleges is not only to cultivate students' piano professional ability, but also to cultivate their thoughts and emotions. A really excellent piano player must achieve a high degree of unity of skills and emotions.

3.3 Strengthen the construction of teachers

In existing in piano teaching in higher vocational colleges, the construction of the contingent of teachers are not obvious, on the one hand, young teachers in teaching ability needs to be improved, on the other hand, experienced teachers have formed their own teaching model, for the core accomplishment of immersive enough, this has hindered the development of piano teaching in higher vocational colleges. Schools must attach importance to the cultivation of core literacy in piano teaching, bring the practice of core literacy into the assessment of piano teaching effect, encourage teachers to change the original teaching methods, innovate the teaching form of core literacy, and carry out teaching activities with core literacy as the guiding ideology. At the same time to strengthen the training of teachers' professional ability, especially for newly enrolled teachers, can be in the form of vocational skills contest held to enhance the ability of teaching, strengthen the exchanges and cooperation with other colleges and universities at the same time, create a good core literacy teaching atmosphere, constantly raising the level of piano teaching in higher vocational colleges, cultivate comprehensive, high quality piano talent.

3.4 Enrich teaching practice forms

In the exploration of piano teaching based on core literacy, the traditional piano teaching practice forms can no longer meet the new development needs, so it is necessary to enrich the existing teaching practice forms and improve the cultivation progress of core literacy. Piano teaching is not only a kind of professional skill teaching, but also an elegant art, which can edification students' aesthetic taste in invisible way, so as to cultivate students' artistic temperament, so it has common with many subjects. So in the process of piano teaching, with the cooperation between art subjects such as art, music, learn each other, through the study of cooperative performance in the form of display, in the process, not only can promote the student to the use of knowledge, skills, understand the piano, at the same time is also in the process of the cooperation of team collaboration, helping each other, such as the implementation of good moral character, Thus, in the process of imperceptible improvement of students' ideological and moral quality, but also the cultivation of students' core quality.

4.CONCLUSION

To sum up, under the guidance of core quality in higher vocational colleges in piano teaching still exist many problems, the school and teachers must strengthen to the attention of the core accomplishment, the core of the students quality training as the important part of teaching, to adjust the existing teaching mode, with a variety of forms will be literacy into the core of teaching, to strengthen the construction of teachers at the same time, Teachers should constantly improve their core literacy training ability in teaching level, learn to carry out a variety of teaching practices, so that students can constantly improve their core literacy in practice, so as to create all-round development of talents in the new era and provide help for social development.

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Present Situation and Countermeasures of Production Practice in Material Forming and Control Engineering Specialty

Xingdong Peng
School of Materials and Metallurgy, University of Science and Technology Liaoning, Anshan, Liaoning 114051, China

Abstract: In view of the current situation of production practice, it is proposed to strengthen the construction of off-campus practice base, actively create on-campus practice base, adopt "interactive" practice teaching mode, inspire and expand the teaching method, highlight the main role of students in practice, do a good job of preparation for practice, and establish a scientific and reasonable assessment mechanism. It provides a new idea for the construction of practice base and the reform of practice mode.
Key Words: Material Forming And Control Engineering; Production Practice; Countermeasures

1.INTRODUCTION

Production practice is one of the important practical teaching links in material forming and control engineering major. It can make students combine theory with practice, improve the ability of analyzing and solving problems. It is necessary to strengthen practical teaching and improve the teaching quality of production practice. It is a preliminary attempt to apply professional theory into practice. There are many factors in the process of production practice that affect the effect of practice. This paper introduces the present situation of professional production practice, and puts forward some countermeasures, which can provide reference for improving the teaching quality of professional practice.

2. CURRENT SITUATION OF PRODUCTION PRACTICE

2.1 Enterprises: In order to ensure production and safety, enterprises do not welcome a large number of interns to practice on site for a long time. Even if reluctant to receive interns, in the whole internship process, students are basically passive to see and listen, can not participate in the specific practice process. But when enterprises recruit graduates, they require high practical ability and strong hands-on ability.

2.2 Colleges and universities: There are too many students, insufficient practice space, and teachers' practical teaching ability is not strong.

2.3 Students: Students are willing to participate in professional production practice, combining theory with practice.

3. THE COUNTERMEASURES

3.1 Strengthen the construction of off-campus internship bases

Carry out the construction of off-campus practice bases in various directions, communicate with enterprises through various channels, and serve enterprises with the advantages of talent training, scientific research and information of universities, and establish long-term mutually beneficial cooperative relations with them. Employ the main engineering and production management personnel with rich practical experience as part-time practice guidance teachers, improve their enthusiasm to guide students to practice. I often communicated with the executives of the enterprises, detailed the internship agreement, prevented the enterprises from acting perfunctorily when receiving the internship, and improved the efficiency of the internship. Hu Yong et al. [1] discussed the teaching reform of production practice through cooperation between schools and enterprises. Zhu Fuwen et al. [2] proposed to improve the business management ability of the instructor team, strengthen school-enterprise cooperation and explore self-association internship.

3.2 Establish an open internship base on campus.

The construction of campus practice base based on professional laboratory and electronic practice base based on multimedia simulation technology has low cost, which can not only make up for the shortage of on-site practice, but also reduce a lot of on-site practice funds. Before and during the internship, multimedia simulation is played repeatedly to simulate the production process, so that students can have more opportunities to combine the theory learned with multimedia demonstration and actual situation, and deeply experience the knowledge learned.

3.3 Highlight the principal status of students

It will bring better results to appropriately transform the role of the current practice, adopt enlightening and expanding teaching methods, emphasize and highlight the main position of students in the practice, give full play to the potential of students and make them actively participate in the practice activities. In practice, students are divided into groups, usually 28 people a group, can be divided into 4 groups, each group is responsible for a student, each group in each production enterprise internship for 2-3 days, so that in 3-4 weeks, students can practice 8 to 9 production enterprises. In addition, students in the same enterprise are divided into groups of three, and each group rotates for a certain period of time according to the process from beginning to end. In this way, students are assigned to each workshop, and the research content is specific and clear, so that they can easily communicate with technicians and operators, so as to master first-hand information. This practice method stimulates students' interest in practice, arouses their enthusiasm, expands their knowledge, improves the efficiency of practice, and avoids too many students crowding in the same enterprise and affecting the normal production of the enterprise. Luo Xiaodong et al. [3] proposed the practice note-recording mode of diary, weekly record and summary. Zhou Liang et al. [4] proposed a production practice system that places equal emphasis on theoretical teaching and practical ability cultivation. An Guosheng et al. [5] proposed the trinity learning form of "visit-lecture-hands-on". Zhao Xueni et al. [6] proposed the construction of a "professional atteation-oriented and student-centered" production practice mode. Gong Pan et al. [7] proposed a production practice mode based on goal orientation, demand orientation and problem orientation.

3.4 Establish a scientific and reasonable assessment mechanism

The assessment criteria should include internship performance, internship diary, internship report, examination and defense. In the evaluation of each student's performance, the first three items in the performance assessment process each account for 20%, and the examination and defense each account for 20%. The practice teacher must evaluate each student objectively, do open, fair, just for each student to assess the result, promoted the student to study steadfastly, works steadfastly, after the student participates in the work establishes the fair competition thought to lay the foundation.

4. CONCLUSION

The exploration of new off-campus and on-campus practice bases and practice modes initially alleviates the practical problems of too many students and difficulty in contact with practice, ensures the quality of production practice, and provides a new idea for the construction of practice bases and the reform of practice modes. Scientific monitoring, restraint and incentive mechanism gives full play to the leading role of teachers and the main role of students, which is a powerful guarantee to cultivate students' innovative spirit and practical ability and improve the teaching quality of production practice.

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Analysis Of Big Data Mining Technology and Decision-Making Applications

Dandan Wang
Zibo Vocational Institute, Zibo, Shandong 255300, China

Abstract: With the rapid development of computers and modern information technology, big data analysis and mining technology has been widely used in all walks of life, extracting valuable information for users from numerous information data, providing scientific and accurate basis for decision-making. Therefore, this paper will analyze the big data analysis and mining technology and decision application.
Key Words: Big Data; Analysis; Mining

1.INTRODUCTION

In the network era, all fields develop rapidly, and a large amount of data information is formed in this process. The analysis of such data plays an important role in promoting the sound development of enterprises. Big data analysis and mining technology relies on computer systems and modern information technology, which can collect and store massive data and conduct scientific analysis to improve the value and utilization efficiency of data. Therefore, this paper will analyze the big data analysis and mining technology and decision application.

2. APPLICATION OF BIG DATA ANALYSIS AND MINING TECHNOLOGY IN UNIVERSITY STUDENT MANAGEMENT

The growth and development environment of college students is relatively loose and free, but it also enhances the difficulty of student management to a certain extent. At present, most colleges and universities adopt the form of "one-card" to manage students, realizing the management of students' class check-in, dormitory management, diet and access control with the help of a card [1]. Therefore, big data analysis and mining technology can be applied to the "one-card" technology to further expand the scope of application and build an internal data sharing platform in universities, which is conducive to improving the efficiency of student management. In practical application, the big data platform will be used to deeply mine the data of students' network use, consumption, access control and class attendance, etc., and the data will be analyzed jointly with other management systems of the school to establish the corresponding data warning mechanism, organize and summarize the data regularly and accurately control the students' travel trajectory. In this way, students' lost contact can be found in time to prevent the occurrence of such phenomena. Once the data system detects that the information exceeds the early warning value, it will send early warning information to the administrator through SMS, email and other forms, and mark it in the school work system. By sorting out and analyzing the reasons related to the problem of students losing contact, it can provide reference for the counselors to understand the actions of students and give early warning to the students losing contact, thus improving the efficiency of college counselors' student management.

3. APPLICATION OF BIG DATA ANALYSIS AND MINING TECHNOLOGY IN FINANCIAL SYSTEM DECISION-MAKING

At present, enterprise financial management has basically realized accounting informatization, financial accounting work is generally carried out on financial software, and financial accounting is gradually changed into management accounting [2]. The application of big data analysis and mining technology in the financial system is conducive to improving the ability of management accounting to analyze the financial affairs of enterprises, and provides an important reference for the decision-making of enterprise development. For example, the application of big data analysis and mining technology in the process of investment management can accurately analyze the external environment of investment and the actual market demand, accurately identify investment risk factors and ensure good economic returns. And the application of big data analysis and mining technology in the process of financing decision-making, can sort out and analyze the financing data, clear the purpose of financing, the selected way and financing requirements more fit, so as to reduce the cost of investment.

4. APPLICATION OF BIG DATA ANALYSIS AND MINING TECHNOLOGY IN SHOPPING MALL MANAGEMENT

4.1 Customer group segmentation

Customer segmentation mainly refers to the use of big data analysis and mining technology, combined with the shopping mall customer consumption situation and standards to subdivide them into multiple types. The classification is mainly based on the age, gender, occupation, hobbies and other new types of customers. The purpose is to master customer consumption information, understand customer consumption habits, control customer physical consumption characteristics, dig deeply into value customers, and take targeted sales countermeasures to improve sales efficiency [3]. In the traditional sales work of shopping malls, manual sales methods such as distributing leaflets are usually adopted to promote products. Such sales methods are time-consuming and labor-consuming, and the effect is not ideal, which cannot meet the needs of sales in the information age. The big data analysis and mining technology is applied to the management of shopping malls, and the corresponding data analysis and mining system is constructed. The customer data information is collected in the form of membership cards, the customer consumption data is sorted and analyzed, the consumption characteristics of customers are summarized, and the consumer preferences are found, so as to release targeted and interesting content to customers. In this way, it can meet the personalized needs of customers, provide customers with humanized service, increase customer attraction and enhance the market competitiveness of shopping malls.

4.2 Analyzing customer credit

Big data analysis and mining technology can also be applied to user information analysis. By sorting out and analyzing user historical information and data, users' credit status can be summarized, and corresponding sales strategies can be formulated based on such information to prevent fraud. Big data analysis and mining technology can reduce investment risks, provide convenient and personalized services to users with higher credit ratings, attract more customers, and make users become dependent on consumption. High-end luxury goods and large household appliances are the main income sources of shopping malls. At present, many shopping malls adopt the form of installment payment to increase their attractiveness. Customers can own goods after paying a certain down payment, and pay the subsequent monthly payment on time. Through the use of big data analysis and mining technology, when the customer's credit rating is low, no staging service is provided to avoid sales risks.

4.3 Identify and retain customers

Customer loss often occurs in the management of shopping malls. By using big data analysis and mining technology, the corresponding data analysis model can be built to accurately locate potential customers who lose and formulate corresponding measures to retain them. Identifying potential customers through big data analysis and mining technology is conducive to in-depth mining of value customers and attracting more customers to shop. Research and analysis of customer information in the big data information base, establish fuzzy concepts and sets, compare the data with test samples, and simulate the potential consumption trend of customers. For example, after the shopping mall pushes publicity information to target customer groups, it classifies customers in the database, evaluates their future consumption behavior, and provides decision-making suggestions for whether to continue to push publicity information. Customer retention is also the process of identifying previous customers, so as to retain old customers and avoid customer loss, which is conducive to increasing the sales volume of shopping malls. The research found that the cost of retaining an existing customer is significantly lower than the cost of developing a new customer. Therefore, through the use of big data analysis and mining technology, it can analyze and summarize the data information of old customers, find the factors affecting customer loss, and develop targeted improvement measures based on this, improve personalized service, and retain old customers to the maximum extent. In addition, big data analysis and mining technology can also analyze customer loyalty, including consumption stability, persistence, etc., which is of great help to the operation of shopping malls. For example, shopping malls use big data analysis and mining technology to collect the consumption frequency, consumption amount, consumption time and other data of member customers, and observe loyalty fluctuations through model analysis. Based on such data, shopping malls can change sales strategies, adjust commodity prices and types, etc., so as to attract new customers while retaining old customers.

5.CONCLUSION

To sum up, in the current era of network information, big data analysis and mining technology plays an indispensable role in various fields. Big data analysis and mining technology can find valuable information in a large amount of data to provide reference for users' decision-making behavior. In the future, with the further development and improvement of big data analysis and mining technology, it will play a greater role in providing convenient services for people's work.

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Research On the Integration of Ideological and Political Elements in College Art Design Professional Courses Under the Background of New Liberal Arts--Taking "Advertising Aesthetics" As an Example

Qi Chen[1,2]
[1]*Doctor Of Education Major in Art Education, Philippine Christian University Center for International Education, Philippine;*
[2]*Nanchang Institute of Technology, Department of Media, Nanchang 330000, Jiangxi, China*

Abstract: From the perspective of the new liberal arts, this article first outlines the significance of integrating ideological and political elements, including the purpose of educational value pursuit, the requirements of improving moral quality, improving teaching effects and key channels for comprehensive literacy. , Then discussed how to better integrate ideological and political elements, and gave some relevant suggestions, that is, integration into the syllabus, integration into the curriculum system, integration into the teaching methods and methods, integration into the educational practice, in order to provide relevant personnel with Draw on.
Keywords: New Liberal Arts Perspective; Ideological And Political Elements; Art Professional Courses; Colleges And Universities

1. INTRODUCTION

Based on the background of the new liberal arts, in the art professional courses, by fully combining the ideological and political elements, aiming at the art professional teaching, the depth can be further improved. Relevant departments have pointed out that every course in colleges and universities needs to produce good synergy with ideological and political courses. In the professional teaching process, under the effective combination of ideological and political elements, it will help students master the knowledge of art. At the same time, they can continue to improve their personality, shape the correct values, and thus promote their all-round development.

2. THE SIGNIFICANCE OF INTEGRATING IDEOLOGICAL AND POLITICAL ELEMENTS

2.1 Purpose of educational value pursuit. For art and ideological and political education, from the perspective of value pursuit and goal analysis, the two have unity. In the teaching of professional courses, the full integration of this element will help enhance the creativity of learners and will help to further optimize teaching. In detail, the full integration of ideological and political elements in professional courses can achieve the unity of aesthetics and morals, and promote students to produce sound personalities. On the other hand, the abstract ideological and political elements can be fully embodied with the help of artistic images, and the displayed power can be used to mobilize the passion of learners, help them shape correct values, and promote their all-round development.

2.3 Requirements for improving moral quality. The progress and prosperity of the country cannot be without young people. If they dare to take responsibility, have ideals, and have outstanding abilities, they will be able to help the motherland's progress and national rejuvenation. Today's college students are influenced by a series of thoughts and cultures. In this environment, guiding them to shape correct values is the foundation of cultivation, and it is also a core goal in art teaching [1]. Therefore, in the professional teaching process, in addition to teaching good knowledge and skills, it should also focus on cultivating moral literacy, promoting the development of knowledge and literacy, and providing high-quality talents for the development of the motherland.

2.4 The key channel to improve teaching effect and comprehensive literacy. Relevant departments have clearly stated that, for higher education, it should move towards a connotative development and slowly shift to improving quality and efficiency. In this link, the most critical indicator is whether the cultivated talents can not meet the development requirements of related parties, such as whether society can meet the needs of students' all-round development. Analyzed in combination with the teaching of art majors, there is a large proportion of theoretical knowledge and skills, and the full integration of ideological and political education in professional courses can produce synergy, which can cultivate more outstanding talents.

3. RESEARCH ON THE INTEGRATION OF IDEOLOGICAL AND POLITICAL ELEMENTS IN COLLEGE ART DESIGN PROFESSIONAL COURSES UNDER THE BACKGROUND OF NEW LIBERAL ARTS

Under the new liberal arts perspective, for art professional courses, on how to better integrate ideological and political elements, this article mainly discusses the following aspects, that is, integration into the syllabus, integration into the curriculum system, integration into the teaching methods and methods, Integration in educational practice, etc., hoping to provide reference for relevant personnel.

3.1 Integration into the syllabus

In terms of professional syllabus, it is based on the teaching plan. When learning art courses, it is clear that the knowledge and skills should be mastered. In the process of revising the syllabus, ideological and political elements can be fully integrated into the teaching and training goals. In detail, based on the teaching goals, it is necessary to effectively demonstrate the cultivation of values in teaching. For professional courses, when allocating class time, ideological and political elements should be displayed effectively. For example, for the allocation of ideological and political education class hours, education should be fully carried out according to art courses. In addition, for teaching design, ideological and political elements should also be fully displayed, for example, by combining them with knowledge content, and on this basis, with the help of ideological and political elements to help students further understand the content of the course and strengthen their moral quality.

3.2 Integration into the curriculum system

For teachers, it should be aimed at art professional courses, with its characteristics as the starting point, based on the explanation of professional knowledge, comprehensively combining emotional and conceptual education, and through the development of professional curriculum teaching, the purpose of value education can be achieved. When imparting artistic skills, fully integrate quality and belief education. In art courses, the effective combination of behavioral education can strengthen students' humanistic qualities, enable them to better master artistic skills, and deeply experience the emotion and spirit contained in art, and continue to enhance their personal qualities; in art courses, fully integrate Faith education will help them improve their patriotism, cultivate their moral qualities, step into the society in the future, have the courage to assume personal responsibilities, and help the motherland make greater progress.

3.3 Integration into teaching methods and methods

Nowadays, the teaching of art majors in some schools still implements the previous teaching model. Based on the current teaching environment, the past teaching and multimedia teaching should be fully integrated with ideological and political elements, and new teaching methods and methods should be actively introduced in order to fully demonstrate the ideological and political elements. In detail, for the past teaching methods, ideological and political elements are fully integrated with a variety of teaching, such as familiar case teaching, to improve learners' sense of responsibility and strengthen their patriotic feelings. For multimedia teaching, this element is fully reflected in videos and pictures to help them effectively carry out learning [2]. On the other hand, in the specific teaching process, with the help of the network teaching platform, the teaching materials can be better displayed to the students, which contain the corresponding ideological and political elements, so that they can master more sufficient ideological and political theoretical knowledge in their learning.

3.4 Integration in educational practice

First, in the course of course practice, fully integrate ideological and political elements. Specifically, based on the characteristics of professional courses, the ideological and political elements are effectively combined with teaching, and this element is fully reflected in artistic creation and interaction, so that the artistic image can be used to achieve the goal of education and education. Second, in the process of extracurricular practice, fully integrate ideological and political elements. On this basis, for artistic works, it can effectively reflect its attributes, guide students to transform the knowledge they have mastered, and produce practical results. Third, effectively integrate this element in the process of social practice. For professional teaching, practice is an indispensable stage. This element is fully introduced in it, and ideological and political education is further carried out according to relevant places. Such places such as scenic spots and education bases can help students shape correct values. Promote its all-round development.

4.CONCLUSION

All in all, when carrying out professional curriculum teaching, through full integration with ideological and political elements, in addition to strengthening the quality of teaching, it can also form a more considerable education effect. Based on this, ideological and political elements should be actively introduced in the teaching process of art majors. As far as universities are concerned, ideological and political elements can be incorporated in many aspects, such as the curriculum system, to strengthen the quality of teaching.

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Research on the Relationship between Ideological and Political Work and Talent Training in Higher Vocational Colleges

Zhiwei Fu
Changjiang Institute of Technology College of Water Conservancy and Electric Power, Wuhan, Hubei, China

Abstract: Higher vocational colleges are the main front for training skilled talents, aiming to train "craftsman-type" highly skilled talents. Put ideological and political education throughout all aspects of talent training in higher vocational colleges, take the work of cultivating "craftsman type" high-skilled talents as the central link, and undertake the important task of reforming and innovative development of talent training models in higher vocational colleges. Strengthen ideological and political work in terms of cultivating concept renewal, cultivating model innovation, and cultivating method innovation, cultivate talents who meet the needs of social development, and continue to provide high-quality, high-efficiency skilled socialist builders.

Keywords: Ideological And Political; Penetration; Talent Training; Innovation

1.INTRODUCTION

Higher vocational colleges are the main battlefield for the training of skilled talents, aiming to cultivate "craftsman-type" highly skilled talents. Each link of talent training determines the quality and characteristics of talent training in higher vocational colleges, and also determines the relationship between graduates and graduates. The fit of market demand. At the National Conference on Ideological and Political Work in Colleges and Universities, the general secretary pointed out: The ideological and political work of colleges and universities is related to the fundamental issue of what kind of people a college trains, how to train them, and for whom. We must persist in taking Lide Shuren as the central link, putting ideological and political work throughout the whole process of education and teaching, realizing the whole process of educating people and all-round education, and striving to create a new situation in the development of my country's higher education [1]. Put the ideological and political education work through all links of talent training in higher vocational colleges, take the work of cultivating "craftsman type" high-skilled talents as the central link, and undertake the important task of reforming and innovative development of the talent training model of higher vocational colleges. This requires us to handle the relationship between ideological and political work and all aspects of talent training, strengthen ideological and political work in terms of training concept updates, training model innovations, and training methods innovations, and continue to cultivate talents that meet the needs of social development, and continue to provide high-quality , High-efficiency and skilled socialist builders.

2. THE RENEWAL OF THE CONCEPT OF TALENT TRAINING MUST TAKE IDEOLOGICAL AND POLITICAL EDUCATION AS THE FUNDAMENTAL

At the celebration of the 100th anniversary of the founding of the Communist Party of China, the General Secretary solemnly declared: "We have achieved the first centenary goal and built a well-off society on the land of China." Building a moderately prosperous society in all respects has laid a solid foundation for building a modern and powerful socialist country in an all-round way and is a key step in realizing the great rejuvenation of the Chinese nation. Entering the 21st century, the development of my country’s higher education is advancing by leaps and bounds, not only in terms of scale and quantity, but also in terms of functions and functions. In particular, the rapid development of higher vocational colleges has become a way to promote technological innovation and social The backbone of development, which puts forward higher requirements on the concept of talent training in higher vocational colleges, and also raises new problems for higher vocational education.

The traditional education model is usually one-way indoctrination by teachers and passive acceptance of knowledge by students. It is not difficult to see the shortcomings of the traditional teaching model. Students as cognitive subjects are always in a position of passively accepting knowledge throughout the teaching process. Students learn Initiative is ignored. Then, traditional concepts must be updated to adapt to the requirements of the development of the times. The ideological and political work of colleges and universities revolves around the transformation of the traditional educational concepts of teachers and students, and educates and guides educators to use development and innovative thinking to deeply understand the new requirements of the development of the times on talent training, and to explore and study new talent training paths and education New idea. Establish a people-oriented concept, put the cultivation of students' innovative spirit, practical ability and rigorous scientific attitude in the first place, always respect students, care for students, and pay attention to the overall development of students' comprehensive quality, and finally achieve that students will learn, be able to learn, and have the ability to inherit Knowledge and use knowledge, can inherit and innovate knowledge.

3. THE TALENT TRAINING MODEL MUST BE INNOVATIVE, AND IDEOLOGICAL AND POLITICAL EDUCATION MUST BE THE CORE

Since the 18th National Congress of the Communist Party of China, the general secretary has attached great importance to scientific and technological innovation and published a series of important discourses on scientific and technological innovation. He pointed out: speed up the formation of a training mechanism that is conducive to the growth of talents, a mechanism that is conducive to the use of talents, and is conducive to competing to become talents. The incentive mechanism, the competitive mechanism that is conducive to the emergence of all kinds of talents, cultivates a fertile soil for the growth of talents [2]. As a powerful position for scientific and technological development and innovation, colleges and universities are the cradle for the development of science and technology and the cultivation of talents. It is necessary to cultivate talents with a solid foundation, broad knowledge, strong ability, high quality, and a strong innovative spirit and practical ability. The state has always placed education in a strategic position as a priority for development. To implement the fundamental issue of what kind of people are to be cultivated in universities, how to train them, and for whom is to take ideological and political education as the core and cultivate more talents with both ability and political integrity. Innovative talents. Through a series of reforms of teaching system, curriculum system, teaching content, teaching mode, vocational colleges constantly improve ideological and moral education, enrich campus cultural activities, and offer "second classroom" teaching methods to impart knowledge, cultivate abilities, and improve Morality and quality are integrated to form a talent training model with the characteristics of the new era. The purpose of this new model is to establish the main status of students in learning and becoming talents, pay attention to the subjective initiative of teachers and students, and tap and cultivate the potential of innovation and creativity of teachers and students. Setting up a second classroom, introducing a variety of campus cultural activities, creating a good campus cultural atmosphere, is conducive to students' potential. The implementation of these measures has played an important role in cultivating talents with innovative spirit and practical ability in colleges and universities.

4. THE INNOVATION OF TALENT TRAINING METHODS MUST TAKE IDEOLOGICAL AND POLITICAL EDUCATION AS THE KEY

4.1 Cultivation of students' practical ability

The cultivation of students' practical ability is to cultivate students' ability to transform book knowledge into applied knowledge to solve practical problems in teaching practice. Traditional teacher lectures, student memorization teaching methods, and traditional ideological and political work "you speak and I listen, you speak and I do" methods have largely restricted students' divergent thinking, which is not conducive to the cultivation of practical ability. The cultivation of practical ability should start from the comprehensive quality of students, including students' ideological and moral quality, scientific and cultural quality, physical fitness, innovation quality, aesthetic quality and other aspects. This puts forward higher requirements for the ideological and political work of colleges and universities. The ideological and political work of college students must regard improving the practical ability of college students as the central link of the work, carefully design, organize, and implement.

4.2 Cultivation of students' innovative quality

In the process of cultivating innovative quality, one is to play a typical role and create a good atmosphere; the other is to introduce a competitive mechanism to encourage talent innovation; the third is to make the best use of their talents and reflect self-worth. These three elements are the core of the cultivation of innovative talents. Whether college ideological and moral education can be carried out around these three elements determines the quality of the cultivation of innovative talents, and the quality determines the society's standard for evaluating the quality of innovative talents. For this reason, the ideological and political work of colleges and universities must take the cultivation of students’ innovative qualities as the central part of the work, establish advanced models with rich and colorful campus cultural activities, create a good atmosphere, and introduce competition mechanisms with diverse forms of "second classroom" activities. Encourage talents to innovate; develop social practices close to life to make the best use of their talents and reflect their self-worth. Through the subtle penetration of ideological and political education, students' innovative consciousness and spirit are continuously improved.

4.3 Cultivation of students' ideological and moral character

The cultivation of ideology and morality is the cultivation of people in the final analysis. The fundamental task of ideological and political work in colleges and universities is to educate and guide students to determine the correct world outlook, outlook on life, and values, establish lofty ideals and beliefs, and develop good moral qualities. It has a distinct value orientation and can directly affect the overall quality of students. How to cultivate students' ideological and moral qualities requires us to follow the laws of students' ideological and moral cultivation to guide and educate, create a better environment and conditions, continuously strengthen self-cultivation, improve ideological and moral qualities, and cultivate sentiment. Practice has proved that only people with good ideological and moral character can make greater contributions to society.

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Research On the Construction and Application of Smart Campus in Colleges and Universities from The Perspective of Big Data

Yuan Li
Shandong Vocational College of Industry, Zibo, Shandong, 256414, China

Abstract: In the current social development process, various computer, Internet, and big data related technologies are widely used. The development of all walks of life in society is pursuing intelligent transformation, and the use of intelligent technology has become a trend and trend. Based on this, this article starts from the arrival of the big data background environment, studies the construction of smart campuses in universities under this perspective, and explores how smart universities can better develop, so as to fully meet the needs of college students in the new era and promote the development of universities Keep pace with the times, so as to promote the enhancement of the strength and core competitiveness of talent training in colleges and universities.
Keywords: Big Data; Smart Campus; Construction

1.INTRODUCTION

Under the social background of the new era, the application of big data technology can be said to be in full swing. Smart public transportation, face recognition, and smart communities all reflect the advanced nature of big data technology. As an important strategic position for the cultivation of talents in our country, major colleges and universities face the transformation of this kind of technological situation in society, inevitably need to advance with the times to innovate, and the construction of smart campuses has become a pursuit of major colleges and universities. Strengthening the construction of smart campus and actively applying big data technology can also improve the comprehensive development strength of the school. It is also an advantage for the development of colleges and universities, and the construction of intelligent teaching and campus life system can improve campus learning and life. Convenience, relatively speaking, is more convenient for teachers and students.

2. BRIEFLY DESCRIBE BIG DATA AND SMART CAMPUS

2.1 About big data

Big data can be said to be the product of the innovation and development of the times. From a professional point of view, it is a massive data information database. The amount of data involved is so large that it cannot be explored through the current mainstream software tools. Big data is related The birth of technology has made breakthrough progress in the development of computer technology and the Internet. In current social life, the application of a mobile phone can reflect the advanced nature of big data technology. For example, when you search for "refrigerator" in a browser, when you enter the word, big data has already captured it. Later, when you open shopping software, social software, and entertainment software, there is a high possibility that these software will push information about the "refrigerator". This is the advanced point of big data. Any information that can be connected to the Internet is in the Internet. There is almost nothing to hide in the huge world.

2.2 Smart campus

In fact, the construction of smart campuses did not start recently. As early as many years ago, major colleges and universities in our country began to construct smart campuses. However, with the advancement of society and the development of the times, smart campuses are also gradually undergoing innovation and change, especially the advent of the era of big data, which has completely changed the smart campus and directly improved the degree of intelligence of the campus, such as in the library operation system The application of the Internet of Things technology, the establishment of the campus cloud learning platform under the support of cloud computing technology, etc., have improved the level of campus intelligence, and created convenience for the promotion of education and teaching in colleges and universities under the epidemic. With the support of data, remote teaching has been realized [1].

3. THE IMPORTANT VALUE OF SMART CAMPUS CONSTRUCTION IN COLLEGES AND UNIVERSITIES FROM THE PERSPECTIVE OF BIG DATA

3.1 Promote the construction of an advanced teaching platform

In the context of big data, in the construction of smart campuses, the construction of advanced teaching platforms is the most valuable embodiment of the development of college education and teaching. Many schools have always had a MOOC course system, and when students are studying elective courses, they are often more inclined to complete their studies in the MOOC system. Colleges and universities have improved the MOOC teaching system through the application of big data technology, and students study in different time periods. The situation has been presented more clearly, and the end-of-course evaluation is relatively more objective and fair. At the same time, the construction of campus learning systems in major colleges and universities has been innovated under the application of big data technology, and related functions of the teacher and student terminals have been optimized, and the overall smart campus construction has achieved progress.

3.2 Improve campus management

From the perspective of the big data era, the application of advanced science and technology to the construction of smart campuses in universities is more specific, and the construction of an intelligent campus management platform has brought convenience to the management of small campuses. For example, the construction of the school's intelligent power system, the construction of the school's intelligent shower system, and the school's intelligent transportation, so that students' dormitory electricity management, daily school transportation and showers, have intelligent management and control methods, which improves the efficiency of campus management. The way to carry out the innovation of the work of university management departments, the overall campus management level has been improved, and the construction of smart campus has broadened the scope of a.

4. THE SPECIFIC APPLICATION OF BIG DATA TECHNOLOGY IN THE CONSTRUCTION OF SMART CAMPUSES IN COLLEGES AND UNIVERSITIES FROM THE PERSPECTIVE OF BIG DATA

4.1 Application in the teaching system

In the construction of smart campuses in universities, big data technology and the construction of intelligent teaching systems are bound to be closely related, and generally speaking, the application of advanced technology in universities will first be reflected in education and teaching. From the perspective of big data, the smart teaching system has relatively little changed, mainly due to the improvement of online teaching platforms, the establishment of online and offline learning mechanisms, and the innovation of campus comprehensive learning systems. Under the support, some learning materials have become more comprehensive. At the same time, teachers have a better understanding of the learning situation of different students through online search. The display of the specific learning status of students under big data analysis is for teachers to follow. The development of teaching provides a reliable basis.

4.2 Application in campus life

The above mentioned the application of big data in smart campus life, such as smart rain system, smart transportation in school, etc., but in fact, this smart campus life can be further improved. As far as the operation of the library is concerned, the school can use big data to improve the book loan tracking system and add the positioning function to the books, so that when the students borrow the books, the library manager can find out the whereabouts of the books through search, which can reduce the loss of books. Or in terms of scholarship granting, the school can use big data analysis technology to analyze students comprehensively before granting scholarships, and the final evaluation results will determine whether scholarships can be issued, which is more fair and just.

4.3 Application in school management

The application of big data in smart campus management is even more extensive. For example, in the management of student dormitories, a smart dormitory management platform is established. Any problems in student dormitory life can be submitted to the system. The system can identify priorities through data analysis, and then the residential management department will come forward. Solving problems is relatively more convenient. The smart management system distinguishes whether the people in the dormitory are inside or not, and also avoids the management personnel running out, so that the construction of smart campus is also more perfect for the city, and the convenience between students and school management is higher.

5.CONCLUSION

In summary, for the construction of modern universities, colleges and universities actively apply advanced big data-related technologies to promote faster and better construction of smart campuses, which can increase the advancement and convenience of education and teaching, and make it more convenient for teachers As with students' campus life, campus management has also been improved with wisdom and intelligence, and the development of colleges and universities has fundamentally improved the advanced nature. Based on this, the development of colleges and universities and the development of education and teaching have been better improved with the support of big data. The scientific research construction and high-tech teaching of the school have made progress, and it is also an important innovation in talent training.

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Research On the Education and Guidance of College Students' Ideology

Zheng Li
Nanjing University of Science & Technology, School of Science, Nanjing, Jiangsu, China

Abstract: Religion is a complex social phenomenon that can be traced back to the ancient times of mankind. At this stage, religious forces are influential all over the world. Under the pressure of problems such as study, life, and employment, college students are confused and confused about the value of life, leading to the emergence of ideological problems. From the angle of view, how to scientifically educate and guide students' ideological issues will be discussed.
Keywords: Colleges And Universities; Ideology; Student Work.

1.INTRODUCTION

In recent years, there has been a phenomenon of "religious heating up" in domestic universities, and the nature of religion determines that it has a serious impact on the establishment of the three views of college students. In the new era, further strengthening the ideological and political education of college students, scientifically responding to ideological problems of college students, and finding ways to deal with the problems are the focus of college ideological and political education at this stage [1].

The general secretary emphasized: "Under the new situation, to do a good job with religious masses, we must adhere to and develop the socialist religious theory with Chinese characteristics, and fully implement the party's basic policy on religious work. The key is to work hard on 'guide'." [2]

How to correctly guide the ideology of college students and other issues should start from the following three points.

1.1 Determine whether the student has religious beliefs.

1.2 How to avoid public opinion in the process of guiding students' ideology.

1.3 How to scientifically and reasonably guide students with religious beliefs or belief tendencies.

2. SOLUTION IDEAS AND IMPLEMENTATION METHODS

2.1 Understand the situation in detail and identify the religious belief. After learning that students have religious beliefs, take the initiative to have heart-to-heart talks with students. For students who are members of the CCP, probationary party, and Communist Youth League, they need to understand the process of being developed into a CCP member, probationary party member, and Communist Youth League member, and clarify with students that CCP members, probationary party members, and Communist Youth League members must strengthen their belief in communism.

Understand the specific circumstances of students' religious beliefs, and determine whether students believe in religion based on "whether they are familiar with the doctrines and rules of the religion they believe in", "whether they regularly participate in religious activities", and "whether they insist on using religious teachings to guide and regulate their own behavior".

The recognition mechanism is as follows:

2.1.1 Check student information, including admission information form, student files, league member files, party member files, etc.;

2.1.2 Communicate with class teachers, class tutors, counselors, classmates, relatives, etc., and collect relevant information about students;

2.1.3 Have a heart-to-heart conversation with the students, focusing on "Is there any religious belief", "Is there an initiation ceremony", "Are you familiar with the canons and doctrines of the religion you believe in", "Are you regularly participating in religious activities", "Do you insist on using religious doctrines for guidance, Regulate yourself" "whether to preach to others", etc.;

2.1.4 Discussion and analysis of the college party committee;

2.1.5 For students who believe in religion, guide students to adapt to socialist universities; for students who are close to religion, guide students to establish scientific ideals and beliefs.

On the basis of mastering the basic situation of the student and establishing a trust relationship with him, have a heart-to-heart conversation with him, and gradually guide him to pour out his inner thoughts and understand the true state of mind of the student. In the final report, the college's party committee held a discussion and analysis meeting to determine the student's religious beliefs.

At this stage, students who have ideological problems on campus are generally those who are close to religion. Such students have been influenced by family and ethnic customs since childhood. They have never participated in illegal religious activities, have never preached to others, and have never participated in school. After religious activities, their religious attitudes are mostly perceptual, which is not a rational pursuit, and requires continuous attention and strengthened guidance.

For students who have clearly stated that they firmly believe in religion, they should respect their freedom of religious belief, neither students who actually believe in religion, nor forcing students to abandon certain religious beliefs. However, the right to freedom of religious belief of college students is protected by law, but also restricted and restricted by law. To be clear with students, my country's Constitution and Education Law clearly stipulate that education is separated from religion, and no organization or individual may use religion to conduct activities that hinder the national education system; students cannot participate in illegal religious organizations and religious gatherings, and cannot preach on campus , Preaching, propagating theism, distributing religious propaganda, etc.[3].

2.2 Strengthen humanistic care and carry out comprehensive psychological counseling.

College students will have varying degrees of pressure in study, life, employment, etc., and feel confused and confused about the value of life. This is the reason why many students have ideological problems, get close to religion and even believe in religion [4]. Relieving students' pressure in their studies and life, and helping them in their studies, life, etc., is the entry point for ideological problems. In order to solve the above problems, we should start with different aspects according to different situations.

2.2.1 For students with financial difficulties, according to the policy, arrange students with disabilities to work and study and issue subsidies for difficulties;

2.2.2 For students with academic difficulties, convene class committees, senior academic guides, and party members to carry out paired mutual learning activities with them. Introduce outstanding students to communicate with him, help him build up his learning confidence, goals and sense of belonging in life;

2.2.3 For students with employment difficulties, actively recommend students to employers;

2.2.4 Strengthen the home-school cooperation of such students, and invite relatives of students to help students together;

2.2.5 Long-term attention to this class of students, caring about their study, work and life, and encouraging them to be positive and motivated.

2.3 Clarify ideological understanding and establish correct values.

Guide this kind of students to correctly understand religion and our country's religious policies. The essence of religion is a form of consciousness that governs people's destiny and guides people's behavior by their belief in and worship of gods. According to relevant laws and regulations, respect the right of students to believe in religion or not to believe in religion. Any religious activities must be carried out in legal places and cannot be carried out on campus. CCP members, CCP reserve members, and Communist Youth League members believe in scientific communism, a world view that is opposed to religion. Guide such students to know whether they believe in religion or not.

2.4 Promote the core values of socialism and establish multiple channels of psychological support.

Guide grades, classes, and party branches to carry out a variety of theme practical activities, promote the core socialist values, and strengthen the education of correct religious views and beliefs. Through the establishment of a teacher-student interaction platform, peer-to-peer mutual assistance consultation, etc., a multi-channel psychological support system for students is established to maintain students' mental health and enhance their sense of belonging.

3. EXPERIENCE AND INSPIRATION

3.1 To avoid blindly dealing with students' religious beliefs, it is necessary to correctly understand and implement the party's religious policies.

Adhering to the separation of education and religion is the basic policy for correctly handling the relationship between socialist education and religion. Establish a management system and mechanism for religious work on campus in accordance with the law, stop and crack down on illegal religious activities, and provide training, guidance and norms for the development of religious work for counselors. On the basis of fully respecting the choice of belief, adhere to the guiding and cohesive role of the socialist core value system on religion, patiently and meticulously carry out ideological work, and concentrate the will and strength of religious students to aspire to become talents, and strive to build the motherland.

3.2 The handling of religious beliefs cannot be generalized, and the specific circumstances of students' religious beliefs must be accurately identified.

Affected by international, domestic, and university's own reasons, the status quo of university students' religious beliefs has shown an upward and diversified trend, and the reasons for their religious beliefs have also become more complicated. College students' religious beliefs are more a matter of ideology, which is different from religious activities with ulterior motives. No organization or individual is allowed to carry out religious activities in the school. For students who believe in religion or are close to religion, they must not exaggerate or severely deal with it in the process, nor can they turn a blind eye and let them go.

3.3 Religious issues should be aided in daily education, and we should do a good job in humanistic care and ideological guidance for students.

It is necessary to insist on solving the practical problems encountered by students in their study and life as the starting point to solve the problem of religious belief, and at the same time strengthen the education of students' socialist core values and Marxist religious views, and improve the effectiveness of ideological and political education. Strengthen the cultivation of students' scientific spirit, and solve doubts and doubts for students' development.

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Study on the Strategy of Suicide Risk Assessment and Intervention Mechanism of Contemporary College Students--Taking the investigation of suicide intention and psychological status of students in a college in Shandong as an example

Yuan Liang
Qingdao City University, Qingdao, Shandong, 266106, China

Abstract: This survey is based on the suicide risk assessment data of freshmen screening, daily counseling and crisis intervention in a university in Shandong for ten years, and combs the current crisis intervention work. This paper analyzes the causes of students' suicide intention from three aspects of theory, data and practice, and puts forward suicide intervention measures in combination with the characteristics of the times, which plays a dual role in deepening the theory and verifying the practice of students' suicide intervention, so as to provide reference for the majority of relevant staff.
Key Words: Students; Suicide Intervention; Mental Health

1. CURRENT SUICIDE RISK ASSESSMENT AND COUNTERMEASURES

Suicide is a serious public health and safety problem. Compared with foreign countries, the suicide rate of students in China has been relatively low, but in recent years, campus suicides have been frequent, which has brought great harm and loss to society, schools, families and individuals. Based on the ten-year psychological evaluation, daily interviews and intervention records of a college in Shandong, this survey reflected on the characteristics of College Students' suicide crisis and the current situation of school suicide intervention.

1.1 Investigation and evaluation of suicide intention in enrollment evaluation

Since 2009, the college has conducted psychological screening for freshmen (including newly-upgraded students), established psychological files according to the evaluation results, classified the students' psychological situation, conducted one-to-one interviews with students with (or had) suicidal intention, and conducted risk assessment on their current suicidal intention and implementation possibility.

Note: the psychological test of 2019 freshmen adopts the Chinese College Students' mental health evaluation system of the Ministry of Education. The evaluation system can not distinguish students with "suicide intention" from other psychological problems, so it will not be compared with other years.

There were 89 students who intend to commit suicide in 2011, accounting for 1.8% of the total number of freshmen, from 2013 to 2018, 77, 70, 51, 77and 88, respectively, the rate of the total number, were 1.8%, 1.6%, 1.1%, 1.6% and 1.8%, respectively. According to the data, the number of students who had suicidal tendencies from 2011 to 2017 increased or decreased slightly, except that they accounted for 2.9% of the number of Freshmen in 2012. The proportion of students who had suicidal intentions increased by 3 percentage points in 2018 and 2020, reaching 4.7% and 4.1%.

1.2 Daily counseling and suicide investigation of crisis intervention

From September 2020 to March 2021, the statistics reported by each department of the college every month show that 33 people are taking psychotropic drugs, accounting for 20% of the people who need attention; 31 people were scheduled for evaluation and consultation by department counselors, including 26 referred to the hospital and 12 who committed suicide or self injury.

Students' suicide caused by crisis emergencies can be predicted through the mastery of crisis events and the current psychological evaluation of the parties, but the suicide intervention and monitoring of students with certain mental disorders is long-term and more difficult [1] Therefore, in addition to the evaluation of students with suicidal intention, it is very necessary to pay attention to students who have been diagnosed with certain mental disorders. The college conducts investigation and summary of students' psychological status every month to ensure that the psychological counseling center and departments master the information of students with high risk of suicide. Full time psychological teachers connect with counselors according to the reported data and investigation, and feed back the information of high-risk students found in other departments to relevant counselors in time.

1.3 Psychological crisis and suicide intervention measures

For students with strong suicidal intention screened by freshmen evaluation, the psychological counseling center divides treatment and services according to the evaluation and interview results: psychotherapy (hospital referral), psychological counseling (psychological counseling center) and psychological counseling (Department), especially focusing on students who have committed suicide and are taking antidepressants. Such students need to be directly transferred to counseling or monitoring interviews to ensure the medication and personal safety of students taking drugs. At the same time, their dynamic and psychological status will also be reported in the monthly investigation form of the Department.

For the school management of students suspended from school due to psychological problems and students taking drugs, standardized documents such as students' psychological service and resumption process after returning to school, as well as students' psychological file management have been formulated respectively, and closed-loop management has been carried out for the evaluation, referral and follow-up supervision of students with confirmed mental disorders.

In September 2020, all departments recommended excellent teachers of psychological work to work with the psychological counseling center; Assign full-time personnel to expand the team scale of professional mental health work; Establish a multi-level linkage mechanism and a normalized psychological crisis early warning mechanism; Continuously strengthen the development and implementation of special seminars and training on psychological crisis, clarify the work content, and improve the efficiency of psychological work.

2. CHARACTERISTICS AND INTERVENTION DIFFICULTIES OF CONTEMPORARY COLLEGE STUDENTS' PSYCHOLOGICAL CRISIS

Based on the suicide investigation and intervention data of the college, the number of students who have committed suicide and suicide intention has increased sharply in recent years, and they are gradually younger. Many of them have committed suicide (self injury) or received referral and treatment services in middle school; The number of students diagnosed and taking psychotropic drugs is also gradually increasing. Combined with the current relevant research, it is found that this phenomenon is a common feature of contemporary college students' psychological problems and suicides, which are closely related to the times and society.

In the middle and late 19th century, European sociologists found that the rise of suicide rate was consistent with the rise of social modernization through a large number of relevant data analysis. Masaryk (1970) also proposed that suicide is an unexpected result of the improvement of education level: the abandonment of the traditional way of thinking and the preference for rational thinking gave birth to the intention to solve personal problems by suicide [2]. Social modernization not only brings about the change of thinking mode, but also gives birth to a new social phenomenon - "Involution", which emphasizes high achievement and perfectionism, brings unprecedented pressure on individual survival and development, and produces irrational competition to achieve external high standards. The coexistence of emptiness and anxiety leads to the defects of individual values, weakens confidence and will, and finally leads to the depletion of psychological energy.

There is a long-standing concept in China that achievement is the only standard to measure self quality. This atmosphere makes students unable to see other aspects of life. Therefore, even after entering the University, they will no longer be able to find the meaning of life after completing the college entrance examination, making the whole person confused. This psychological state lacks internal motivation and vitality, It has become one of the main reasons for suicide intention in the future. Moreover, academic pressure causes interpersonal tension, which makes it difficult for students to find emotional support and resources in the face of difficulties, and finally evolves into psychological crisis.

In the process of daily consultation and crisis intervention, the author found that students' parents know little about mental health. When they learn that their children have suicidal intention or psychological problems, some parents' feelings of guilt and shame will make them unacceptable. At the same time, they are worried that the clinical treatment of students after being diagnosed will affect their studies. Therefore, they resist the intervention of the school and have a low degree of cooperation. Such refusal or inaction will often cause secondary harm to those in crisis.

In addition, there is a fault between the hospital's clinical treatment and the follow-up psychological service. At present, there are no unified and detailed process standards and policies for the referral work of the school. After a crisis, if parents fail to accompany students to see a doctor in time, it is still difficult for the school to refer; Moreover, after diagnosis and treatment, doctors do not have unified evaluation standards for students' ability to return to school. Schools can only rely on experience to judge whether students have the ability to return to school and potential suicide risk in the future. It is also difficult to master students' drug taking and carrying.

3. MULTI-FIELD COLLABORATIVE PREVENTION AND INTERVENTION OF STUDENTS' SUICIDE EVENTS

Suicide crisis intervention is not only a social responsibility, but also a public health security and education problem. Only multi-party linkage can effectively control the incidence of suicide among college students to a certain extent.

3.1 Connecting clinical treatment and school psychological services

Timely referral of students suspected of serious mental or mental illness to professional institutions for diagnosis and treatment is very important for suicide intervention. Strengthen the linkage between hospitals and schools, refine and implement the processes and standards of green channel work. If after diagnosis and treatment, doctors can give clear assessment opinions on the return to school of students in treatment, which not only provides professional medical support and help for crisis intervention such as school suicide, but also provides guidance for students' psychological work after returning to school in the later stage.

3.2 Strengthening the publicity of family school linkage and family mental health education

There is also a significant correlation between family function and environment and student suicide rate, especially in the event of major negative crisis events, stable family structure and good family relations will become high-quality psychological resources and support for those in crisis. Strengthen the guidance of family education and provide educational resource support to help parents understand "why" and "how" to realize family education. Only by organically combining family education with school education, forming a joint force of resources and establishing a large education system for the common education of the whole society, can our education environment be further optimized and the goal of improving students' psychological quality be completed. Popularizing mental health knowledge to parents is an important link in the linkage between home and school. At the same time, the formulation of crisis intervention and resumption management policies and regulations for students who have received crisis intervention can not only eliminate parents' concerns about students' difficulties in returning to school, but also standardize the school's psychological service management for such students.

3.3 Establishing and improving the crisis intervention and public-opinion handling team

Most universities have set up crisis intervention teams, and the working mechanism of crisis intervention is relatively mature and complete. However, in the new media era, news and public opinion have an important impact on crisis intervention. The rapid transmission and diffusion of information may lead to the non benign fermentation of crisis events, which will lead to various negative effects. While establishing the crisis intervention team, it is also urgent to improve the news and public opinion disposal of crisis events, formulate a public opinion work plan in advance, actively guide and apply the media, ensure that the latest news is released at the fastest speed in the shortest time, correctly guide public opinion, prevent risks and avoid triggering such events.

3.4 Encouraging primary and secondary schools to set up life education courses, and carrying out safety education and publicity on suicide prevention from a positive psychological perspective

Important psychological factors such as individual self formation, personality construction and value establishment are developed and formed before the age of 18. At present, the mental health work in primary and secondary schools has just started, lack of psychological quality counseling and life education, and few primary and secondary schools set up crisis intervention teams and formulate relevant measures and policies. Therefore, the abnormal psychological problems of teenagers that could have been eliminated in the bud can not be solved in time, and some signs of suicide can not be found in time.

In primary and secondary schools, we should expand the introduction of life education, physical health education, scientific knowledge, cognitive decision-making education, so as to enhance students' ability of emotional regulation, conflict management, risk cognition, frustration handling and crisis response.

3.5 Changing the perspective of mental health work

The safety education of suicide prevention is different from the safety publicity of other topics. The content of education and publicity should pay attention to avoid triggering the existing suicide complex of individuals. Therefore, in order to prevent imitation effect, the safety education for suicide prevention should take children in normal psychological state as the object, and develop and tap students' positive psychological quality and psychological potential from the direction of positive psychology through narrative meaning and positive construction. Education, consultation resources and publicity will turn to students with mental health, from solving clinical problems to students' growth and development. Help them understand that suicide is not the fundamental way to solve problems, and help them understand their rich social resources. This is very important to restore their psychological balance and prevent their imitation suicide.

Based on the current school suicide intervention strategy, the author summarizes the difficulties encountered in practical work and reflects on it. Put forward intervention and improvement suggestions from the aspects of medical treatment, family, school education and management, as well as media publicity, hoping to improve the coping strategies of students' suicide events in multiple fields, so as to effectively control the incidence of suicide events to a certain extent. With the help of society, create a mental health atmosphere of paying attention to themselves and caring for others, promote students to feel the colorful life, maintain a positive and optimistic attitude, and realize growth.

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Discussion On the Construction Strategy of Enterprise Financial Internal Control Management System

Tingting Liu
Accounting Institute, Zibo Vocational Institute, Zibo 255314, Shandong, China

Abstract: The modernization of society is inseparable from the promotion of enterprises in various fields. With the continuous development of the current era, the competitiveness of various industries is very large. Enterprises must pay attention to improving their own competitiveness. Among them, financial management Competitiveness is related. At present, companies must pay attention to strengthening the construction of internal control management systems. Based on this, companies should make plans from multiple aspects, understand the importance and necessity of financial internal control management, and ensure the scientific and rationality of the system so that it can promote The modern development of the enterprise.
Keywords: Internal Control; Corporate Finance; Management System; Construction Strategy

1. THE CORE PURPOSE OF BUILDING AN ENTERPRISE'S INTERNAL FINANCIAL CONTROL SYSTEM

1.1 Create a foundation for the realization of corresponding laws and regulations

In modern society, our country has entered the era of informationization, and the emergence of new financial management models has been widely used in the financial work of enterprises, so that financial management can be carried out smoothly. In addition, under the background of the current information age, enterprises are also developing in the direction of diversification. Not only large enterprises have emerged, but many multinational enterprises have emerged, greatly improving the economic benefits of society. On this basis, my country has also formulated a variety of development models for enterprises to rapidly strengthen their competitiveness, enabling them to gain a firm foothold in a highly competitive society, and provide a guarantee for the development of my country and the industry. However, the emergence of this development trend has increased the number of laws and regulations in the development process of enterprises and improved the control and management system of corporate finance. Not only that, the reason why companies have to establish a complete corporate financial management system is because the traditional management model has been unable to meet the requirements of social development, and even caused many problems in financial management, which hindered the smooth development of the work [1]. The emergence of the control management system can further restrict the financial work of enterprises, greatly improve the quality of financial management work, and make it meet the requirements of laws and regulations in the industry and social development, so as to allow enterprises to obtain higher legitimate rights and interests. Good development.

1.2 The safety of enterprise materials is guaranteed

At present, the emergence of the enterprise financial control management system has provided great convenience to the financial management of the enterprise, and its complexity has also been significantly improved. At the same time, it has also enabled the work to achieve effective guidance and better avoid The appearance of quality problems in the work process achieved the expected goal. In addition, the construction of the corporate financial control management system can also enable the staff to cooperate more coordinately and tacitly, effectively eliminate the constraints between staff, and allow them to use corporate assets in a scientific and reasonable manner, thereby greatly improving corporate assets The actual utilization rate provides a guarantee for enterprises to obtain more benefits. In addition, the construction of the system has also played a good role in restraining the employees of corporate financial management to a certain extent. At the same time, it has also greatly reduced the probability of quality problems, standardized the behavior of the staff, and made them strictly follow Standards to carry out work, in this way, not only improve the safety of enterprise financial management, but also provide correct guidance for the future development of the enterprise.

2. STRATEGIC ANALYSIS OF CONSTRUCTING CORPORATE FINANCIAL INTERNAL CONTROL MANAGEMENT SYSTEM

2.1 Constructing an internal financial control system

With the rapid development of society today, various fields in our country have achieved rapid economic growth, which has made many contributions to the society and greatly improved the economic benefits of the society. Then in the management of the enterprise, if the financial management is to be carried out smoothly, it must correctly recognize the importance and role of the financial management personnel in the financial management work, so as to better mobilize the management personnel to the work. Enthusiasm and initiative, build a financial internal control system, improve the self-motivated work of personnel, so that they can devote themselves to financial management, so that the work can be carried out smoothly and effectively. In addition, when constructing the financial internal control system, the leadership should also strengthen the role of financial management in the development of the enterprise, and strengthen their own awareness of internal control, because finance is an indispensable part of internal control and can play a role in internal control. Therefore, relevant leaders must take the right way to do it, greatly improve the position of financial managers in the work, let them give full play to their own subjective initiative, and actively participate in the management work, better Improve their own risk management awareness and ensure that financial management will not be interfered by external factors [2]. In addition, doing a good job of accounting is also a link that the staff must go through. The second review of cross-level information can better ensure the accuracy and authenticity of financial information, so as to facilitate the smooth development of corporate financial management. provide assurance.

2.2 Establish and improve the internal financial management system

At this stage, in the management of corporate finance, the internal control management system occupies a very important position and plays a vital role. Based on this, the relevant leaders of the enterprise must grasp this key point in time, improve the existing internal control management system, formulate a work system based on the actual situation of financial management work, and clarify it to the individual, so that each employee They can clearly understand the responsibilities and obligations of the post, so as to better strengthen the behavior and business norms of employees, as well as their financial approval and supervision, to ensure the smooth development of financial management. At the same time, when collecting and sorting out accounting data, the staff must prepare the accounting documents in advance, and then submit them to the relevant financial management department for approval and processing after they pass the review. This can better guarantee The authenticity and integrity of accounting information allows the smooth development of financial management work without quality problems, which greatly enhances the constraints between various departments and develops in a better direction.

2.3 Strengthen internal supervision of corporate finance

Under normal circumstances, companies often set up an independent supervision department to supervise and manage this work when conducting financial management work, and then select people with strong professional level and work ability from many employees to take up the work to ensure The scientific nature of the internal control management system makes it a reference basis for staff to carry out financial management work, and provides a guarantee for the smooth development of the work. In addition, in the process of work, supervisors must carry out regular inspections to fully and accurately implement the company’s financial system and regulations. Once problems are found, they must be resolved as soon as possible, and the root causes must be contained to provide financial management work. Provide a high-quality working environment.

3. CONCLUSION

To sum up, in today's rapid social development, our country has achieved rapid economic growth in various fields, made many contributions to the society, and greatly improved the economic benefits of the society. However, according to the current situation, most of our enterprises have encountered many problems in the development process, especially in the management of corporate finance. The main reason is that the relevant leaders of the enterprise did not bring in professional managers to carry out financial management in time. , Which ultimately led to the lack of a complete control and management system in the financial department, which had a serious impact on the smooth development of work. Therefore, it is necessary for companies to take correct measures to solve these problems, establish a sound control and management system for the financial department, and introduce professionals to take up this job, so as to better promote the development of the company.

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My Opinions on The Management and Utilization of Back Periodicals in The Libraries of Higher Vocational Schools

Na Sun
Shandong Polytechnic, Jinan, Shandong, 250104, China

Abstract: In higher vocational schools, the old library journals are important reference materials for teachers and students to consult information, and at the same time, they are also valuable documents for scientific research and teaching in higher vocational schools. The database of back issues is very sacred in the hearts of college teachers and students. In the daily teaching and research work, it is necessary to implement scientific management of back issues, make full use of the resources of past issues, improve the scientific research level of teachers and students in colleges and universities, and improve the application quality of past issues. This article analyzes the current problems in the management of back issues in university libraries, and discusses the methods for the management of back issues in libraries, and then takes effective measures to increase the application rate of back issues for reference by relevant personnel.
Keywords: Higher Vocational School; Library; Management Of Back Issues; Utilization

1.INTRODUCTION

Teachers and students of colleges and universities first choose current publications when reading or borrowing publications in the library, and often only read past publications when accessing related materials. The library of past publications holds very valuable teaching and research literature or data value. However, in recent years, the reading rate of back issues has shown a downward trend. However, the past issues are not obsolete publications. The documents covered by them are the most authoritative and the data content is relatively high. Although the current network technology level is relatively advanced, the application of mobile communication equipment It is also more popular, which will have some impact on paper publications. However, the back issue is still a paper journal that the teaching and research staff pay more attention to, and it is also an important reference basis for its publication or exchange of scientific research results. Therefore, it is still necessary to properly manage the back issue and use it rationally in specific work. It is necessary to conduct an in-depth analysis of the current issues in the management of back issues, and to develop a reasonable management method for back issues and effective countermeasures to improve the utilization rate of back issues, so as to help better implement the library's back issues management , And gradually improve and perfect the back issue management system to provide readers with good collection services.

2. PROBLEMS IN THE MANAGEMENT OF BACK ISSUES IN THE LIBRARIES OF HIGHER VOCATIONAL SCHOOLS

2.1 High collection of back publications

After applying the method of collecting all past issues, although all past issues can be preserved, there are many disadvantages and drawbacks. For example, when there are too many past issues, it increases the workload of binding and consumes a lot of time. More capital costs will be invested, and at the same time it will take up space in the library. At the same time, the utilization rate of back issues is extremely low. For example, many schools produce hundreds of professional teaching and research journals every year. It was found that the borrowing frequency did not exceed three times, resulting in a decrease in the utilization rate of back issues. The high collection of back publications is a common problem in the library management of higher vocational schools, and it is also a problem that needs to be solved urgently, which affects the improvement of the efficiency and quality of library management of back publications.

2.2 The number of back issues has increased year by year and will not be screened

At present, in order to ensure the integrity of the collections of back issues, some college libraries re-bundle the back issues into a book for storage every year. Under such circumstances, the category, number, and area of the back issues have increased year by year. The increase has increased the pressure and burden of the management of the back issues, which also prolonged the cycle of the management of the past issues, which has a certain impact on the readers of the publication to retrieve the publication information, and cannot ensure the convenience of information access [1].

2.3 High repetition rate of back issues

At present, in order to expand the collections, some colleges and universities in our country do not carry out the screening of old journals, or some university libraries cannot set the standards for screening old journals, so they adopt traditional binding methods for the functions of old journals. To manage. In addition, there are still a shortage of staff in some university libraries. The incumbent library staff are unable to handle the heavy-duty screening work. In the end, it also causes a large number of repeated bindings of the back issues in the library, which makes the management of the back issues The work is difficult to proceed in a normal and orderly manner, which has affected the increase in the utilization rate of back issues.

3. SPECIFIC MEASURES FOR THE MANAGEMENT OF BACK ISSUES IN THE LIBRARIES OF HIGHER

VOCATIONAL SCHOOLS

3.1 Improve the management model of back issues

First of all, we need to pay attention to the selection of journals and strictly control the quality of collections. According to the future development plan of higher vocational schools and the characteristics of the department's specialty, the actual status of journal publications should be clarified, the procurement funds should be used scientifically, journals with high academic value and high reading demand should be selected, and the quality of publications should be strictly controlled in the procurement process.

In the process of binding publications, it is necessary to comprehensively consider and analyze electronic journals, databases and readers' reading needs, and carry out scientific and reasonable classification and binding, so as to effectively prevent repeated filing and collection procedures, and effectively compensate for paper journals and paper journals. The defects and deficiencies of electronic journals.

For academic journals, it is necessary to meet the needs and standards of the department's professional settings during the binding process, so as to improve the management mode of back issues and help readers to conduct academic exchanges and research work [2].

3.2 Improve the management mechanism of back issues

Improving the management mechanism of past journals is a guarantee condition for increasing the application rate of past journals. First of all, it needs to be bound in time and put on the shelves reasonably. The binding time for back issues generally takes about half a year. If the binding time overlaps with the time for students to prepare graduation thesis and teachers to prepare title materials, then important academic journals need to be bound first. Generally, batches or installments can be used to reduce the binding cycle. , And to meet the needs of readers for accessing journals, including academic and reading journals; in addition, it is necessary to unblock the borrowing channels and improve the borrowing environment, so as to provide readers with a superior reading environment and a good atmosphere.

3.3 Strengthen the redevelopment of past issues

Compared with other books, the past issue has its own characteristics, which is mainly reflected in the continuous content of the publication, a certain update cycle, and the information content contained in it is richer, and the information coverage is wide. In many cases, there will be many past issues. The theme spans different fields and disciplines.

Due to this characteristic of the past issue, it will cause some inconvenience for students to obtain the knowledge content of the past issue. In improving the management of back issues, higher vocational schools need to collect, process, process, and count specific information through the application of Internet information platforms based on school-running characteristics, professional positioning and subject advantages, so that they can be applied to the research field again.

3.4 Pay attention to the establishment of a sharing mechanism for back issues

In modern higher vocational school library management work, it is necessary to recognize the current situation of limited library space and low application rate of back issues. Therefore, it is necessary to pay attention to the establishment of a sharing mechanism for back issues. On this basis, the library's collection space can be expanded, the pressure on the library's collection space can be reduced, and problems such as duplicate collection or unreasonable supplementation can be prevented to a certain extent, and the quality of the collection service can be improved, and the scope of influence can be expanded. Readers provide convenience [3].

4.CONCLUSION

In modern vocational school library management of back issues, it is necessary to recognize the problems in the management of back issues in vocational school libraries, including the high collection of back issues in Korea, the increasing number of past issues year by year, no screening, and high repetition rate of past issues , And on this basis, apply effective measures to improve the management of the library's back issues, including improving the management model of past issues, improving the management mechanism of past issues, strengthening the redevelopment of past issues, and paying attention to the establishment of a sharing mechanism for past issues, so as to improve and improve The management system and model of back issues can improve the utilization rate of back issues and provide readers with high-quality and efficient collection services.

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Research On the Current Situation and Reform Path of Innovation and Entrepreneurship Education in Application-Oriented Colleges and Universities

Guangqiang Tian[1], Lingyu Hou[2]*
[1]*School of Intelligent Engineering, Huanghe Jiaotong University, Jiaozuo, Henan 454950, China;*
[2]*School of Resources and Environment, Henan Polytechnic University, jiaozuo, Henan,454950, China*
[*]*Corresponding Author.*

Abstract: With the continuous development of the economy and society, the demand for applied talents has seen a “blowout” growth, making the innovation and entrepreneurship education of application-oriented colleges and universities have received unprecedented attention. Accordingly, most application-oriented colleges and universities in our country have opened innovative and entrepreneurial education courses for college students to cultivate their innovative thinking consciousness and ability, and thus alleviate the employment pressure. Therefore, how to reform innovation and entrepreneurship education to improve the quality of innovative and entrepreneurial talent training has become a research hotspot in the field of teaching and its reform among application-oriented colleges and universities. Through an in-depth analysis of the current situation of innovation and entrepreneurship education of application-oriented colleges and universities in China, this article elaborates on the practical strategies of how to promote the reform of innovative entrepreneurship education in application-oriented colleges and universities in terms of perfecting the teaching system, innovating teaching models, strengthening teacher construction, expanding practical teaching space, creating campus cultural atmosphere, and improving security measures.

Key Words: Application-Oriented Colleges And Universities; Current Situation Of Innovation And Entrepreneurship Education; Reform Path

1. INTRODUCTION

Applied undergraduate colleges emphasize the cultivation of students' technical abilities, and require students to apply theoretical knowledge to real life and solve problems in their real life. Under the current background of double innovation, applied undergraduate colleges and universities should implement relevant government policies and cultivate a steady stream of technical talents for socialist modernization.

2. CHARACTERISTICS OF INNOVATION AND ENTREPRENEURSHIP EDUCATION

Enhancing innovation and entrepreneurship education can replace employment with innovation and alleviate the severe employment pressure in the current society, so it has become an important content of my country's higher education development. To strengthen innovation and entrepreneurship education must respect its essential characteristics. One is the feature of subjectivity, that is, the subjectivity of learning, emphasizing that the purpose of education is to promote the growth of educational objects and give full play to the subjectivity of both the teaching subject and the learning subject. Therefore, in innovation and entrepreneurship education, teachers should insist on student learning The subjectivity of learning will return the autonomy of learning to students, and then realize students' self-growth. The second is individualized characteristics, which means that students have different personality characteristics due to different factors such as life background, psychological characteristics, and other factors. Innovation and entrepreneurship teachers implement differentiated teaching content according to different personality characteristics of students to meet the learning needs of students . The third is the characteristics of comprehensive development. At present, education in our country emphasizes the development of all aspects of students' morality, intelligence, physical beauty, and innovation and entrepreneurship is a comprehensive teaching subject. Strengthening its education construction can effectively promote the development of all aspects of students' morality, intelligence, physical beauty.

3. THE NECESSITY OF STRENGTHENING INNOVATION AND ENTREPRENEURSHIP EDUCATION IN APPLIED UNDERGRADUATE COLLEGES

3.1 The need to promote economic and social development

With the continuous deepening of reform and opening up, the market's demand for applied technical talents is increasing, and the cultivation of talents in colleges and universities mostly attaches importance to the theoretical knowledge structure of students, resulting in a serious shortage of applied talents in the society. This kind of strong conflict is serious. Restricted the development of social economy. Therefore, it is imperative to strengthen the training of applied talents. As an important base for the training of practical talents in my country, applied undergraduate colleges should actively respond to the government's call, increase the intensity of innovative talent training, and improve the practical skills of talents. , And then meet the society's demand for talents, and effectively promote the development of society.

3.2 The necessity of improving the quality of talent training in universities

The distinguishing feature of applied undergraduate colleges and universities is the cultivation of applied talents. The main goal of education is to cultivate applied talents that serve economic development. To promote the comprehensive strength of colleges and universities, it is necessary to improve the quality of application-oriented personnel training, to effectively meet the needs of the society for talents, and then to contribute to the development of the economy and society. [1] At the same time, it can further promote the improvement of the comprehensive strength of applied undergraduate colleges.

3.3 The need to promote the all-round development of students

With the continuous development of the economy and society, market competition has become increasingly fierce, coupled with the blessing of the popularization of higher education, the employment of social talents has become more and more severe. In order to alleviate the current increasingly prominent forms of employment, the government advocates innovation and entrepreneurship education, emphasizes the change of the current talent structure in my country, and focuses on cultivating technical talents in response to market demand. Applied undergraduate colleges are an important base for training technical talents and should be actively involved. Respond to the government's call to improve students' practical ability. [2]

4. THE STATUS QUO OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN APPLIED UNDERGRADUATE COLLEGES

4.1 Insufficient awareness of innovation and entrepreneurship

First, the school leaders lack awareness. The leaders of applied undergraduate colleges did not really attach importance to innovation and entrepreneurship education, and they have one-sided understanding of them. [3] They did not deeply understand the essential value of innovation and entrepreneurship, so they did not provide human, material and financial support for their development. Development is seriously lagging behind. Secondly, the students' awareness of innovation and entrepreneurship is insufficient. Most college students do not really understand the important value of innovation and entrepreneurship for self-development, and only think that innovation and entrepreneurship practice activities are only part of the selected students, and have nothing to do with them, so their enthusiasm for participating in innovation and entrepreneurship practice activities is relatively low.

4.2 Teachers' ability needs to be improved

First of all, innovation and entrepreneurship is a comprehensive teaching subject, which not only emphasizes the theoretical knowledge of teachers of innovation and entrepreneurship, but also emphasizes their practical skills, so teachers are more demanding. At present, most of the teachers of innovation and entrepreneurship in colleges and universities lack rich practical experience due to long-term teaching tasks, and they are unable to provide students with professional guidance in practice. Secondly, teachers' innovation and entrepreneurship-related theories also need to keep pace with the times and be constantly updated, and colleges and universities have not provided teachers with sufficient channels for further education, making teachers unable to enrich themselves in time, and therefore unable to provide students with professional innovation and entrepreneurship guidance.

4.3 The curriculum system is not perfect

4.3.1 The curriculum is single. First of all, the talent training mechanism is not sound. Most of the innovation and entrepreneurship education departments in colleges and universities include employment guidance centers, management schools, school-enterprise cooperation offices and other departments, but there is no unified management department. Effectively improve the quality of training innovative and entrepreneurial talents. [4] Secondly, although most undergraduate colleges and universities have generally carried out innovation and entrepreneurship teaching courses, most of them tend to be formalized and the teaching effect is limited. For example, the innovation and entrepreneurship courses offered by most colleges and universities are elective courses, and students can choose whether to participate or not, so the courses are not universal. In addition, the guarantee mechanism is not sound. Innovation and entrepreneurship is an emerging professional subject. There are still many gaps in my country's relevant laws and policies, and a complete set of policy systems has not yet been issued. Therefore, it is impossible to provide effective planning and guidance for the cultivation of innovative and entrepreneurial talents in colleges and universities. At the same time, the lack of sufficient financial support for innovation and entrepreneurship education prevents students' innovation and entrepreneurship projects from developing smoothly, let alone marketization, which seriously affects the quality of innovation and entrepreneurship talent training.

4.3.2 The teaching content is scarce. First of all, as the development of innovation and entrepreneurship continues to deepen, major colleges and universities have opened professional courses for innovation and entrepreneurship in order to alleviate employment pressure. However, due to the impact of the system, the teaching theory of innovation and entrepreneurship in colleges and universities cannot break through the constraints of traditional concepts. Due to the insufficiency of practical education, a large amount of theoretical knowledge cannot be applied to teaching practice. The gap between theoretical teaching and practical teaching has largely affected the improvement of students' comprehensive ability. [5] Secondly, the teaching only emphasizes the teaching of students' theoretical knowledge and technology, ignoring the diverse individual needs of students, and adopting a unified teaching content for innovation and entrepreneurship teaching is not conducive to the formation and development of students' individual consciousness. Failed to promote the transformation of students from passive employment to active entrepreneurs with innovative spirit. In addition, the current development time of innovation and entrepreneurship education in my country is relatively short and the level is low. Its teaching content depends to a large extent on foreign advanced innovation and entrepreneurship education, and the innovation and entrepreneurship teaching content of most undergraduate colleges directly integrates excellent foreign teaching The theory is rigidly applied to the teaching. In order to fully consider the teaching practice of the school and the personality characteristics of the students, the teaching content is often "unacceptable" and it is difficult to achieve the expected results.

4.4 Few practice platforms

Innovation and entrepreneurship education emphasizes the cultivation of students' practical skills, requiring students to use theoretical knowledge to solve innovation and entrepreneurship problems in real life, and students' practical skills require a certain place for practice. Therefore, if you want to improve the quality of innovative and entrepreneurial talent training, you must Strengthen the construction of innovation and entrepreneurship practice platforms. At present, the practice platform of applied undergraduate colleges is seriously inadequate, which affects the improvement of students' abilities. First of all, due to the limitations recognized by the leaders of applied undergraduate colleges, colleges and universities have not strengthened the construction of on-campus practice bases, resulting in backward innovation and entrepreneurship-related supporting facilities that cannot meet teaching needs. Secondly, innovation and entrepreneurship is a complex system engineering that needs to play the role of the three parties of universities, governments, and enterprises in coordinating education. However, the government and enterprises have not been able to play their active role, resulting in insufficient innovation and entrepreneurship education. [6]

5. REFORM PATH OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN APPLIED UNDERGRADUATE COLLEGES

5.1 Improve the teaching system

5.1.1 Improve the awareness of innovation and entrepreneurship. First of all, the leaders of applied undergraduate colleges and universities should raise their awareness of innovation and entrepreneurship, and incorporate the strengthening of innovation and entrepreneurship into the development plan of universities. Secondly, improve students' awareness of relevant issues. Help students make career development plans, improve students' awareness of their future career development, strengthen their awareness of innovation and entrepreneurship, and guide students to actively participate in various practical activities in the school, helping students to cultivate hard-working qualities, language expression and teamwork in the process of practice Cooperation and other capabilities.

5.1.2 Universities should improve their organizational structure. Colleges and universities should strengthen the exchanges and cooperation of various departments of innovation and entrepreneurship, and clearly divide each other's responsibilities and obligations. At the same time, colleges and universities should strengthen the exchange and cooperation between innovation and entrepreneurship teaching departments and other professional courses, promote the in-depth integration of each other, and help students better integrate professional subject knowledge. Apply to innovation and entrepreneurship practice activities to improve the feasibility of practice. Improve the efficiency of innovation and entrepreneurship teaching. In addition, colleges and universities should also cover innovation and entrepreneurship education to the entire school, so that every student can receive innovation and entrepreneurship education in most majors, and avoid innovation and entrepreneurship education becoming an elite education limited to a few people. [7] At the same time, increasing its weight in student credits can increase students' emphasis on innovation and entrepreneurship courses, stimulate their enthusiasm for innovation and entrepreneurship, and then improve their innovation and entrepreneurship capabilities.

5.2 Innovative teaching mode

In terms of teaching models, colleges and universities should also continue to innovate teaching models, such as group inquiry cooperation, practical case teaching, etc., to explore a teaching model suitable for the actual situation of students, give full play to their subjective awareness and subjective creativity, and thereby enhance students' innovation ability. At the same time, teachers should also strictly require students in the teaching classroom, and cultivate students' rigorous and pragmatic learning and research attitudes.

In terms of teaching content, colleges and universities should improve the practical teaching content to the same status as theoretical teaching content, realize the deep integration of the two in the teaching classroom, and promote the improvement of students' comprehensive ability of innovation and entrepreneurship. At the same time, teachers should also pay attention to the cultivation of students' innovative thinking, respect students' subjective consciousness, improve students' innovative thinking ability, and guide students to continuously exert their own subjective initiative in the process of practice, and spark the spark of innovative thinking. In addition, colleges and universities should also increase research on innovation and entrepreneurship theory teaching, and develop teaching content suitable for the school's teaching practice on the basis of absorbing and drawing on excellent teaching content at home and abroad, so as to improve the quality of innovation and entrepreneurship teaching. [8]

5.3 Strengthening the construction of teachers

First, adopt a dual tutor system inside and outside the school to improve the professionalism of innovation and entrepreneurship education. The teachers in the school undertake the task of transferring the theoretical knowledge of innovation and entrepreneurship, and hire the backbone elites with superb practical skills and teaching abilities in the enterprise to serve as the students' off-campus practical teachers. Secondly, colleges and universities can also recruit a group of high-level and capable teachers to teach from the society, or invite qualified industry elites to come to the school as part-time teachers, so as to effectively improve the overall professional level of the school's teachers. In addition, it is necessary to strengthen the construction of teachers in the school, increase the intensity of their professional training, regularly select teachers to exchange and study at home and abroad, establish an exchange mechanism for tutors inside and outside the school, and improve the practical ability of teachers in the school through mutual communication.

5.4 Expand practical teaching space

First of all, applied undergraduate colleges and universities should make full use of the school's strong scientific and technological resources, use scientific research projects, laboratories and other scientific research resources to create an on-campus practice base to help students improve their practical ability. Secondly, colleges and universities can also strengthen exchanges and cooperation with off-campus companies, establish stable communication channels, and jointly create off-campus practice bases with companies to help students understand social needs more clearly, and constantly adjust their learning content according to the direction of social development. Realize the perfect fit between self-ability and social needs. [9] In addition, colleges and universities can also hold various campus practice activities in various forms, such as Innovation and Entrepreneurship Culture Week, Innovation and Entrepreneurship Simulation Competition, Future Entrepreneur Exchange Conference and other activities to improve students' innovation and entrepreneurship skills in the process of mutual communication. , To promote the improvement of its comprehensive capabilities.

5.5 Create a campus cultural atmosphere

First of all, colleges and universities should strengthen the propaganda of innovation and entrepreneurship, and build a comprehensive and three-dimensional propaganda mechanism. Make full use of traditional media such as school propaganda newspapers, bulletin boards, and broadcasts to promote innovation and entrepreneurship, and at the same time provide students with innovative and entrepreneurial knowledge and technology with the help of Internet social media such as WeChat, Weibo, and campus websites. [10] Second, strengthen the construction of campus culture with innovation and entrepreneurship as the main content. For example, holding innovation and entrepreneurship exchange conferences, sharing successful experiences with each other, etc., using the invisible education of campus culture to improve students' entrepreneurial awareness.

5.3 Improving safeguard measures

First of all, applied undergraduate colleges and universities should increase capital investment, set up a special fund for student innovation and entrepreneurship practice activities, and provide financial support for students to carry out practical activities. At the same time, applied undergraduate colleges and universities should expedite exchanges and cooperation with social enterprises, strive for financial support from off-campus enterprises, and achieve diversified fundraising. Secondly, the government should give full play to its macro-control role, improve relevant laws and regulations, and provide strong institutional guarantees for the innovation and entrepreneurship education of applied undergraduate colleges and enterprises. At the same time, speed up the introduction of relevant preferential policies to stimulate the enthusiasm of enterprises to participate in innovation and entrepreneurship education.

6. CONCLUSION

In summary, current applied undergraduate colleges and universities generally have problems such as insufficient awareness of innovation and entrepreneurship, low teachers' entrepreneurial ability, imperfect curriculum system, and few practice platforms. Application-oriented undergraduate colleges should reform in response to the above problems, establish correct entrepreneurial concepts, create a complete teaching system and teaching model, strengthen the construction of the teaching staff, expand the practical teaching space, create a campus cultural atmosphere, establish perfect safeguards, and promote application-oriented The innovation and entrepreneurship education of undergraduate colleges and universities has developed steadily to cultivate applied talents with strong innovation and entrepreneurship capabilities and a spirit of struggle for the society.

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How To Cultivate Students' Innovative Ability in Computer Teaching in Colleges

Cuifang Wang
Xi'an Kedagaoxin University, Xi'an, Shaanxi 710109, China

Abstract: With the acceleration of the development of science and technology in my country, computer majors in colleges and universities have gradually become popular. In order to make students' abilities more adaptable to the needs of social development, teachers are required to focus on cultivating students' innovative ability in the course of teaching. Therefore, this article will analyze the importance of computer teaching to students, and explain the specific methods of cultivating students' innovative ability in the teaching process, hoping to provide references for those who are concerned about this knowledge.
Keywords: Computer Teaching; Students; Cultivation of Innovation Ability

1. INTRODUCTION

Information technology is gradually being used in various fields. The emergence of intelligence and digitization has greatly facilitated people's daily travel, which also puts forward new requirements for computer teaching. However, at present, some colleges and universities in our country have not made computer courses a compulsory course and cannot cultivate students' innovative ability. Because computer knowledge is relatively complex, students cannot really master it by relying on classroom teaching. Therefore, schools should promptly change the education model to promote students Fully developed.

2. THE IMPORTANCE OF COMPUTER TEACHING

The 21st century has gradually become the information age. The development of talents should conform to the requirements of social development. It is necessary not only to master professional knowledge, but also to have basic computer operation skills. In the life of modern people, computer technology is ubiquitous. From smart phones to smart home appliances, the degree of social informatization has gradually increased, and the importance of computers has gradually become apparent. Nowadays, computers are no longer simply tools for calculation, but have become daily necessities that use data resources to help people find knowledge. Computers cover all aspects of life. At the same time, computer technology has also been applied to various fields, ranging from life shopping to military command. Therefore, schools should attach importance to computer teaching, create a good learning environment for students, and train students to become new types of computer talents.

3. METHODS OF CULTIVATING STUDENTS' INNOVATIVE ABILITY IN COMPUTER TEACHING

3.1 Change teaching methods

The quality of the learning environment will have a greater impact on the learning effect. An excellent learning environment can not only help students quickly master computer knowledge, but also cultivate students' sense of innovation. In the traditional computer teaching process, teachers first explain computer knowledge and then ask students to perform actual operations. This practice is only a unilateral statement by the teacher and does not take into account the ability of students to master. The knowledge explanation process is very cumbersome and will make students feel boring. In the actual operation process, there is a lack of teacher guidance, which leads to errors. Even some students do not master the knowledge at all. The operation is even more difficult, which seriously reduces the interest in learning. In response to this situation, teachers should innovate the teaching model, take students' interest as the starting point, develop a comprehensive teaching plan based on the knowledge taught in the classroom, create a relaxed and pleasant classroom, and stimulate students' interest in learning. In the course of teaching, the teacher can use the control system to directly use the computer to explain the knowledge, the teacher uses the host computer, and the students' computers are within the control range of the host computer. The teacher operates the host computer, and the student's auxiliary computer operates automatically according to the host computer program to make teaching More intuitive [1]. At the same time, teachers can also make full use of multimedia equipment to show students the development history of information technology, as well as the current information technology application fields and other videos to help students broaden their horizons and cultivate students' sense of innovation.

3.2 Clear teaching goals

The so-called teaching goal refers to the specific direction of teaching activities and the final result. When setting teaching goals, some teachers rely too much on textbooks and lack independent thinking, which leads to deviations between goals and behaviors during the course of teaching; even some teachers do not set teaching goals at all, and lead the teaching activities by their subjective thoughts, which is insufficient Considering the wishes of students, lack of scientificity. In the process of setting teaching goals, the most important thing is to focus on teaching materials. Different versions of teaching materials have different focuses. Teachers should prepare lessons according to the focus of teaching materials. Moreover, it is necessary to sort out the knowledge learned, mark the key and difficult points, and formulate a corresponding explanation plan based on the students' mastery ability. The Internet can be used to collect relevant information to assist students to quickly grasp it. At the same time, students should be taken as the main body of teaching, and the traditional teaching concept should be changed. On the one hand, it is necessary to attract students' attention and focus on the classroom. On the other hand, teachers should actively communicate with students, answer questions for students, and encourage students to put forward innovative ideas, so that students can actively participate in classroom interaction and create an active atmosphere. . In the process of students' operation, teachers should increase the intensity of observation, find the problem in time, help them analyze the reason, and explain the operation points for them again.

3.3 Cultivate learning interest

Learning interest is the driving force for learning. Only when students have an interest in computer technology can they truly develop their thinking, which is the fundamental condition for improving students' creativity. Therefore, teachers should focus on cultivating students' interest in learning. First, make teaching content practical. The so-called practicality means that the content learned in the classroom can be used in learning and life. Starting from the students' interest, select relevant knowledge points for them to arouse their interest in learning. At the same time, students should be given sufficient operating space to make them desire to learn more. Second, rationally use the game model to carry out teaching. Students' enthusiasm for computer courses will decrease as their knowledge gradually deepens. At this time, teachers should make full use of games to re-inspire students' enthusiasm. Third, develop a mode of lectures among students. Passive acceptance by students is very different from active explanation. The explanation process is the process of summarizing the content of the class, which enables students to analyze knowledge again and deepen the impression of learning.

3.4 Improve the evaluation system

The teaching evaluation system is not only an evaluation of students, but also an evaluation of teachers. According to the current form, computer technology is updated rapidly, which requires teachers to not only impart knowledge to students, but also learn new knowledge in the actual teaching process, keep up with the pace of development of the times, and improve their own knowledge Han Ling. When teachers' own abilities are improved, their ideological level will also change accordingly, so as to abandon the traditional teaching mode and gradually innovate teaching thinking [2]. During this period, teachers should analyze students' classroom performance and communicate effectively with students, so as to discover their own shortcomings and make timely improvements. The ultimate goal of teaching activities is to help students master knowledge and be able to use knowledge proficiently in life. Therefore, it is very necessary to carry out learning assessment activities. Teachers can transform the traditional written test assessment into an "online + offline" model, which tests students' professional knowledge mastery offline, and whether students' actual operations are standardized online.

3.5 Establish independent learning habits

my country's economy is developing rapidly, people's living standards are gradually improving, and computers have become a common item in the family. After the computer course is over, the teacher can arrange the learning content of the next class in advance, and set the corresponding goals based on the students' mastery, that is, preview. When students complete the goal, they will encounter some difficulties due to their own lack of knowledge. At this time, students can check relevant information on the Internet, and if they cannot solve the problem, they will be marked. After the course starts, the teacher should discuss with the students and ask the students to talk about the difficulties encountered in completing the goal, and give targeted explanations. Pre-learning can exercise students' independent thinking ability and develop independent learning habits. When teachers explain, students can grasp the key points faster, which is conducive to the cultivation of innovative ability.

4. CONCLUSION

All in all, in the process of computer teaching in colleges and universities, it is very necessary to cultivate students' independent innovation ability. The development direction of society is moving towards digitization, and more computer technicians will be needed in the future. Therefore, in the actual teaching process, computer teachers should change the traditional teaching mode, take students as the starting point, formulate scientific teaching plans, take students as the main body, cultivate their independent innovation ability, and make students' development direction more suitable for the future social situation.

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Research On the Connotation of Diagnosis and Reform Of "Biochemistry" Course of Medical Clinical Specialty in Higher Vocational Colleges

Jingrui Wu
Xi'An Medical College, Xi 'An, 710309, Shaanxi, China

Abstract: As a compulsory course for clinical majors, "Biochemistry" has many knowledge points, which makes it difficult for students to learn, and experimental teaching lags behind theoretical teaching. Based on this, this article analyzes the measures of curriculum reform in detail by emphasizing the importance of curriculum reform. It is hoped that through the scientific reform of the curriculum, the learning effect of students can be optimized, and the quality of talent training can be improved.
Keywords: Higher Vocational Colleges; Clinical Specialty; Biochemistry; Curriculum Reform

1. INTRODUCTION

As a compulsory course for most majors of the medical school, "Biochemistry" focuses on the analysis of chemical reactions in organisms and allows students to understand the nature of life. The difficulty of the "Biochemistry" course is that there are many knowledge points, abstract content, and high learning difficulty. Nowadays, the continuous development of science and technology, especially related to molecular biology, provides students with more advanced learning tools. Therefore, through the reform of the curriculum, focus on improving students' practical ability and learning effect.

2. THE NECESSITY OF "BIOCHEMISTRY" CURRICULUM REFORM

As the core course of clinical specialty, "Biochemistry" is a course that combines theory and skills closely, with strong practicality. However, the current curriculum system and the actual requirements of the position have certain differences, the teaching content and practical ability are out of line, and the experimental training is also significantly insufficient, which can not guide students' professional skills [1]. Therefore, in order to meet the actual requirements of clinical positions for students and improve their professional quality, it is necessary to pass curriculum reform, improve teaching effectiveness, and focus on cultivating students' practical ability. The reform of "Biochemistry" takes professional standards and job requirements as the fundamental, employment-oriented, and professional ability as the core, which fully reflects the trend of higher vocational education and meets the requirements of clinical positions. In the teaching process, it emphasizes the integration of teaching and learning, attaches importance to the development of teaching evaluation, and guides teaching work with teaching evaluation to cultivate skilled talents who meet the requirements of the job and have outstanding professional skills.

3. CURRICULUM REFORM MEASURES OF "BIOCHEMISTRY" FOR THE CLINICAL SPECIALTY OF HIGHER VOCATIONAL MEDICINE

3.1 Teaching standards

The medical clinical specialty of higher vocational colleges emphasizes quality education, centering on ability, and cultivating students' medical theory and skills, which can satisfy the clinical medical work of medical units at all levels. In the curriculum reform of "Biochemistry", it is necessary to take clinical medicine job responsibilities and abilities as the core, take the clinician qualification examination syllabus as the basis, revise the curriculum standards, enrich the teaching content, and meet the skill needs of clinicians. The repeated preparation of chemical reagents, experimental methods, etc. are deleted, job skills, cases, test report examples, etc. are added, and the teaching content is supplemented with richer and real cases, so that students can transition from course knowledge to job needs. At the same time, the proportion of practical teaching should be increased, and more attention should be paid to cultivating students' practical ability. Clinical students pay more attention to ability and professionalism, and must master operational skills and improve their proficiency. According to the ratio of theoretical courses: practical courses=1:1.5, increase the experimental hours. And increase comprehensive practical training, cultivate students' teamwork ability, accumulate practical operation experience, and cultivate students' hands-on ability.

3.2 Teaching content

"Biochemistry" is an important course for clinical majors, with many knowledge points and complex content. The knowledge points of each chapter are relatively independent, but there are also close connections. Therefore, it is necessary to sort out the teaching content, appropriately reduce the overlapping content in basic biochemistry, and appropriately expand the content related to medical test indicators and disease analysis. Teachers need to refer to the teaching content of other universities at home and abroad based on the content of the textbooks, consult relevant literature and materials, make appropriate adjustments to the teaching content, improve teaching efficiency, and maximize the quality of teaching in the limited classroom time.

3.3 Teaching methods

In the teaching process, a variety of teaching methods need to be flexibly adopted to achieve the desired teaching effect. Teachers can sort out common learning websites and provide them for students to use. Students can log in to the websites to learn independently according to their needs. Making full use of the online teaching platform to meet the learning needs of different students can establish an open learning atmosphere, improve students' autonomy and broaden their horizons. During the teaching period, teachers can also upload teaching materials to the network platform regularly to improve the efficiency of communication between students and teachers and allow students to download freely to meet the differentiated requirements of students with different learning abilities. If you use WeChat group, QQ group or official account platform to upload materials, teachers do not need to send them one by one or arrange the materials by students themselves. Using multimedia channels to communicate can improve the efficiency of teacher-student communication [2]. On the other hand, information software and VR platforms are actively used to assist teaching. Due to limited school laboratories and experimental materials, it is difficult to satisfy students' independent experimental training. The VR platform can be used to assist experimental teaching. Students conduct experimental exercises on the network platform, which increases the opportunities for students to experiment and complete the experiment in simulation, which is convenient for students to observe the results of the experiment and cultivate their ability to operate the experiment. Finally, we must establish an integrated education system for teaching and learning, contact the internship unit in advance, arrange for students to study in the internship unit, accumulate internship experience in advance, and adapt to the job content. Pay attention to the rotation internship in the internship unit. Students need to accumulate experience in different positions, better grasp the key points and error-prone points of the work, and improve students' practical operation ability.

3.4 Teaching Evaluation

Change the traditional examination papers and experimental assessment model, pay more attention to the assessment of the teaching process, and combine the result assessment, formative assessment and classroom assessment. First of all, the theoretical assessment is divided into three parts: classroom test, mid-term assessment, and final assessment. According to the staged teaching knowledge points, the assessment of students' theoretical knowledge and problem-solving ability is carried out. Classroom tests account for 20% of theoretical grades, covering in-class exams, homework evaluations, group reports, questions, notes, and attendance. It records students' learning in this course and dynamically evaluates students' conditions. The mid-term exam is a test of the staged learning results, accounting for 40% of the theoretical assessment. The final exam assesses students' comprehensive application ability, accounting for 40% of the total score. Through reforming the theoretical assessment form, we can examine students' abilities more objectively and comprehensively, and avoid the problems of students making mistakes in the final exams or holding on to their feet. Secondly, in the experimental evaluation, the traditional experimental evaluation has the problem of emphasizing the experiment and neglecting the evaluation. In order to change this problem, the experimental evaluation items are refined. Divided into comprehensive experiments, skill training and routine experiments. The experimental assessment should run through the whole process, and the usual assessment includes three forms: one-by-one assessment, group assessment, and random inspection. The final assessment and stage assessment are assessed by teachers one by one. Finally, in the third-party evaluation, by issuing questionnaires to the internship units and classmates to investigate the curriculum construction and training plan, we can have a more comprehensive understanding of the teaching quality and development opinions, and continuously improve the curriculum reform.

4 CONCLUSION

In summary, through the curriculum reform of "Biochemistry", the traditional teacher-led teaching model is changed, advanced VR platform is introduced to assist teaching, and the proportion of experimental inquiry teaching is increased. Let students learn knowledge through experimental exploration and improve their operational capabilities. In addition, improve teaching evaluation methods to evaluate students' learning achievements more scientifically and completely, so as to continuously improve the teaching system.

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The Value Cognition of Craftsman Spirit Integrated into Cultural Creative Product Design Practice

Bin Xi
School of Humanities and arts, Jiangsu Maritime Vocational and Technical College, Jiangsu 211106, China

Abstract: The spirit of craftsmanship is the key to ensuring the quality of product design, and it is necessary to apply it well to improve the aesthetic value of the product. Based on this, this article will analyze the strategy of integrating craftsmanship spirit into cultural and creative product design practice from five aspects: dedication, hands-on practice, excellence, pursuit of details, and focus on innovation. Product design.
Keywords: Craftsman Spirit; Cultural Creativity; Product Design

1. INTRODUCTION

Cultural and creative products have achieved mechanized production, and the spirit of craftsmanship is gradually being lost. In order to ensure the quality of products, it is necessary to integrate the spirit of craftsman into product design, improve the rationality of product design, and at the same time make it more creative and make products more capable. Cater to the market well, so that the spirit of craftsman can be effectively carried forward.

2. THE VALUE EMBODIMENT OF CRAFTSMAN SPIRIT INTEGRATED INTO CULTURAL AND CREATIVE PRODUCT DESIGN PRACTICE

The spirit of craftsmanship is the key to ensuring product quality, which can effectively improve the creativity of products and enable them to be put into use better. The value of craftsmanship into product design is embodied as follows: First, it can make product design more focused and persistent, and continuously strengthen product design and quality, which will help improve product value and enable it to better adapt to the market. Second, it can establish a good aesthetic orientation, produce a correct aesthetic for cultural and creative products, make them have good aesthetic characteristics, and give products more cultural connotations. Third, it is helpful to improve the details of product design, check the product from the details, make the product design more outstanding, and make it stand out among many products. Fourth, it can improve the practical ability of product design, enable product design to strive for perfection, continue to innovate products in design, and achieve good product design effects. It can be seen that the spirit of craftsmanship is very important to product design, which can make the manufacturing process more perfect and improve the value pursuit of the product [1].

3. EFFECTIVE STRATEGIES FOR CRAFTSMANSHIP TO INTEGRATE INTO CULTURAL AND CREATIVE PRODUCT DESIGN PRACTICES

3.1 Dedication

In product design, it is necessary to have the spirit of dedication and to be able to complete the product design work diligently to ensure the quality of the product. Dedication is one of the traditional virtues. It is an important quality that craftsmen need to possess. Especially when designing cultural and creative products, it is necessary to pay attention to the application of professionalism, so that a serious work attitude can be formed and the product design can be completed smoothly. In the early artisan spirit, it emphasized a dedicated work attitude, so that errors are not easy to occur in the product design process, thereby improving the level of product design and improving the aesthetic characteristics of the product. At the same time, product design also needs to pay attention to dedication. Designers need to spend a lot of time designing, and even need to sacrifice their own personal time, so as to ensure sufficient design time, help control product design quality, and ensure product design can Get pushed forward. Dedication is an important work attitude, which can reduce the error rate of product design and realize the effective application of craftsmanship.

3.2 Hands-on practice

When designing cultural and creative products, it is necessary to pay attention to hands-on practice, and to test the design effect of the product through practice, and then to improve the design method to ensure the rationality of the design. Product design and actual results often differ greatly. If you do not adopt the method of practical testing, you will not be able to test the design defects, resulting in the failure of the final design, and even affecting the value of the product. For this reason, it is necessary to continuously optimize the product through practical design, so that product design defects can be discovered in time, and then improve the product and improve the design quality of the product. Moreover, in the process of product design, it is necessary to experiment boldly and constantly explore the design process of the product, so that the design of the product can be more perfect. This trial process is the embodiment of hands-on practice, so hands-on practice is more important for cultural and creative product design, and it is the key to realize product design from scratch, and then design standardized products [2].

3.3 Keep improving

In the process of product design, it is necessary to pay attention to the attitude of striving for perfection, and to have higher requirements on the product, so that the design quality can be improved. Keeping improving is a manifestation of the pursuit of the ultimate. When designing, designers need to strictly demand themselves and apply design methods reasonably to make product manufacturing feasible and ensure that products can be successfully produced. On the other hand, it is necessary to continuously improve the quality of products and continuously solve the defects in the products, which will help the improvement of product quality and effectively improve the product design process. Excellence plays an important role in improving product quality. Designers need to pay attention to the summary and accumulation of design experience, and continue to insist on their own work attitude, so that excellent creative elements can be incorporated into it, so that the quality of product design can be steadily improved. Keep improving is an important manifestation of the craftsman's spirit, which can promote the improvement of product quality, enable the smooth realization of product design, and meet the actual design needs of the product.

3.4 Pursue details

In the process of product design, it is necessary to pay attention to the needs of details and strictly process the lines of cultural and creative product design to ensure that the product design has distinctive features. Details often determine the success or failure of product design. Pursuing details is more important to avoid product defects in details and improve the rationality of product design. Product design has more details to be dealt with. Proper handling can improve the grade of the product and make it have better artistic value. In the design process, it is necessary to do a good job in the details, evaluate the quality of the details, and compare them with products of the same type. At the same time, it is necessary to grasp the overall effect of the product to avoid the detailed design from affecting the whole and causing the product to fail. The overall design quality has declined. Once the details are not handled properly, it will be a failure of product design, resulting in the product cannot be used normally. Therefore, it is necessary to pay attention to details, form a guarantee for products from the details, and improve the quality of cultural and creative products.

3.5 Focus on innovation

In the process of product design, continuous innovation is needed to make the product more creative and endow the product with higher artistic value. Through innovation, product design can be qualitatively broken, and product design quality can be fundamentally improved. In terms of innovative application, on the one hand, it is necessary to pay attention to the innovation of design methods and adopt advanced design methods for product design to make product design more perfect. On the other hand, it is necessary to pay attention to the innovation of the product itself, to improve the creativity of the product design, and to incorporate creative elements into the product design, so that the product has good aesthetic characteristics. The birth of new products and design innovation are inseparable, and innovation plays an important role in it. Therefore, it is necessary to pay attention to the application of innovative spirit, continuously provide inspiration for product design, and achieve good product design effects. Cultural and creative products have a high demand for innovation, which is the key to continuously improving creativity. It is necessary to maintain this awareness of innovation to make products have sufficient creativity.

4. CONCLUSION

In summary, the spirit of craftsmanship is indispensable in product design and an important method to improve design quality. In the process of product design, it is necessary to pay attention to details while maintaining the spirit of excellence. This can have a good design practice effect, so that product design can reflect innovation and increase the value of cultural and creative products.

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The Practical Exploration of Integrating Cultural Confidence into the Ideological and Political Education for English Normal Students in Colleges and Universities

Yuxia Yan
Nanchang Normal University, Nanchang, Jiangxi 330032, China

Abstract: Based on their professional characteristics, English normal students in colleges and universities have more knowledge and understanding of Western culture, but ideological and political education for those students is not quite effective. Under the current background of realizing the great rejuvenation of the Chinese nation, English normal college students, as future teachers, have to shoulder their own responsibilities and missions, and enhance their ideological quality by continuously improving their cultural identity. Through the practical activities of "Speaking Modern China in English", this paper integrates cultural confidence into students' ideological and political education, solves the problem of ideological and political education and professional learning, and explores the cultivation path of ideological and political education for English normal college students.

Key Words: Cultural Confidence; English Major; Normal College Students; Ideological and Political Education

1.INTRODUCTION

Cultural confidence means that a nation, a country and a political party fully affirm and actively practice their own cultural values and have firm confidence in their cultural vitality. [1] With the development of society and economy, the demand for foreign language talents in the new era has undergone fundamental changes. It has become an urgent requirement of modernization to improve the quality of talent training and meet the needs of diversified talents [2]. Normal university students are not only "students", but also "teachers" in the future. Foreign language education should contribute to Chinese culture going abroad and enhancing cultural soft power [3]. Therefore, in the practice of ideological and political education for college English normal students, strengthening students' cultural consciousness and cultural confidence and further improving ideological and political construction is not only the requirement of The Times, but also the need of comprehensively improving students' comprehensive quality.

2. CURRENT SITUATION OF IDEOLOGICAL AND POLITICAL EDUCATION OF ENGLISH NORMAL UNIVERSITY STUDENTS

2.1 Single form of education

The Outline of National Medium and Long-term Education Reform and Development Plan (2010-2020) puts forward the requirement that education should give priority to moral education and ability, and develop in an all-round way. In response to the call of the state, various colleges and universities have set up corresponding ideological and political theory courses. Ideological and political theory courses are the main channel of ideological and political education. However, this kind of course is mainly indoctrination-type teaching in form, and the approach is relatively single. There is no ideological and political course targeted at the difference of majors and individual talents. The actual teaching effect is not ideal. [4]

2.2 Discord between educational content and specialty

The content of ideological and political education has not kept pace with The Times and the ideological concepts of college students in the new era. The traditional ideological education content is still used as the main method, resulting in the separation of the content of ideological and political education from professional courses. [5] There is a lack of ideological and political education in terms of professional characteristics and characteristics of normal university students, and ideological education is derailed from professional learning, which makes students fail to identify and internalize ideological and political values.

3. THE IMPORTANCE OF CULTURAL CONFIDENCE FOR ENGLISH NORMAL UNIVERSITY STUDENTS

3.1 Fit the requirements of personnel training

Undergraduate Foreign Language and Literature Teaching Guide for General Colleges and Universities (2020) pointed out that the core socialist values and traditional Chinese cultural values should be integrated into English courses to help English majors in the new era to firmly establish the core socialist values and enhance the topicality, effectiveness and ideology of university foreign language teaching.[6] Only relying on a single ideological and political course teaching can not meet the needs of talent cultivation in the new era. [8] Normal university students put forward higher requirements on the cultivation of professional ethics. Only by establishing their cultural confidence and improving their ideological and political accomplishment, can they better fulfill their professional dedication, joy and love. Therefore, it is the trend of The Times and the need of talent training to cultivate compound talents with national feelings and international vision.

3.2 Help students improve their ideological accomplishment

The general Secretary stressed that "the value orientation of the youth determines the value orientation of the whole society in the future". College students majoring in foreign languages have been exposed to western values and identified with their unique way of thinking in language and culture, but their cultural values have been greatly impacted. [7] At the same time, college students' moral cognition is not fully mature. Therefore, the integration of cultural confidence into the ideological and political education of English normal university students will help students to have a correct understanding of other cultures and realize value guidance and character building. [4]

3.3 Contribute to maintaining ideological security

"Whether we can do our ideological work well bears on the future and destiny of the Party, the long-term stability and stability of the country, and the cohesion and cohesiveness of the nation," General Secretary Xi JP stressed. Culture is the concrete embodiment of ideology. Foreign language majors are at the forefront of culture and ideology. [9] Therefore, strengthening students' ideological and political education and building up cultural confidence are conducive to identifying inferior cultural ideology, treating Western culture rationally and establishing correct cultural cognition.

4. EXPLORATION ON IDEOLOGICAL AND POLITICAL EDUCATION AND CULTIVATION OF ENGLISH NORMALCOLLEGE STUDENTS BASED ON CULTURAL CONFIDENCE

4.1 Activity Background: The subject teaching of English normal university students focuses on the content of Western culture and history, which is greatly influenced by western culture, resulting in the loss of ideals and beliefs and the decline of moral level among students. However, English majors require students to have the ability of cross-cultural communication. As disseminators and inheritors of Chinese culture, English normal university students should be able to tell Chinese stories well, cultivate qualified builders and reliable successors of socialism, and become the voice of The Times.

4.2 Activity Objectives:

4.2.1 In terms of methods, ideological and political education is integrated into the "Second Class" activities to combine teaching with fun. Students interpret the development and progress of The Times through their own lectures and performances, so as to give ideological and political education vitality and realize the resonance between ideological and political activities and value guidance.

4.2.2 In terms of ability, through "Speaking Modern China in English", students will be able to tell a good story about China, enhance their in-depth understanding of the history of China's development, improve their professionalism and apply their listening, speaking, reading, writing and translation skills as well as their teacher training skills, so that their knowledge can be truly internalised and their ideological and political education can be more effective.

4.2.3 In terms of ideology, the "Be a Voice of China" programme cultivates students' sense of home and country, helps them to establish the right values, strengthen their identification with Chinese culture and development, enhance their sense of social responsibility, give full play to the strengths of English teacher trainees and take up the responsibilities and missions of the young generation.

4.3 Activity content: Activities: Through on-site interviews, class impromptu speeches, production of small banners combining Chinese and English, choreographed stage plays, adapted songs, lectures, films, debates and fun activities, students will gain a deep understanding of China's development, tell Chinese stories well and improve their cultural confidence.

Activity steps:

Time Way	Phase one (1)	Phase two (2)	Phase three (3)	summary
Activity theme	Speaking Modern China in English -- Politics	Speaking Modern China in English -- Economics	Speaking Modern China in English -- Culture	Speaking Modern China in English
Key activities	"I watched the 19th Party Congress at school"	Have you benefited? (life)	Did you read any books today?	Promotional products
Activity form	Make promotional videos	Interviews, impromptu speeches, song adaptations, broadcasting	Contributions, interviews, lectures, debates, fun activities	Tours (promotional videos, speeches, stage plays)
Activity site	Office area, dining area recreation area, teaching area	Unlimited	Campus	Unlimited
Active objects	Unlimited	Friends at home and abroad	Teachers and students	Unlimited

Specific steps:

4.3.1 Early stage: In the early stage, activities are mainly held from the life changes that students can personally feel and are in line with the development trend.

Content: "I watched the 19th Party Congress at school" interview,

Song adaptation (" I watched the 19th National Congress at School "Modern China/ Change myself),

English reading (Speak modern China, speak the Belt and Road)

English speech. This section focuses on the three themes of Innovation China, Science and Technology China and Peace China, highlighting the development of contemporary China.

4.3.2 Mid-term: Mid-term activities will gradually deepen into the development of China's culture, economy and life at home and abroad.

Content: Micro film shooting (the shooting of micro film integrates traditional Chinese culture, the situation of normal university students in our school, and the difference between Chinese culture and western culture)

Self-choreographed dance (Dream Seeking, Beautiful China)

4.3.3 Later stage: The later stage focuses mainly on the promotion and conclusion of the interactive series so that students can move from speaking out at a linguistic level to being able to recognise and think about China's development at a thinking level, enabling them to regain a ground-breaking, inductive understanding of China's development over the course of the semester's series.

Content: Micro film promotion (to show the development and growth of China in the form of film, so that students can intuitively feel the progress of China)

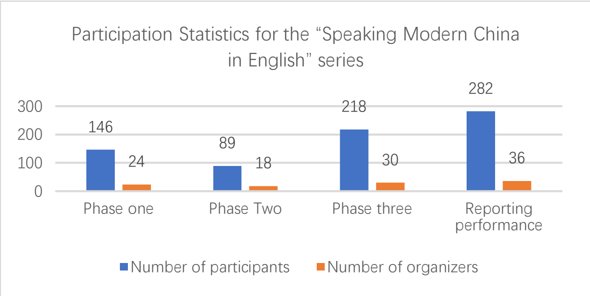
Interview with the theme of "The development of Modern China" (students interview different professionals in different times, listen to their stories about China's development, and get deep recognition of China's development from the stories of interviewees)

Theme (Self-confidence. China - Modern China in English) report performance

4.4 Activity Effect:

4.4.1 Number of participants

Since the launch of the "Speaking Modern China in English" series, it has received an overwhelming response from students. The number of participants in each period accounts for 14.6%, 8.9%, and 21.8% of the total number of students in the college (1,000 people), and the reporting performance is 28.2%



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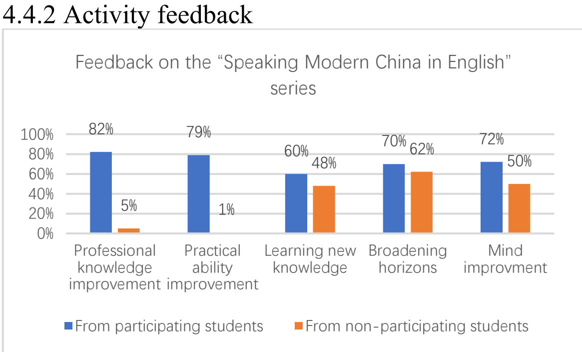
4.4.2 Activity feedback



In order to more intuitively understand students' responses to the series of activities "Speaking Modern China in English", a self-made questionnaire "Evaluation of Series Activities of Speaking Modern China in English" was selected and distributed among 200 students who participated in the activity and 200 students who did not participate in the activity. There were 400 questionnaires in total, 176 questionnaires from students who did not participate in the activity and 182 questionnaires from students who participated in the activity were collected. According to the data collected from the questionnaire, more than 62% of the students who did not participate in the activity but paid attention to the activity stated that they gained a new understanding of Chinese culture and English from the activity report and performance, which broadened their horizons and updated their thinking. More than 72% of the students who participated in the activity said they learned new knowledge, improved their personal thinking, practiced activities exercised their personal abilities, and found their own shortcomings.

5.CONCLUSION

From the feedback of "Speak Modern China in English" series activities, we can see that most students hold a positive attitude towards this activity, which indicates that the practical exploration of ideological and political education for English normal university students based on cultural confidence is effective and feasible, and ideological and political elements can be integrated into each link of the activity. It enhances the students' ability to use professional knowledge and skills of normal university students, solves the problems of English major learning and ideological and political education, and helps to improve the ideological and political quality and comprehensive quality of English normal university students by enhancing their cultural confidence, to cultivate builders and successors of the socialist cause who are morally, intellectually, physically and aesthetically well-developed with ideals, morality, culture and discipline.

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The Moderating Effect of Tourism Motivation in the Process of Rural Tourism Experience

Zilei Yang
Zhengzhou University of Science and Technology, Zhengzhou, Henan 450000, China

Abstract: For the rural tourism destinations as the leisure space of tourists, it is necessary to understand the tourists' tourism motivations, segment the tourists' market, and then develop and provide targeted tourism experience products and services from the subdivided fields for the maximization of the satisfaction of tourists and the sustainable development of the rural tourism industry. Based on the motivation theory and the experience theory, this paper discussed the Moderating effect of rural tourism motivations in the effect of experience factors on satisfaction, and divided rural tourists into four categories according to the type and level of the motivations: purpose-based tourists, rid-of-daily-life tourists, positive tourists, and passive tourists.
Keywords: Rural Tourism; Tourism Motivation; Experience Elements; Moderating Effect

1.INTRODUCTION

With the development of the economy and the improvement of national living standards, tourism has increasingly become an indispensable part of people's life. While the scale of tourists has grown, the demands of tourists have also become increasingly diverse. With the acceleration of the urban life pace and a series of environmental problems, more and more citizens choose to return to nature and relax. Now the popular rural tourism is a typical representative. Because rural areas have the original natural environment and inherent folk culture, tourists from cities can experience interesting rural production and life, get rest, relaxation, entertainment and education, and also buy fresh and healthy local specialties in the countryside. At the same time, as an effective way to increase income outside agriculture, rural tourism has become a countermeasure to solve the problem of income differentiation between urban and rural areas. Therefore, the study of rural tourism is of great significance to the development of rural regional economy. Especially what kind of needs and demands tourists have and what kind of experience they have experienced in the process of rural tourism, these are the important contents of rural tourism marketing research. In order to better carry out tourism services and tourism destination marketing, tourism sales staff should understand the motivations that influence tourists' tourism decisions and consumption behaviors motivation is hidden behind all behaviors, and understanding the process of choosing a tourist destination can better understand motivation. Different tourism types and tourist characteristics will lead to different tourism motivations, and whether different tourism motivations will lead to differences in tourism experience is a more concerning issue in this paper. Therefore, this paper attempts to explore the Moderating effect of tourism motivation in the process of tourism experience through quantitative analysis, so as to provide some reference for the market segmentation of rural tourism.

2.THEORETICAL RESEARCH

2.1 Tourism motivation

Mill and Morrison(1985) pointed out that needs are a tense state of physiological defects, and the expressed psychological state at this time is wants, and then motivation is generated to satisfy wants and it is an internal state indicated when people activate the individual's internal main power or energy that drives action to achieve the goals existing in the external environment. The force that activates this power or energy is caused by a tense state, and this tense state will appear again due to unmet needs.[1]

Crompton(1979) pointed out that individuals will break away from daily life to try new things when there is a state of disequilibrium or state of tension in the human body, and divided people's motivation into four stages. The first stage is the unbalanced state of the individual, and the second stage is to detach from daily life, and the third stage is to choose the method of detachment from daily life (playing at home, tourism, etc.), and the fourth stage is to choose tourism as the method of detachment from daily life, including social, psychological and cultural motivations [2]. Reid (1989) believed that the process of tourism behavior is divided into four stages: needs, motivation, tourism decision-making and tourism action, and the results of tourism action will also be fed back. Needs are affected by individual personality, self-image, experience and attitude to generate motivation, and then motivation leads to tourism decision-making, and finally, tourism decision-making makes tourism action happen. In addition, the results of tourism action will also be fed back to the motivation and affect and change the motivation [3]. On the classification of motivation types, Iso-Ahola (1982) believed that the power driving people to have a tour can be divided into two aspects: one is the motivation to break away from daily life, and the other is the motivation to seek internal psychological compensation. People desire to get away from their personal environment and social environment to obtain personal compensations including rest, mood transformation and self-improvement, and to expand their social relations. Therefore, the motivation of tourists can be divided into four types: the first is the motivation to get away from the personal environment to get personal compensations, the second is the motivation to get away from the personal environment to get social compensations, the third is the motivation to get away from the social environment to get personal compensations, and the fourth is the motivation to get away from the social environment to get social compensations[4].

Another way to understand the relationship between the tourism motivation and the tourism action is to understand it from the perspective of promoting factors and inducing factors. The promoting factors are the motivation itself to stimulate tourism motivation and trigger tourism action from the tourists' internal psychology, including separation from daily life, curiosity, health promotion and so on. The inducing factors are everything attractive that exists in the tourism destinations, such as natural scenery, attractive facilities, festivals and so on. Promoting factors include demographic and socioeconomic variables while inducing factors include the attractions variables of the destinations(Ha Jong-wan, 2005) [5]. Kim So-yoon(2008) studied the effect of rural tourism motives on the pursuit of benefits and preference for experience activities, and derives two rural tourism motivations: the rid-of-daily-life motivations as a promoting factor and the purpose-based motivation as an inducing factor[6].

2.2 Tourism experience

Tourism experience is the psychological reaction of tourists when they come into contact with various tangible and intangible things or phenomena during the tourism process, including the cognitive judgment and emotional feelings of the tourists' perception. Cheng, Xin(2017) believed that tourism experience is the sum of a series of psychological reactions produced during the interaction and communication between tourists and people or things in the tourism destination, including the spiritual experience that tourists feel happy due to satisfaction and the sense of enrichment due to the harvest of new knowledge[7]. Experiential tourism means that the perceptual and rational cognition of tourists are directly stimulated through the five senses in the process of the direct contact with tourist attractions, and then carry out the overall tourism evaluation. It is a more advanced form of the tourism, and emphasizes the participation, authenticity, innovation and difference of the tourism experience(Daifei, 2014)[8].Pine & Gilmore(1998) based on the binary classification method, used immersion and participation as the standard, and divided the tourism experience elements into four types: entertainment experience, rid-of-daily-life experience, aesthetic experience and educational experience, and pointed out that there is a field covering four experience elements at the same time, which is in the sweet spot where the four elements intersect and can provide richer tourism experience to tourists to improve the satisfaction of tourists[9].

Schmitt(1999) pointed out that benchmark marketing only regards consumers as rational conscious decision-makers, only emphasizes rational aspects while ignores other aspects, and uses functional characteristics and benefits as the starting point,so it causes a reduction in the scope of goods and competition. As a solution to maximize the efficiency of consumer experience, experiential marketing makes consumers perceive, think, act and form a relationship by using the five senses. As an important core of marketing, the ultimate goal is to let consumers experience the overall experience. The overall experience includes the individual experience mixture and the common experience mixture, and they can be divided into strategic experience modules including sense, feel, think, act and relation[10]. Based on Schmitt's strategic experience modules, 김상현(2009) studied the rural tourism experience in South Korea, derived five experience factors of rural tourism: sense experience, feel experience, think experience, act experience and relationship experience, and empirically analyzed the effect of rural tourism experience factors on tourist satisfaction.Among them, the sense experience emphasizes the perception of stimulating five senses, and the feel experience emphasizes making tourists get psychological pleasure by calling on the internal feelings and emotions of tourists, and the think experience is the experience of gaining new cognition through intellectual thinking activities or enabling tourists to actively participate in problem-solving, and the act experience is the unique feelings gained by participating in activities, and the relationship experience mainly refers to the unique social recognition experience that tourists get in contact with others or communities[11].

3. RESEARCH DESIGN

3.1 Questionnaire design

Based on Schmitt's strategic experience modules, referencing on the mature scales in existing studies, the experience indicator system of this questionnaire was designed. When foreign scales were referenced, the expression of the question items of the scales was adjusted appropriately in combination with the expression habits of Chinese. Then, through the pre-investigation of 40 tourists of rural tourism, the scientificity and rationality of the questionnaire were checked, and the questionnaire was appropriately adjusted and improved. In the end, the questionnaire was divided into five parts: tourism form characteristics, tourism motivation, experience elements, tourist satisfaction and demographic characteristics.

3.2 Questionnaire collection and processing

Taking the tourists traveling in Chongdugou Village which is an important rural tourist destination in Henan Province as the survey object, the random sampling survey method was adopted, and specially trained investigators distributed and collected questionnaires to tourists on site. In the end, we collected 280 questionnaires in total, excluded 37 invalid questionnaires with incomplete or dishonest answers, and obtained 243 valid questionnaires, the effective rate was 86.8%. After the questionnaire survey, statistical software SPSS 20.0 was used to perform descriptive analysis, reliability and validity analysis, factor analysis, K-means cluster analysis on the questionnaire data, and AMOS 20.0 was used to test the moderating effect.

4.ANALYSIS AND INTERPRETATION

4.1 Sample characteristics

From the perspective of demographic characteristics, the proportions of male(48.1%) and female(51.9%) are basically balanced in the sample, the proportion of 20-29 years old(36.2%) was the highest, the proportion of college or undergraduate education (53.1%) was the highest, the proportion of ‘company staff’(29.0%) was the highest. From the perspective of tourism form characteristics, the main annual frequency of the rural tourism was ‘3-5 times’(41.2%), the main information sources of the rural tourism were from the ‘Internet’(44.0%) and ‘recommendations from relatives and friends’(39.5%), the main form of companions were ‘friends’(39.9%) and ‘family relatives’(32.9%), staying time of the highest proportion was ‘two days and one night’(53.5%).

4.2 Reliability and Validity Analysis

In order to ensure the credibility and validity of the research results, the reliability and validity of each indicator should be tested before the factor analysis to ensure that the summarized factors are credible and effective. Through reliability analysis, the Cronbach's α coefficient is calculated to consider whether there is high internal consistency among the revised indicators of the scale. The results showed that the tourism motivation α=0.812, and experience factor α=0.883, are both greater than 0.8, indicating that the indicators corresponding to the questionnaire variables have high internal consistency, and the revised questionnaire has high reliability. In this study, Kaiser-Meyer-Olkin (KMO) test and Bartlett sphere test were used for validity analysis. The results showed that the KMO values of tourism motivation and experience elements in the sample were 0.813 and 0.888 respectively, both greater than 0.8, and the chi-square values of Bartlett's sphere test were 924.119 and 1260.052 respectively, and the P values were both 0.000, indicating that the indicators corresponding to the questionnaire variables have high validity and are suitable for factor analysis.

4.3 Factor Analysis

Through the principal component analysis, a large amount of information can be simplified, and a small number of common factors that can reflect each indicator can be extracted. Although the number of these common factors is much less than the previous observation indicators, they as the key factors can cover the most of all the information. Rotating according to the maximum variance method, this paper extracted the principal components which eigenvalues are bigger than 1 as common factors, and removed the measurement indicators with low commonality. As a result, the tourism motivation gets 2 factors explaining 60.7% of the total variance of the motivation, and the experience gets 4 factors explaining 61.2% of the total variance of the experience. By observing and analyzing the content of the factors' loading matrix, and verifying whether the extracted factors are consistent with the attributes of the factors defined in the previous research, the paper redefined the extracted factors. In the end, the extracted tourism motivation factors were named as rid-of-daily-life motivation, and purpose-based motivation, and the extracted experience factors were named as think and act experience, feel experience, relationship experience, and sense experience.

4.4 Analysis on the Moderating Effect of Tourism Motivation

Through SPSS 20.0 and AMOS 20.0, the moderating effect of rural tourism motivation in the effect of experience factors on satisfaction was analyzed. Firstly, according to the type and level of motivations, the data file was divided into strong groups and weak groups of each motivation by using SPSS 20.0. Secondly, the non-constrained model and constrained model for analyzing the moderating effect are set in Amos 20.0. Finally, the strong group and weak group of each motivation type were introduced into the research models and run the analysis. By the statistical significance of the difference of chi square value of the constrained model, it is judged whether there is a moderating effect. Generally, when $p>0.05$, there is no moderating effect; when $p<0.05$, there is a moderating effect.

4.4.1 Moderating Effect of Purpose-based Motivation

As the analysis result of the moderating effect of the purpose-based motivation, $p=0.013<0.05$, it indicates that the purpose-based motivation has a moderating effect in the effect of rural tourism experience elements on satisfaction, that is, there is a significant difference between the strong group and the weak group of the purpose-based motivation . Specifically, the think and act experience and relationship experience of the strong group of the purpose-based motivation have a higher effect on satisfaction, while the feel experience and sense experience of the weak group of the purpose-based motivation have a higher effect on satisfaction(see Table 3-1). It shows that the strong group of the purpose-based motivation have stronger curiosity, are more interested in various experience activities in tourism destinations, can more actively participate in the tourism experience activities, and can more actively interact with people around them and establish a good relationship, while the weak group of the purpose-based motivation are more passive in participating in experience activities, they are more concerned about their own sense and inner feelings, and are more sensitive to static experience activities.

Table 3-1 Analysis of the Moderating Effect of Purpose-based Motivation

Items			Purpose-based Motivation(Strong)			Purpose-based Motivation(Weak)		
			Estimate	P	Label	Estimate	P	Label
Satisfaction	<---	Think and Act Experience	.389	***	b1_1	.070	.044	b1_2
Satisfaction	<---	Feel Experience	.247	***	b2_1	.253	.005	b2_2
Satisfaction	<---	Relationship Experience	.159	.034	b3_1	.130	.045	b3_2
Satisfaction	<---	Sense Experience	.110	.043	b4_1	.227	.011	b4_2
Significant difference of chi square value of the constrained model			P=0.013					

Note) ***: Significant at the $p<0.001$ level.

4.4.2 Moderating Effect of Rid-of-daily-life Motivation

As the analysis result of the moderating effect of the rid-of-daily-life motivation, p=0.042<0.05, it indicates that the rid-of-daily-life motivation has a moderating effect in the effect of rural tourism experience elements on satisfaction, that is, there is a significant difference between the strong group and weak group of the rid-of-daily-life motivation. Specifically, the think and act experience, and feel experience of the strong group of the rid-of-daily-life motivation have a higher effect on satisfaction, while the relationship experience and sense experience of the weak group of the rid-of-daily-life motivation have a higher effect on satisfaction(see Table 3-2). It shows that the strong group of the rid-of-daily-life motivation more want to get out of boring daily life, to get in touch with new things, to try new experience activities, and they are more concerned about relaxing their bodies and minds and feeling different moods, while the weak group of the rid-of-daily-life motivation are more concerned about interacting with others and maintaining good interpersonal relationships, and they are also more sensitive to the stimulation of the five senses and prefer the static tourism experience.

Table 3-2 Analysis of the Moderating Effect of Rid-of-daily-life Motivation

Items			Rid-of-daily-life Motivation(Strong)			Rid-of-daily-life Motivation(Weak)		
			Estimate	P	Label	Estimate	P	Label
Satisfaction	<---	Think and act experience	.395	***	b1_1	.107	.049	b1_2
Satisfaction	<---	Feel experience	.325	***	b2_1	.165	.045	b2_2
Satisfaction	<---	Relationship experience	.080	.042	b3_1	.243	.009	b3_2
Satisfaction	<---	Sense experience	.110	.025	b4_1	.213	.022	b4_2
Significant difference of chi square value of the constrained model			P=0.042					

Note) ***: Significant at the p<0.001 level.

5.CONCLUSIONS

For rural tourism destinations as a leisure space for tourists, it is important to understand the tourism motivation of tourists and grasp the moderating effect of the tourism motivation in the effect of experience factors on satisfaction for the maximization of the tourist satisfaction and the sustainable development of the rural tourism industry. In particular, it is necessary to understand and grasp what the most important compensations are for the different tourists in the tourism process. In the effect of experience elements on satisfaction, the tourism motivation has an important moderating effect. According to the type and level of the motivations, rural tourists can be divided into 4 categories: purpose-based tourists with strong purpose-based motivations and weak rid-of-daily-life motivations, rid-of-daily-life tourists with weak purpose-based motivations and strong rid-of-daily-life motivations, active tourists with strong purpose-based motivations and rid-of-daily-life motivations, and passive tourists with weak purpose-based motivations and rid-of-daily-life motivations. Therefore, in the process of the rural tourism development, it is necessary to segment the target market according to the different types of tourists to develop and provide targeted tourism experience products or services from the segmented areas. For purpose-based tourists, the development of relationship experience products should be strengthened to create harmonious interpersonal relationships; for rid-of-daily-life tourists, the provision of feel experience products or services should be emphasized to create comfortable and pleasant tourist emotions; for active tourists, the development of cognitive and active tourism experience projects should be strengthened to create high-quality experience projects with strong participation; for passive tourists, the development of sensory experience tourism products should be valued to enhance the sensory stimulation of tourists.

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Research On Project Cost Management Based on Bim Building Informa Ionization

Qingming Yuan
Department Of Building Engineering, Zibo Vocational Institute, Zibo, Shandong 255314, China

Abstract: In the new era, the development of the construction industry is relatively rapid, which provides a certain support for the improvement of the construction cost management ability. Construction enterprises need to deal with the white-hot competition in the process of development, which increases the development burden of construction enterprises to a certain extent. The emergence and application of BIM technology can effectively improve the level of construction project cost management, make it more intelligent and shorten the project cost investment, which plays a very key role in the development of construction enterprises. Therefore, construction enterprises must pay full attention to BIM construction informatization, apply it to project cost management, and enhance the overall strength of construction enterprises. This article briefly introduces the status quo of project cost management and analyzes the application of BIM construction information technology in project cost management, hoping to provide reference for the smooth development of construction project cost management.

Key Words: Bim Building Information; Project Cost Management

1.INTRODUCTION

With the popularization of computer technology, more emerging technologies have been applied to the construction industry. As an indispensable part of construction engineering management, project cost can determine the quality of construction engineering management to a certain extent. But under the influence of some factors, the effect of construction cost management is not very ideal. In this process, the application of BIM building informatization can effectively improve work efficiency and reduce capital consumption. From a certain point of view, it can promote the development of building informatization. Therefore, attention must be paid to the application of BIM construction information in project cost management.

2. CURRENT SITUATION OF PROJECT COST MANAGEMENT

According to the analysis of the actual situation, the following two aspects need to be taken into account in the development of construction project cost management in China: First, the valuation tool used in the development of cost management has changed greatly. Before the application of Internet technology, it is generally done manually by staff to calculate the engineering quantity and make budget statements based on design drawings and budget quota, which not only takes a long time, but also has low work efficiency [1]. After the emergence and development of computer technology, there are many software and tools related to pricing, which provide favorable conditions for the informationization and refinement development of engineering cost. With the help of these software and tools, can shorten the time needed to work, can reduce the complexity of high engineering cost management problems. Second, the project cost management has changed greatly. In the traditional mode, it is necessary to carry out the project cost management with the help of static and dynamic engineering cost management means, and build the same project budget quota in different regions to control the market price reasonably, so that different management departments can timely understand the actual situation of the project cost [2]. With the reform and innovation of the market economy system, the traditional project cost management mode has been unable to provide support for the development of the project cost management in the new era, so it is necessary to strengthen the research and promote its further innovation.

3. APPLICATION OF BIM CONSTRUCTION INFORMATIZATION IN PROJECT COST MANAGEMENT

3.1 Building a Database

Project cost management is closely related to all aspects of construction. In order to control the project construction cost within a certain range, it is necessary to collect relevant data of project cost and build a perfect database. Using BIM technology to build a database can timely transmit information, improve the utilization rate of information resources, and ensure the stable operation of the information system. In addition, the application of BIM technology can innovate the traditional project cost management mode, carry out cost control work in the construction site, and calculate the application of resources in the real construction process from the construction reality, compare it with the formulated plan, and optimize the construction material supply scheme. In addition, can also carry out dynamic monitoring, clear unit engineering quantity, for the smooth development of construction cost control work to provide support.

3.2 Provide support for the development of investment decisions

The cost control management carried out in the process of investment decision-making can determine the overall cost of construction projects to a certain extent. Therefore, we must pay attention to the investment decision cost control work, improve the economic income of construction enterprises. This requires relevant staff to carry out evaluation according to investment evaluation indicators and analyze whether the construction is feasible

[3]. However, from the actual analysis, it is found that the current budget compilation index is one-sided, which cannot provide support for the development of relevant work. However, the application of BIM technology can effectively improve the status quo, and compare multiple investment budget planning to find the best option.

3.3 Engineering design

Engineering design includes many aspects, such as construction drawing design, construction technology selection and the use of construction data, etc., which plays an important role in engineering cost management. In order to promote the orderly development of engineering cost management, the technical staff can use BIM database to carry out scientific processing of different types of construction data when carrying out the design work, so as to provide guarantee for the efficient development of engineering cost management from the clear scope of engineering cost limitation. BIM technology can show the different problems that may occur in the real construction process, so technicians can identify the problems in the design process through BIM technology, optimize the design, improve the rationality of the project, provide guarantee for the smooth development of the project construction, and reduce the number of engineering changes. And, in this process, BIM technology can be updated in time to make the data accurate.

3.4 Bidding period

In the tender bidding, the construction enterprise can communicate and design unit, collect related information, and through the data to construct into BIM technology related model, it can clear of quantities in a relatively short period of time, and starting from the engineering reality characteristics calculation of quantities, this can not only avoid omissions, also can reduce the definite quantities take time, Provide support for the follow-up work [4].

3.5 Control each link of construction

The project cost management carried out in each link of construction is the key content of the whole project cost management process. Under normal circumstances, the construction period for the cost of the reaction is the project settlement, that is to say, through the use of the contract clear settlement means and the actual amount of the project, to provide the owner with the relevant bills, and accept the supervision staff audit, after the review of the payment. In this process, the use of BIM technology can carry out technical management of the project, clarify the engineering change situation, control the material cost, and improve the management level of the project cost. In addition, the application of BIM technology can build relevant models, analyze the contents that need to be constructed, calculate the amount of materials needed in a short time, and timely supplement materials.

4. CONCLUSION

According to the above analysis, it can be found that the application effect of BIM construction informatization in project cost management is outstanding. With the help of engineering cost management, it can not only improve the accuracy of engineering cost, but also reduce the cost input of enterprises and create more economic benefits for enterprises. However, as BIM building informatization is still in the period of continuous development, it is inevitable that there will be some shortcomings in the application process. Relevant personnel need to intensify research and improve the level of BIM building informatization, so as to maximize its role in construction project cost management.

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Analysis Of University Library's Reading Promotion Based on University Students' Reading Behavior

Nisheng Zhang
Chongqing Youth Vocational&Technical College, Chongqing 400712, China

Abstract: A lot of reading can help students accumulate a lot of knowledge, can enhance the knowledge reserves of college students, expand the vision of college students, and then realize the comprehensive accomplishment of college students to improve greatly, has a great help to the development of students in the future. But because of the influence of the external environment, the college students in their daily lives are not reading books as part of their life, often prefer to read some network novels in the network, causing students did not acquire knowledge in reading, also did not understand the ideas of the article, in the process of reading unable to enrich the students' emotion, Students have not obtained the quality that college students should have in reading work. In view of the current reading behavior of college students, colleges and universities should strengthen the promotion of library reading so as to improve the reading quantity of students.

Key Words: College Students; Reading Behavior; University Library; Marketing Analysis

1.INTRODUCTION

Foreword: College students are the base of talent cultivation and reserve in Our country. Therefore, colleges and universities should clarify their own importance in the education work, actively improve their own work, and ensure to create a better learning environment for students. After entering the university stage, students have more and more time to finish what they want to do, but they rarely spend it on reading, which greatly restricts the improvement of students' comprehensive literacy. In view of this situation, libraries should actively promote the work. However, it is worth noting that, before carrying out relevant work, promotion personnel should effectively analyze the reading behavior of college students, and take promotion measures based on this to ensure that the promotion measures are the same as students' interests, so as to improve the efficiency and quality of promotion work.

2. MAIN CHARACTERISTICS OF COLLEGE STUDENTS' READING BEHAVIOR

2.1 I like online reading and do not read traditional books

Colleges and universities should analyze the main characteristics of college students' reading behavior when carrying out library promotion work. Only on the basis of clear characteristics of their behavior, can the library formulate correct promotion strategy and realize promotion efficiency and quality improvement. At present, the rapid development of information technology on college students' social environment have influence, students increased contact with the outside world information, and compared with traditional paper books, network books has its own advantages, the students can use mobile devices, anytime, anywhere to read, not used to carry heavy books [1]. In addition, in information reading, students can quickly find the books they want through the retrieval function, which is very convenient. Therefore, students prefer online reading.

2.2 Diversified forms, not in-depth reading

In information technology and mobile equipment manufacturing technology under the condition of continuous development, information technology, fully integrated into student's study and daily life, to make students come into contact with more content, know more teachers, in the network gradually open mu class, live, and other forms of teaching, the students in the teaching form not only can reading knowledge, can watch the analysis of the teacher, This reflects the diversity of students' reading forms. In order to increase the reading volume of articles, weibo, wechat, short video and other platforms will use big data technology to push short articles for students to read in a short time such as eating, waiting and so on, so as to increase the click volume of articles. Although this way of reading makes use of students' fragmentary time, in fragmented reading, students only receive information without in-depth thinking about the inherent meaning of the information, and the fast food reading way of information reduces students' thinking ability [2].

2.3 Outstanding utility, poor effect

At present, utilitarian reading is reflected in the reading work in colleges and universities. As a result, college students have not absorbed knowledge beneficial to themselves in the process of reading, which has caused certain restrictions on the development of students. Utilitarian means that students do not consider their own long-term development in the process of reading, but take actions to achieve their own goals in the near future. As a result, students do not have a clear goal in knowledge accumulation, resulting in a mixed reading knowledge [3]. In addition, generally speaking, students are reading for leisure time, reading some narrative novels for entertainment, so reading cannot improve students' personal quality.

2.4 External influence, weakened reading

Along with our country the development of society, students and college students in the past environment appeared larger changes, students in the school is not only to learn professional knowledge, their lives are not only study a kind of entertainment, the outside world too much entertainment will affect students points away too much time, makes the students cannot concentrate on in the process of life and learning to read, As a result, students' reading time is shortened and their reading frequency is reduced, which greatly restricts the improvement of students' cultural literacy and the development of students [4].

3. PROBLEMS EXISTING IN READING PROMOTION SERVICE OF UNIVERSITY LIBRARY

3.1 Backward promotion form and insufficient brand awareness

If the university library wants to carry out the reading promotion work with high quality, it is necessary to clarify the factors that restrict more students' access to the articles in the reading promotion work at the present stage, identify the problems, and then efficiently complete the relevant promotion tasks. The main problems in library promotion are backward promotion form and lack of brand awareness. In the process of promotion, the main force of library promotion is still paper-based books under the environment full of information technology, which conflicts with the development of information in China to a certain extent, resulting in difficult promotion work. In addition, libraries often use reading days, reading lectures and other ways to promote, which makes it difficult to attract students' interest in the promotion process [5]. In addition, in the process of promotion, relevant promotion personnel did not establish brand awareness, did not form their own characteristics, resulting in low recognition of promotion work.

3.2 Lack of organizational structure and professional talents

In the library management work didn't realize the importance of promotion, no established professional marketing team, thus resulting in the lack of organization, the library promotion professional talent shortage phenomenon appears, adverse effects on the promotion, the student can't work under this promotion to strengthen reading interest. Library relative to the other organizations, it does not have the stronger profitability, not laying perfect personnel management, not form a good rewards and punishment mechanism, cause staff did not achieve the desired goal, there will be a resignation, the flow of the library staff is bigger, unable to form a professional marketing team [6]. In addition, some promotion personnel do not have professional knowledge related to promotion planning, which reduces the professionalism of promotion work.

3.3 Weak cooperation ability and serious complacency

Part of the library in the promotion work can't realize the importance of promotion and other activities, often rely on the museum staff, library promotion activity compared to other activities interest is not enough, resulting in a variety of activities at the same time, students choose the activities of the probability is low, can't attract students to read the book. In promotion activities, leading personnel do not have the consciousness of cooperation with others, not only will not cooperate with other groups, its will not cooperate with enterprises in society, so no professionals provide promotion scheme for the library, caused some negative effect on the development of the library, limits the development of colleges and universities, reduce the students' reading quantity.

4. UNIVERSITY LIBRARY READING PROMOTION SERVICE MEASURES TO GIVE READING BEHAVIOR TO COLLEGE STUDENTS

4.1 Innovate promotion forms and build activity brands

In colleges and universities students to read the reading behavior characteristics and the problems existing in the promotion, the library leaders should actively correction own promotion strategy, ensure that stand out in many promotional activities, for the love of college students, thus increasing the student's reading article, increase students' mastery of knowledge, improve their ideological level. Is a necessary step in promoting innovation promotion form, relevant staff build retaining traditional promotion form, on the basis of the information technology popularization into the work, according to their own situation to build reading software, to ensure that students are without access to the library can also book borrowing, ensure management of the library can meet the requirement of era development. In addition, in the promotion work, staff should pay attention to the establishment of weibo and short video accounts, and release videos for promotion, gradually forming a certain brand effect, so as to improve the promotion efficiency [7].

4.2 Improve the organizational structure and form professional teams

It is urgent to perfect the organizational structure and form a professional library management and promotion team. Library leaders should pay more attention to this work and provide a solid foundation for the promotion work in terms of personnel. The library should define the promotion tasks of different levels in each department relationship, and deploy the interpersonal promotion work to ensure that the related promotion work can have a certain degree of formality. In addition, students should also choose influential personnel to promote the work, and then drive the surrounding students to read books, so as to form a better reading atmosphere. In addition, the library should investigate the staff at the bottom, make clear their mastery of professional promotion knowledge, select staff with professional knowledge and experience to carry out relevant work, and constantly improve the reading quantity of students.

4.3 Encourage social participation and increase cooperation

Colleges and universities should actively combine related work with other activities on campus so as to ensure the efficient and orderly development of promotion work. And in the promotion of colleges and universities should not be complacent, want to with other colleges and universities, the public library of high quality communication between, joint promotion, with other libraries should actively for resource sharing of work, ensure that the students can get themselves need to book in the library system, and enhance students' recognition of the library, to ensure to achieve promotion purposes. In the promotion work, the library can actively combine with social resources, invite professional promotion enterprises to shoot videos, guide students to have a comprehensive understanding of the library, show the benefits of reading books for students, and then enhance students' interest in the library, and constantly increase students' reading volume.

5.CONCLUSION

Conclusion: After entering colleges and universities, students are in a relatively relaxed environment, most of the students with weak self-control ability cannot actively read, which has caused some restrictions on the development of students. Most students choose a variety of reading ways to read articles on the Internet, but these reading work is often relatively simple, students can not carry out a comprehensive analysis of the central idea and words, and students gradually lose interest in reading under the influence of a variety of new things, resulting in a decrease in students' reading. However, in the library reading promotion, the form of promotion is relatively backward, there is no professional talent to carry out the promotion work, the cooperation between teams is not close, and the promotion work is not ideal. In view of these problems, library leaders should actively improve the relevant work, improve the level of promotion work, and then strengthen the influence on students, help students form a good reading habit.

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How To Infiltrate The Research Of Moral Education In University Chemistry Teaching Under The New Situation

Wanfeng Zhang, Shaobei Zhou, Jidong Zhang, Ting Huang, Heping Wang*
Department Of Chemistry and Engineering, Ankang University, Ankang 725000, Shaangxi, China
**Corresponding Author.*

Abstract: With the continuous advancement of national education reform, the educational goal of "moral education" has become the focus of university teaching, but in the university chemistry education, often easy to ignore the development of moral education, so in order to adapt to the development of the new situation, colleges and universities should step up the moral education of university chemistry. This paper mainly discusses the main content of chemical moral education in universities, and puts forward several measures to promote the development of chemical moral education in universities, so as to promote the overall moral education quality of college students, and create high-quality talents with social responsibility for the society.
Key Words: College Chemistry; Moral Education; The New Situation

1.INTRODUCTION

With the promulgations of the 13th Five-Year Plan for the Development of National Education, "Sticking to morality and cultivating talents" has become an important development direction of education reform, especially for the moral education of college students, which must be implemented in the teaching process of various subjects in colleges and universities. Therefore, it is imperative to strengthen the moral education in colleges and universities. As a subject combining theory and practice, college chemistry often neglects the moral education of students while paying too much attention to professional knowledge in practical teaching. Therefore, in this new situation, how to carry out good moral education in university chemistry has become an urgent problem to be solved.

2. CONTENT OF MORAL EDUCATION

Under the new situation, the content of moral education of college students has also changed to a certain extent, which can be divided into patriotism sentiment education, cooperative spirit education, social responsibility education, innovation and entrepreneurship education. First of all, patriotism education, as the core of moral education in Our country, is a quality that every contemporary college student must possess. Only by holding a heart of love for the motherland can we become the pillars of the society. Secondly, collaborative spirit education. Chemistry, as a difficult course, often needs to experience teamwork to solve problems. Therefore, we should consciously cultivate students' collaborative spirit when developing university chemistry courses. And assume social responsibility from the students for social mission, throughout the history of science of human society, most scientists for scientific research purpose is to change society, create a better social conditions for people, so the contemporary chemical professional college students to improve their professional level, to enhance the social sense of responsibility, To encourage their own development and progress. Others, such as innovation and entrepreneurship education, test students' individual thinking ability. Teachers should pay attention to enlightening students' thinking in the teaching process and help students to look at problems from multiple perspectives. Only in this way can students' career development be promoted. The moral education content of university chemistry is not only simple moral education, but also the education of students' thinking and emotional cognition, which has a profound influence on students' life.

3. MEASURES TO INFILTRATE UNIVERSITY CHEMISTRY INTO MORAL EDUCATION UNDER THE NEW SITUATION

3.1 Reform of teaching content

In the process of the traditional college chemistry education, the students all day surrounded by chemical theory and chemical experiments, chemical knowledge learned in class in the end after the test in the experiment, this way of teaching it, while ignoring the students' moral education, so in the face of the new situation at present, the teacher must reform the existing teaching content, Integrate students' moral education into them. For example, when telling students about chemical theories, they should not only tell students the established theories and formulas, but also learn to explore the stories behind them. Take the construction of China's chemical industry as an example. In the past, under the conditions of arduous struggle, China's chemists devoted themselves to the construction of the country's democracy and prosperity, regardless of gains and losses, and realized the ideal of loyalty to the country with their own knowledge. Tang Aoqing, a famous physical chemist in China, established the Chemistry Department of Northeast Renmin University, also known as Jilin University today, for the development of the country [1]. The reason why they are willing to selfless self-dedication is because they are driven by patriotism, which inspires them to continue to forge ahead, and also has the influence of social responsibility. Teachers incorporate the deeds of patriotic scientists in the teaching content, so that students can be deeply inspired while remembering them, so as to stimulate students' patriotic feelings and social responsibility, promote the change of students' learning motivation, and help set up lofty ideals.

3.2 Change teaching methods

Current college chemistry is an important problem existing in the moral education is the education of moral education means a single, often take the form of lectures, the students gradually feel boring for a single teaching mode, teaching effect nature is not good, so if you want to improve college chemistry education effect of moral education, to enrich the existing form of teaching. For example, in addition to oral narration, multimedia technology can also be made full use of pictures, audio, food and other forms of expression, so as to enhance students' interest in learning. In addition, classroom teaching can be added to set up some moral education experience classes. In class, instead of focusing on the study of chemical knowledge, we will watch some interview clips, documentaries or movie clips of chemists to analyze the behavioral purposes of chemists and guide students to have a deeper understanding of chemists step by step. Let the students realize that only indulging in the study of professional knowledge is unable to achieve their own, only have a good ideological and moral concept, can provide guidance for the future career, so as to promote their own improvement. Secondly, in the development of chemical practice activities, in addition to chemical experiments, we should also carry out activities such as visiting former residences of celebrities, so that students can feel the influence of moral education in the actual situation [2].

3.3 Promote self-study among students

There is a general deviation in the concept of moral education among contemporary college students, who think that moral education is only the education of moral character, but they have had enough moral concept after a long period of learning, so that they do not pay attention to the study of moral education at all. Therefore, in the process of university chemistry education, students should be guided to self-study of moral education. For example in the teachers can improper use of some chemical public security event question, lets the student in the class get answers, by means of self query data in the data collection process, help students form a complete view of events, so as to analyze the dialectical, in order to promote the ability of the students thought. Secondly, it can also make students fully realize that when the knowledge is applied in inappropriate places, it may lead to serious consequences, so as to awaken students' sense of social responsibility. In the next class, through the communication and discussion between classes, group cooperation and other forms, is conducive to the students to develop the spirit of teamwork, but also conducive to teachers to grasp the students' learning situation, for the concept of deviation of the students to guide, in order to achieve the effect of moral education.

4.CONCLUSION

As the center of college education under the new situation, moral education of college students must pay attention to the implementation of moral education. Moral education is not only moral education, nor is it a teaching task of a certain discipline, but a teaching activity to be carried out by all disciplines. In the process of chemistry education in universities, teachers should change the original teaching ideas, integrate moral education into teaching content, enrich teaching forms, innovate teaching means, and enhance students' understanding of moral education, so as to promote the great progress of moral education in universities.

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Research on how to infiltrate moral education in College Chemistry Teaching under the new situation

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Consolidate And Expand the Research on The Path of Effective Connection Between the Achievements of Poverty Alleviation and Rural Revitalization-Take the Qinba Mountains in China As An Example

Yang Wang[1], Lanxue Xu[2]
[1]School of Economics and Management, Northwest University, Xi'an, Shaanxi 710127, China;
[2]School of Public Administration, Northwest University, Xi'an, Shaanxi 710127, China

Abstract: At present, China is at the intersection of "two centenary goals", and it is advancing the consolidation and expansion of poverty alleviation. Effective connection with rural revitalization is the focus of the "three rural" work in the new era. This article takes the Qinba mountainous area, one of China's 14 concentrated contiguous areas with extreme poverty, as an example. First, analyze the internal logic of consolidating and expanding the results of poverty alleviation and the effective connection of rural revitalization from the three dimensions of theory, history and policy. Secondly, it analyzes the practical difficulties faced by the effective connection of the two in the Qinba mountainous area from the direction of industry, talent, culture, ecology, and organization "five major revitalization", and proposes the realization path of the effective connection between the two.

KeyWords: Poverty Alleviation; Rural Revitalization; Internal Logic; Realization Path

1. INTRODUCTION

At present, China is in a period of convergence of "two centenary goals", speeding up the realization of consolidation Expanding the effective connection between the results of poverty alleviation and rural revitalization is of great significance to seizing the opportunities of rural revitalization and development and realizing common prosperity. The Qinba mountainous area is one of the fourteen concentrated contiguous extremely poor areas identified in the "China Rural Poverty Alleviation and Development Program (2011-2020)". According to statistics, the Qinba mountainous area in 2010 had a poverty incidence of approximately 9.9% under the current standards. This is 7.1 percentage points higher than the national poverty incidence rate of 2.8%[1]. Since the implementation of targeted poverty alleviation at the 18th National Congress of the Communist Party of China, the Qinba mountainous area has achieved a comprehensive victory in its poverty alleviation strategy through arduous struggles. However, after the building of a well-off society in an all-round way, there are two challenges to consolidate and expand the achievements of poverty alleviation and implement the strategy of rural revitalization. How to consolidate and expand the achievements of poverty alleviation in the Qinba mountainous area and effectively connect with rural revitalization will become the focus of its work on "agriculture, rural areas and farmers" in the new era.

2. CONSOLIDATE AND EXPAND THE INTERNAL LOGIC OF THE EFFECTIVE CONNECTION BETWEEN THE RESULTS OF POVERTY ALLEVIATION AND RURAL REVITALIZATION

The strategy of poverty alleviation and rural revitalization are two core strategies to solve the inadequate development of rural areas and the uneven development of urban and rural areas in my country. The two are closely related in content. At the same time, due to the differences in their strategic positioning and times, the two are also different. In the process of promoting the consolidation and expansion of poverty alleviation and the effective connection of rural revitalization, the two must not be separated, and attention must be paid to the internal logical relationship between the two.

2.1. Consolidate and expand the theoretical logic of effective connection between the results of poverty alleviation and rural revitalization

Poverty reduction work and theories all over the world show that neither the developed capitalist countries nor the former socialist countries can provide operational tools for common prosperity strategies, nor can they lead the people to the great goal of common prosperity. China's consolidation and expansion of the results of poverty alleviation and the effective connection of rural revitalization are guided by the Marxist anti-poverty theory, which is the inheritance of China's anti-poverty ideas, and is unified in the socialist common prosperity strategy with Chinese characteristics. On this basis, it not only demonstrated to the world China's operational common wealth strategy tool, but also gradually formed the great theory of new era of socialism with Chinese characteristics.

2.2. Consolidate and expand the historical logic of the effective connection between the results of poverty alleviation and rural revitalization

At present, China is at the intersection of "two centenary goals". The overlapping period of poverty alleviation and rural revitalization strategy is the end of building a moderately prosperous society in an all-round way and the starting point for achieving "the second centenary goal." Since the reform and opening up, 770 million rural poor people in my country have been lifted out of poverty under the current standards, and absolute poverty and overall regional poverty have been resolved historically. However, getting rid of poverty and achieving a well-off society is only a short-term task. The ultimate goal of rural development in the new era is the modernization of agriculture and rural areas and common prosperity. Therefore, in the converging period of the "two centenary goals", consolidating and expanding the achievements of poverty alleviation and promoting the effective connection of poverty alleviation and rural revitalization are the historical inevitability of promoting the transfer of my country's new and old tasks.

2.3. Consolidate and expand the policy logic of effectively linking the results of poverty alleviation with rural revitalization

First, consolidate and expand the policy targets that effectively link the results of poverty alleviation and rural revitalization. From solving the problem of absolute poverty to solving the problem of relative poverty, from achieving the "first century goal", that is, building a well-off society in all respects, to achieving the "second century." The goal" is to build a prosperous, strong, democratic, civilized, harmonious and beautiful modern socialist country. Secondly, the policy scope of consolidating and expanding the results of poverty alleviation and effectively linking rural revitalization has been expanded, from preferential poverty alleviation for poverty alleviation to inclusive poverty alleviation. Finally, consolidate and expand the transformation of policies and measures that effectively link the results of poverty alleviation with rural revitalization, and shift from the poverty alleviation policy focusing on passive assistance to the rural revitalization policy focusing on active development.

3. THE PRACTICAL DIFFICULTIES FACED BY THE QINBA MOUNTAINOUS AREA IN CONSOLIDATING AND EXPANDING THE RESULTS OF POVERTY ALLEVIATION AND EFFECTIVE CONNECTION WITH RURAL REVITALIZATION

3.1 The development of leading industries is not closely connected

First of all, the homogeneous development of industries has prevented the Qinba Mountains from obtaining sustainable economic growth. The similar geographic environment, the same natural climate, and the same ethnic culture in all counties (districts) in the Qinba Mountains have made the leading industries developed in the poverty alleviation period the same. The qualitative phenomenon is obvious, most of which are primary resource-based industries such as rural tourism and forest planting. The most direct consequence of industrial homogenization is product surplus and "zero-sum competition", which will seriously affect the local consolidation and expansion of the results of poverty alleviation and the implementation of the rural revitalization strategy. Secondly, the villagers are not very enthusiastic about the local rural industry. Since most of the rural industries have problems such as slow returns and high risks, local villagers choose to go out to work as their best choice.

3.2 Good ecology but not livable

The Qinba mountainous area is a key ecological function area, which undertakes the responsibilities of water source protection, animal habitat and biodiversity. This also makes the local infrastructure and public services inevitably lag behind other areas. First, the homestead planning is unreasonable and there are many illegal buildings; the second is the complete and incomplete toilet revolution, and the penetration rate of harmless toilets is less than 20%. %; Third, there are problems such as imperfect rural sewage and garbage treatment systems, and prominent dirty and messy phenomena. It is difficult for the Qinba mountainous area to take advantage of its good ecology.

3.3The hollowing out of the countryside is serious, and there is a lack of effective drivers for the effective connection of the two

On the one hand, due to the geographical environment of "nine mountains, half water and half fields" in the Qinba mountainous area, many local counties (districts) are still in the stage of "one piece of water and soil cannot support one person". On the other hand, there are 6 relatively high-level cities (Wuhan, Chongqing, Xi'an, Chengdu, Zhengzhou, and Lanzhou) in the Qinba Mountains, and the gap in income, infrastructure, education, and medical care between urban and rural areas is increasing. , Thereby intensifying the "siphon effect" of these central cities. At the same time, the promotion of the Internet has caused changes in people's thinking, and the villagers are no longer content with the status quo and no longer satisfied with the local development of the Qinba Mountains. The above has led to the inevitability of the outflow of human capital in the Qinba Mountains, and it is difficult to provide a strong construction team for the revitalization of the local villages.

3.4.It is not easy to connect the revitalization of rural culture

First, the rural cultural infrastructure in the Qinba Mountains is relatively weak. First, some villages have invested less in cultural infrastructure, and have not built cultural facilities such as farmhouse bookstores, rural cultural activity rooms, and cultural squares. Second, some cultural venues are just to cope with higher-level inspections. The facilities of cultural venues are old and closed for a long time, lacking practical functions, and cannot really promote the revitalization of rural culture. Secondly, in the process of rapid urbanization in the Qinba mountainous area, it squeezed the living space of traditional rural culture, thus making the outstanding traditional culture of the countryside represented by the culture of ritual and filial piety, the culture of farming and heirlooms, and the rural culture of the countryside lack of successors. .

3.5 Insufficient governance at the grassroots level and cumbersome traditional etiquette

There are many ethnic minorities in the Qinba Mountains. Some ethnic minority groups have complicated traditional etiquette and a certain degree of exclusivity. "Patriarch discourse", "religious discourse" and "elderly discourse" are still dominant in some minority areas, making the grassroots It is difficult for organizations to promote rural revitalization strategies. At the same time, some rural citizens do not know the law, do not believe in the law, and do not use it, which makes it difficult to build a grassroots rule of law system that serves the rural revitalization strategy.

4. THE QINBA MOUNTAINOUS AREA CONSOLIDATES AND EXPANDS THE PATH TO ACHIEVE AN EFFECTIVE CONNECTION BETWEEN THE RESULTS OF POVERTY ALLEVIATION AND RURAL REVITALIZATION

This article puts forward the path to realize the effective connection between the industry, talents, culture, ecology and organization in the direction of "five major revitalization".

4.1. Industrial connection path

"Industry prosperity" is the focus of the implementation of the rural revitalization strategy. Due to the high industrial risks, small scale, low efficiency, and widespread homogeneity of industries in poverty-stricken areas, their market competitiveness and development capabilities will be seriously lacking in the post-poverty alleviation era. Therefore, in the critical period of consolidating and expanding the results of poverty alleviation and effectively connecting with rural revitalization, the first is to promote the development and growth of industries in underdeveloped areas. industry. For example, Zhangzhuang Village in Lushan County, Qinba Mountain has more than 20 years of history of planting grapes. Zhangzhuang Village has used this resource advantage to take grapes as its leading industry, and strives to build a high-quality brand of "Zhangzhuang Grapes". The current annual output value is nearly 100 million yuan. The grape industry has become a characteristic industry that promotes local economic development. The second is to promote the establishment of a model of "leading enterprises + cooperatives + bases + farmers" in underdeveloped areas, to overcome the shortcomings of small farmers in underdeveloped areas, such as small economic scale, high vulnerability, inability to use large-scale machinery, and insufficient product influence. For example, Ziyang County in the Qinba Mountains is one of the two major natural selenium-rich areas in the country. The local uses the characteristic resource of selenium enrichment and develops selenium-enriched konjac and selenium-enriched konjac and selenium-enriched konjac by creating a model of "leading enterprise + cooperative + base + farmers" More than 50 products including tea, with annual comprehensive income exceeding 3 billion yuan. The third is to promote the integrated development of rural primary, secondary and tertiary industries. By building a pastoral complex integrating modern agriculture, leisure tourism and pastoral communities, we will promote the transformation of rural development from a single industry to industrial integration, and promote the overall revitalization of the countryside.

4.2. Talent connection path

At present, the hollowing out and aging of villages in underdeveloped areas are prominent. In the critical period of consolidating and expanding the results of poverty alleviation and effectively connecting with rural revitalization, "people" are the most important influencing factor. Therefore, the first is to actively promote the development of local characteristic industries, broaden local and nearby employment channels, guide villagers in underdeveloped areas to find local and nearby employment, and strive to achieve “one side of water and soil nurtures one side”. The second is to establish a series of mechanisms to encourage migrants to return to their hometowns to start businesses. By creating a good entrepreneurial atmosphere and building an effective communication platform, we encourage migrants to return to their hometowns to develop characteristic industries. The third is to thoroughly implement the talent support plan for underdeveloped regions and expand the scale of external talent selection. The fourth is to narrow the gap between urban and rural residents' income, urban and rural infrastructure construction, urban and rural public services, urban and rural policies, and effectively ensure equal development opportunities for farmers and urban residents in underdeveloped areas, so that the recruited high-quality talents can truly be retained.

4.3. Cultural convergence path

"Country style civilization" is the guarantee for rural revitalization. In the "post-poverty era", one is to increase the excavation and protection of rural culture. First, encourage the excavation of cultural heritage such as rural ancestral temples, temples, and theaters, and promote the development of rural characteristic tourist attractions and scenic spots. Secondly, establish a sense of rural culture and increase the protection of excellent traditional cultures such as funeral customs and rural culture. That is, "you can see the mountains, see the water, remember homesickness". The second is to actively guide rural villagers in underdeveloped areas to abandon old rules, old customs, traditional bad habits, etc., abide by village rules and folk agreements, laws and regulations, and promote the fine traditional virtues of hard work and wealth. The third is to continue to establish "farmers night school", "lecture institutes" and other institutions, and carry out educational activities of "supporting wisdom and aspirations" in underdeveloped areas.

4.4Ecological connection path

"Ecological and livable" is the key to rural revitalization. First, the characteristics of "backing on mountains to eat mountains and relying on water for drafting" in the Qinba mountainous area determine that only by strengthening the ecological industry and realizing ecological revitalization can the overall revitalization of the Qinba mountainous villages be promoted. develop. The second is to increase support for the policies of returning farmland to forest and returning farmland to grassland, continue to deepen the reform of the collective forest tenure system in underdeveloped areas, and encourage rural villagers to buy forest land management rights into afforestation cooperatives. The third is to carry out the improvement of rural human settlements in accordance with local conditions, promote the "toilet revolution" and the improvement of garbage and sewage.

4.5 Organizational connection path

"Effective governance" is the basis for rural revitalization. The first is to uphold the leadership of the party, comprehensively strengthen the leadership core position of rural grassroots party organizations in underdeveloped areas, and further enhance the organizational strength of party organizations in former poor villages. The second is to continue to implement that the top party and government leaders are the first responsible persons, and the "fifth-level secretary" grasps the working mechanism of rural revitalization. The third is to establish and improve the grassroots governance system of "Internet + Smart Community", promote the use of big data and cloud computing in household services, medical education, and social security, and promote the modernization of grassroots governance. The fourth is to establish and improve a grassroots governance system featuring self-government, rule of law, and rule of ethics, to stimulate the sense of responsibility and participation vitality of rural villagers, and provide a solid organizational guarantee for the consolidation and expansion of poverty alleviation achievements and the effective connection of rural revitalization.

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An Analysis of Santosh's Rootlessness in In a Free State

Qingshuo Li
Xi'an International Studies University, School of English Studies, Xi'an, Shaanxi, 710128, China

Abstract: Among those English contemporary post-colonial writers, V. S. Naipaul is one of the most prominent one. His masterpiece, *In A Free State*, which was awarded Booker Prize in 1971, has attracted wide discussion because of his moving depiction about those colonized people. This novel is a collection of novelette, including five relevant stories. The thesis will focus on the story *One Out of Many* in this novel, and the protagonist of this story, Santosh, is the victim who tortured by different cultures and races. The thesis argues that Santosh's rootlessness lies in his blindly pursuit of inner idealized freedom and the confrontation between oriental and occidental cultures. The former is intrinsic cause while the latter is extrinsic, and they both ultimately exacerbate Santosh's rootless dilemma. Based on Jean Paul Sartre's view of absolute freedom and Homi Bhabha's Post-colonial Theory, the thesis demonstrates the following two points: on the one hand, for the intrinsic cause, Santosh's three main choices about pursuing his idealized freedom would bring him absurdities and responsibilities again and again, and all these absurdities and responsibilities make his inner freedom impossible, finally render his rootlessness; on the other hand, for the extrinsic, the confrontations between the oriental and occidental cultures put Santosh in a position of in-betweeness.
Keywords: V. S. Naipaul; In A Free State; Santosh; Rootlessness

1.INTRODUCTION

Santosh, as an immigrant from Bombay, had finally struggled to build his own cultural hybrid identity. Through the analysis of Santosh's rootlessness, readers could further understand Santosh's rootlessness, and simultaneously, the thesis hopes to confirm that this rootlessness is actually an ineluctable developing process of the culture between the colonized and the colonizer, and the Orient and the Occident.

2.INTERNAL REASON: SANTOSH'S THREE CHOICES ABOUT PURSUING HIS IDEALIZED FREEDOM

As for the internal reason, Santosh made three choices to blindly pursue his idealized freedom. His three main choices encompass coming to America with his "sahib"; working for Priya and marrying with "hubshi" woman. All the three choices on the one hand, could lead him to find the freedom which could periodically satisfy Santosh's demanding, but simultaneously, every choice could also create the new absurdity and responsibility sooner or later. As Sartre's work, *Being and Nothingness* claims that "the indispensable and fundamental condition of all action is the freedom of the acting being" (Sartre 436). In Sartre's point of view, the core of the human consciousness is infused with negativity which is not restricted by the objective conditions. Moreover, "choice is shown in the correlation of consciousness, negation, and freedom" (Gordon 76). That is to say, when human beings are restrained from the present and trying to find the freedom, he or she could make his own free choices and decide who he will be.

2.1 Coming to America with "sahib"

In *One Out of Many*, Santosh was firstly frightened to lose his own job after knowing that his employer, "sahib", was posted to Washington.

It was no longer the sort of life for which I was fitted. I had grown soft in Bombay and I was no longer young. I had acquired possessions, I was used to the privacy of my cupboard. I had become a city man, used to certain comforts. (Naipaul 8)

It is unprecedented for him that he could not imagine what his future would be. All those fitted things he possessed before suddenly disappeared. Moreover, he was so old that he could not imagine what he could do to continuously exist in Bombay just like his present situation. Therefore, there is no doubt that it is a existing dilemma for him. In addition, he was also reluctant to return to his village and hill because he did not want to experience the hardship he had ever experienced before. Hence, considering his existing being, he made his first choice to move to Washington with his employer. After that, to his surprise, his employer told him that he could have a chance to Washington but warned him that "Washington is not Bombay" (9), and his Bombay friend also told him that there would be no one becoming your true friends. However, Santosh at that time was unconscious of these warnings but for his fitted life and existing being. Warnings, in his words, is jealousy for him. Hence, his first choice without fully consideration caused him the absurdity and responsibility he will meet in later American society. He discovered that he could not support his former basic Bombay lifestyle in Washington. For example, when Santosh got his first salary in Washington, he bought a movie ticket, a coffee and a cake. Although the prizes of these things seem reasonable like Bombay prizes, he still spent nine days' pay. Thus, for Santosh, his concerned existential freedom had not ever changed no matter he was in Bombay or Washington.

2.2 Working with Priya

As for Santosh's second choice, fleeing from his former employer and working for Priya, could be regarded as his awakening of himself. In Bombay, "[Santosh] was content to be a small part of his [sahib's] presence, [because] he was a dirt [without his sahib] and [his sahib] was the man who adventured in the world for [him]" (Naipaul 22). According to the description above, Santosh was grateful for his employer. However, in Washington, he gradually found that his sahib was also a existing being who tortured the discrimination and oppression like him, and he was not the part of his employer anymore even if he was unwilling to accept. In the meantime, with the influence of the hubshi woman, Santosh was gradually infatuated with his appearance and aware of his own "prisoner" existence, so he fled and accidentally met Priya. Santosh made his second free choice so he said that "I felt I was earning my freedom...... I felt I was much more in charge of myself than I had ever been" (Naipaul 30-31). What he did not expect was that he had no green card and became illegal in America. He was also terrified of his former employer finding him one day for restitution. All of secrets in his inner mind make him live in conflicts and sadness. These are the absurd consequences and responsibilities caused by his second free choice, and this time, the absurdities and responsibilities are much more aggravated than the first.

2.3 Marrying with the "hubshi" Woman

From those mentioned above, Santosh couldn't suffer those burdens any more, he disclosed all his feelings to Priya, and Priya told to him that "Santosh, you have no problems. Marry the hubshi. That will automatically make you a citizen. Then you will be a free man" (Naipaul 39). Therefore, his third choice, marrying with the hubshi, is not Santosh's truly mind. Santosh had got to do in this way if he desired to reach his idealized freedom.

He was right. I was a free man; I could do anything I wanted... It didn't matter what I did, because I was alone. And I didn't know what I wanted to do. It was like the time when I felt my senses revive and I wanted to go out and enjoy and I found there was nothing to enjoy. (Naipaul 39)

According to this sentence mentioned above, it can see that the true loneliness is the responsibilities of Santosh. Although he got his free identity eventually, he realized that this freedom was not the idealized freedom he always longed for. Just as the claim in *Being and Nothingness*, Sartre indicates the "freedom" as "undermined choice". He elucidates that "freedom is the freedom of choosing but not the freedom of not choosing" (Sartre 578-79). As for Santosh, he always uncontrollably chooses for himself, so he is finally trapped in this idealized freedom because this freedom is impossible to achieve, and his responsibilities is his final condemn to be free, that is , his rootless dilemma.

3.EXTERNAL REASON: THE CONFRONTATIONS BETWEEN THE ORIENTAL AND OCCIDENTAL CULTURES

Furthermore, the confrontation between the Oriental and Occidental cultures, is actually the confrontation between the two space, which has its own fixed cultural representations and modes. As an immigrant identity from Bombay, Santosh, in essence represents the oriental culture identity, or precisely speaking, the cultural identity from the former colonized country, India. It is easy for him to perceive his original culture, so he could live a comfortable life in Bombay. However, the life in Washington which represents the second cultural space, would be strange for him and he was coerced to adapt during his immigrant life. The difference of his identity renders him to forcefully construct a hybrid identity and culture space in this heterogeneous environment, but he failed. Therefore, his immigrant identity represents hybridity and culture in-betweeness, which does not belong to either the Orient or the Occident. This existing state, in Homi Bhabha's *Location of Culture* is defined as "Third Space". He states the "Third Space" as follows:

It is that Third Space, though unrepresentable in itself, which constitutes the discursive conditions of enunciation that ensure that the meaning and symbols of culture have no primordial unity or fixity; that even the same signs can be appropriated, translated, rehistoricized and read anew. (Bhabha 37)

According to Bhabha's claim, Third Space has no fixed state but hybridity and can be diversely engendered whenever different cultures contacts. Hence, as for Santosh, his rootlessness could be summarized as his cultural displacement, and this kind of unexpected displacement for him encompasses two points: inharmony with the occidental culture and his hardship in constructing his hybrid identity.

3.1 Inharmony with the Occidental Culture

Santosh was an immigrant who came from Bombay, India, and he was used to this familiar lifestyle which was imbued with Indian culture. Therefore, when he was noticed by his "sahib" that he could have access to Washington, he was in fully curiosity because he did not understand what the real world and culture were in there. He came to Washington with his traditional Indian culture so he felt much more confused, unaccustomed to everything in Washington. For instance,

I could see no one among the Indians or the foreigners who looked like a domestic. Worse, they were all dressed as though they were going to a wedding... I was in my ordinary Bombay clothes, the loose long-tailed shirt, the wide-waisted pants held up with a piece of string. Perfectly respectable domestic's wear, neither dirty nor clean, and in Bombay no one would have looked. But now on the plane I felt heads turning whenever I stood up. (Naipaul 10)

From this segment, Santosh did not understand why these people wore like participating a wedding. In Santosh's mind, he was not conscious of those people regarded him as an alienated person, or an uncouth man from an indigent and uncivilized place. What's more, those airplane staffs treated Santosh in an unamiable way, such as they denying his bundles as a luggage, having aversion to his "comfortable" gesture, which slipped off the shoes and drew the feet up, etc. Therefore, it was a nightmare for Santosh so he supposed that this journey would quickly come to an end but he was still scared of this unknown city. Nevertheless, his nightmare did not come to an end, and he was much more uncomfortable in Washington. When Santosh walked outside the street, he was chased away by a staff in a cafe because of entering without his shoes. Additionally, those things such as the closed rooms, electric lights, elevators, buildings, streets and so forth, made him in a daze. The reason is that all these things mentioned above were extremely different in Bombay. It elucidates that although Santosh lives in America, his mind is still in Bombay, and he lives in the place with culture in-betweeness. His identity in those domestic people's mind, is an alienated and uncivilized stranger. As Homi Bhabha points out that the minorities lives in the place with different cultures, he or she would first realize the confrontations rendered by cultural hybridity, and this hybridity "is being acknowledged as a historical necessity"(28), so he or she would experience the displacement and make every endeavor to construct their own space, which is called "Third Space". As for Santosh, after experiencing all of these discrepancies, there is a hard process for him constructing his own hybrid identity.

3.2 Santosh's Hardship in Constructing Hybridity Identity

Santosh had experienced a painful process but he still failed to establish his hybrid identity in the end. The reason is that the Indian identity and culture are deeply rooted in his mind, and he is unwilling to blend into the American society. For example, his attitude towards the hubshi people could better prove his unwillingness to blend into the American society. For one thing, Santosh deemed that these hubshi people were wild-looking, and he said that "it seemed that if you didn't trouble them they didn't attack you" (Naipaul 15). From Santosh's attitude, it can infer that he was terrified of those people, regarding them as a kind of danger. What's more, when Santosh watched a myriad of those hubshi people on TV, he still felt that Americans to some extent was "as people not quite real, as people temporarily absent from television" (Naipaul 18). He did not avoid to seeing them while walking on the street, as time went by, gradually seeing his apartment as a shelter and isolating himself from the real outside world. Naturally, this attitude cuts off the cultural negotiation. For another, his marriage with that hubshi woman who was an addict for him and hard to forget, was a painful decision for him to live in the American world. As for Santosh's Indian identity, it is impious and dishonored to get in touch with the hubshi people, and he still obeyed this rule until he had an affair with that hubshi woman. He felt guilty to himself, washing his body again and again to obliterate his sin. He thought he could not be forgiven and cleansed any more. According to Santosh's behaviors, he did not confess all of these changes until he had trouble in existing in American world because of the green card and his illegal identity. Even taking risks of getting married, Santosh still lives in that woman in a dark house with absurd and exclusion. Therefore, his hybridity identity still had not well constructed in the end, and the life was not commensurable to his idealized imagination. While as Homi Bhabha states as follows:

To revise the global space from the postcolonial perspective is to move the location of cultural difference away from the space of demographic plurality to the borderline negotiations of cultural translations. (Bhabha 223)

That is to say, the hybridity needs cultural negotiations which is the margin of different cultures and civilizations, and "Third Space" also needs integration which is constructed on the "borderline". Cultural negotiations could be held with the confrontations between different Oriental and Occidental cultures. However, as for Santosh's behavior mentioned above, he did not try to make contact with the American cultures, so he would feel painful, tormenting and still exclusive in his immigrant life, and all the feelings are summed up to his cultural displacement, and this displacement eventually renders his rootlessness.

In conclusion, Santosh, as an Indian immigrant, has a heartrending rootless dilemma. His rootlessness could be concluded as two main facets. For one thing, as for the internal reason, it is Santosh's blindly pursuit of his idealized freedom that to some extent renders his rootlessness. Every time his free choice could make new absurdities and responsibilities, and he is eventually trapped in those responsibilities step by step, so his idealized freedom is impossible to achieve in American society. For another, with regard to the external reason, it is necessary to take his identity and culture which he belongs to into account. Above all, Indian culture and identity are deeply rooted in Santosh's mind. He could instinctively repel the unknown American society, so it is natural he feels confused and constrained anytime and anywhere. Moreover, with the influence of his reluctance of blending into the American society, he has much difficulties in constructing his own hybrid identity. The less he wants to make the cultural negotiation with the new society, the more he wants to go back to Bombay, his origin place, but this is impossible for him. Under this circumstances, could his rootlessness engenders and exacerbates.

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Research On the Curriculum of Pre-School Education in Secondary Vocational Schools in Jiangxi Province

Huan Li [1], Yan Li [2]
[1]Nanchang Normal University Education, Nanchang, Jiangxi 330032, China;
[2]Yugan County Vocational Education and Training Center, Shangrao, Jiangxi 335199, China

Abstract: As an important part of China's normal education system, secondary vocational schools have trained a large number of preschool education talents in the past few decades. However, with the expansion of the development scale of preschool education at the higher vocational and undergraduate levels, the talent training and future development of preschool education in secondary vocational schools are facing challenges. The researchers believe that the problems existing in the talent training of secondary vocational preschool education major in Jiangxi province include inaccurate training objectives, unscientific curriculum structure and imperfect curriculum content. On the problems, the researchers also put forward relevant suggestions, including revising the training objectives, optimizing the curriculum structure and integrating the course content.
Keywords: Secondary Vocational School; Preschool Education; Curriculum

1. INTRODUCTION

On June 1st, 2021, China fully liberalized and encouraged the birth of three children. It is estimated that by 2021, China will continue to increase about 15 million preschool children, and the gap of kindergarten teachers and caregiver teachers is expected to exceed 3 million. It is difficult to meet the social needs of the development of preschool education in China only by relying on a small number of undergraduate, junior college and higher vocational preschool education graduates. According to China's current school system, secondary vocational colleges are three-year vocational education schools after graduating from junior high school and entering the senior high school, with the main training goal of cultivating high-quality workers and skilled talents. Understanding the training of preschool education professionals in secondary vocational colleges will help to continuously improve the quality of preschool teacher training. [1] Therefore, this study investigates the talent training program of preschool education in three secondary vocational colleges in Jiangxi Province.

2. CURRENT SITUATION OF CURRICULUM SETTING OF SECONDARY VOCATIONAL PRESCHOOL EDUCATION IN JIANGXI PROVINCE

The researchers made a horizontal comparison from three aspects: training objectives, curriculum structure and curriculum content.

2.1 Comparison Of Training Objectives

Table 1 Comparison of training objectives

Name	Training objectives	Target position
A vocational school	To cultivate preschool teachers and preschool education managers who have all-round development in morality, intelligence and sports; to meet the requirements of urban and rural kindergartens and the needs of the development and reform of modern preschool education, and have innovative spirit and practical ability.	It is oriented to work in organizational management, teaching, nursing and other positions, and all kinds of preschool education institutions at all levels.
B vocational school	To cultivate new preschool educators who can meet the needs of the development of modern early childhood care, have modern educational ideas and concepts, have good teacher ethics, master the professional theoretical knowledge and professional skills of early childhood care, are competent for kindergarten care and engage in care and education in relevant institutions.	nursery governess nursery teacher preschool teacher
C vocational school	to cultivate workers and middle and primary practical talents who meet the requirements of China's socialist modernization and the development of kindergarten education, have all-round development in morality, intelligence, physique and beauty, have comprehensive professional quality and ability, and are competent for the front-line work of early childhood education.	Education personnel in a specific technical field

The training objectives of preschool education in the three secondary vocational schools are roughly the same, but there are still differences in the focus on the target posts. A vocational school focuses on the training of preschool teachers; B vocational school focuses on the training of caregivers and nursery teachers, and C and B vocational schools have roughly the same objectives, focusing on the training of professional and technical personnel such as caregivers and nursery teachers.

2.2 Comparison Of Course Structure And Content

2.2.1 Course Structure And Content Of School a

The curriculum structure of a vocational school is mainly divided into three parts: public basic courses, professional basic courses and practical training courses. Public basic courses account for about 39% of the total class hours; professional basic courses account for 36% of the total class hours, of which professional theory courses account for 18% of the professional basic courses, and skill courses account for 82% of the professional basic courses.

The training practice accounts for about 23% of the total class hours, and there are no elective courses.

A vocational school has the largest proportion of public basic courses, including moral education, Chinese, mathematics, English, computer foundation, sports and health, entrepreneurship education and mental health education, paying attention to the cultivation of students' comprehensive quality and ability. Among them, the proportion of language, mathematics and English is far greater than that of other subjects. Professional basic courses account for a large proportion, including health and health care, early childhood education psychology, basic music theory, kindergarten practice guidance and homework, kindergarten activity design and practice, dance, piano, handicrafts, vocal music and art, focusing on skill learning. The training practice includes military training, comprehensive practice, social practice, graduation education, etc. The specific-job training lasts for one semester; the practice time is long, and there is a lack of elective courses. [2]

2.2.2 Curriculum Structure And Content Of School b

The curriculum structure of B vocational school is divided into three parts: compulsory courses, elective courses and post practice. Among them, compulsory courses account for about 99.3% of the total class hours, and professional elective courses account for about 0.8%, while on-the-job internship is not included in the proportion, and the 18 week class hours are calculated separately. Compulsory courses also include public basic courses and professional skills courses, of which public basic courses account for 25.8%, including career planning, professional ethics and law, economy, politics and society, philosophy and life, Chinese, mathematics, English, fundamentals of computer application, sports and health, fundamentals of natural science and social science. Professional skills courses can be divided into professional general courses (33.4%), professional core courses (12.4%), practical courses (23.23%) and professional courses (4.7%). It includes many courses, which are art, calligraphy, handicrafts, etc; courses in the fields of early childhood pedagogy, early childhood psychology, early childhood health care, early childhood language education and activity guidance; education internship, professional practice, post practice, military training and graduation education; guidance of parent-child education activities, song accompaniment, playing and singing, chorus command.

School B focuses on the professional skills of compulsory courses. The proportion of general courses (skill oriented teaching) and practical courses is large. With 18 weeks of on-the-job practice, it can be seen that the university focuses more on the cultivation of students' professional practical ability. There are only three elective courses.

2.2.3 Curriculum Structure And Content Of School c

The curriculum structure of C vocational school is divided into three parts: compulsory courses, elective courses and practical courses. Compulsory courses account for about 73% of the total class hours, of which public basic courses account for about 27%; professional basic courses account for about 16% and professional skill courses account for about 30%. Elective courses account for about 7%, while practical courses account for about 20%. Specifically, the curriculum is arranged as follows: public basic courses include career planning, philosophy and life, economy, politics and society, professional ethics and legal basis, mental health education, Chinese, mathematics, basic knowledge of natural science, basic knowledge of humanities, sports and health, and basic knowledge of computer application. Professional basic courses include five areas: preschool children's health and care, preschool children's development psychology, preschool pedagogy, kindergarten game guidance, kindergarten language education activity design and guidance, kindergarten class management, preschool teachers' oral English, and preschool literature reading and guidance. Professional skill courses include music theory and sightsinging, singing and performance, piano and children's song accompaniment, dance foundation and creation, painting foundation and children's painting, kindergarten handicraft, kindergarten educational environment creation, calligraphy, and 17 elective courses. Practice courses include entrance education, labor course, professional course practice, social practice, graduation education and pre-job training. There are two months of practice before one semester's post practice.

Through the comparison of the curriculum structure of the three vocational schools, it is found that the main curriculum structure and content of the three schools are roughly the same, but each has its own emphasis. Both include public foundation, professional foundation, professional skills and practice. From the perspective of teaching hours arrangement, they all pay attention to the setting of courses related to preschool education, especially the time arrangement of skill courses, which accounts for the main part of professional courses. From the perspective of practice time, all of the three vocational schools attach importance to practice, and the time arrangement of practical activities such as education internship and practice is long. The difference is that A vocational school lacks elective courses; B vocational school has few elective courses, and C vocational school has rich elective courses. From the perspective of class arrangement, the class hours of public basic courses in vocational school A are roughly the same as those of professional courses; the class hours of professional courses in vocational school C are significantly more than those of public courses, and the class hours of professional courses in vocational school B are much higher than those of public basic courses.

The three vocational schools basically meet the curriculum requirements in the *Professional Standards for Preschool Education in Secondary Vocational Schools,* and take into account the specific situation of the school. First of all, the curriculum contents of the three vocational schools all reflect the emphasis on the cultivation of professional skills of preschool education, including music skills (piano, vocal music, playing and singing), dance skills (dancing and performance), art skills (painting and manual), teaching ability (activity design, activity implementation), etc. [3]

Secondly, they all attach importance to the development of students' professional ability, including nursing and teaching ability, teaching design ability, organization and teaching ability, etc. It also has practical training links such as internship and practice. The courses include moral education, language, mathematics, English, computer and physical education.

However, school A focuses on the cultivation of students' professional skills, while the content of professional theory courses is too few, lacking early childhood pedagogy, and mixing the five fields into one discipline. It generally shows the characteristics of emphasizing professional skills and neglecting professional theoretical knowledge. School B focuses on students' professional ability, especially music. Rich professional basic courses are offered, and the relevant contents of kindergarten teaching activity design and guidance are emphatically arranged, which is conducive to promoting students' learning of professional theoretical knowledge. The content of professional skills course is relatively comprehensive. However, the lack of elective courses is not conducive to the development of students' specialty and personality. School C focuses on the breadth of students' knowledge and covers all public basic courses mentioned in the professional standards for preschool education in secondary vocational schools. It also pays attention to courses related to professional ability, and there are abundant elective courses.

3. STRATEGIES TO IMPROVE THE RATIONALITY OF THE CURRICULUM OF PRE-SCHOOL EDUCATION IN SECONDARY VOCATIONAL SCHOOLS

3.1 To Revise Training Objectives

With the improvement of social requirements for preschool education, the specialty of secondary vocational preschool education should clarify its own school running orientation, refine the content and specifications of talent training, and set reasonable goals in combination with the requirements of today's society for preschool education talents and the actual situation of the university. It can be connected with higher vocational colleges to transport more high-quality pre-school graduates for the society in the mode of five-year college, so as to supplement the gap of kindergarten teachers in China. We can also supplement the gap of township teachers, nurseries and urban nurseries in China by means of targeted training and signing employment agreements. [4]

3.2 To Optimize Course Structure And Content

In terms of school running orientation, it should be refined in combination with the training objectives of secondary vocational schools put forward by the state. On the basis of meeting the requirements of the *Teaching Standards for Preschool Education in Secondary Vocational Schools*, it should adhere to the concept of "employment oriented, skills centered and ability-based", and reasonably arrange professional basic courses, elective courses and educational training courses in combination with its own school running orientation. [5]

It’s necessary to enhance the timeliness of the course and set up some contents that can be really used by middle school students in the future, such as the organization of children's one-day activities, children's nutrition and health, the creation of children's environment, the production of playing teaching aids, etc. For the three professional abilities of kindergarten care education, early education institution teachers and kindergarten teachers, corresponding curriculum modules are set respectively to meet the knowledge, ability and literacy needs of different positions.

Elective courses can be set up separately or in combination with student associations. Some public elective courses that can improve students' comprehensive quality or professional elective courses related to majors can be selected to meet students' needs.

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Research On the Practice of Online and Offline Blended Teaching of College English

Xiaoping Liu
International Education College, Ji Shou University, Zhangjiajie, Hunan 42700, China

Abstract: The proposal of the current goal of quality education has had a far-reaching impact on the reform of higher education. How to cultivate students' comprehensive skills and improve their knowledge level in education and teaching is a practical problem that many colleges and universities need to solve. Taking college English teaching as an example, college English has implemented a new online and offline blended teaching model, which has greatly improved the efficiency of English teaching, under the requirements of quality education objectives. But at the same time, it also exposes the problems of teachers' and students' lack of teaching subject concept, single teaching method and lack of teaching content. In order to make this teaching model effectively and deeply integrate with English classroom, college English teachers can integrate English online and offline teaching resources from the perspectives of changing teaching ideas, innovating teaching methods and enriching practical content, so as to improve the quality of college English teaching.
Keywords: College English; Blended Teaching; Practice Path

1. INTRODUCTION

With the continuous development of society, China has entered a new era of information development at this stage. The Internet technology and information technology formed in the information development have had a practical impact on the transformation and development of various fields of society, especially in the field of higher education. The application of these technologies has brought a new direction to the educational reform. It further enriches the teaching resources of various professional disciplines. Taking college English courses as an example, college teachers use Internet technology and information technology to create a new model of online and offline blended teaching practice, which not only makes up for the shortcomings of traditional offline education, but also opens up new teaching channels for teaching work, which plays an important role in helping to complete English teaching tasks with high quality in the future.

2. PRACTICAL SIGNIFICANCE OF ONLINE AND OFFLINE BLENDED TEACHING OF COLLEGE ENGLISH

The online and offline blended teaching method implemented in college English teaching is an innovative educational reform method under the background of new quality education. This method is suitable for many professional disciplines, especially in English, which has strong practical value. Therefore, the use of this model in college English courses has extraordinary theoretical and practical significance.

2.1 It Is Helpful To Improve The Efficiency Of English Teaching

The core principle of online and offline blended teaching mode is to combine traditional face-to-face teaching with internet teaching, integrate and complement each other, so as to promote the improvement of teaching quality. Integrating this method into college English teaching plays an important role in improving the efficiency of English teaching. Teachers usually list the key English grammar, sentence structure and other contents in class, and make them into short videos or PPT courseware for students to learn repeatedly, so as to improve the effectiveness of English teaching. Moreover, for some interactive and imitative English content, teachers will also distribute English learning materials to students with the help of Internet technology. Students can browse and learn online in their spare time, which is convenient to save classroom time and improve English teaching efficiency. [1]

2.2 It Is Conducive To Enhancing Students' Comprehensive Level

As a language subject with strong applicability, college English should not only pay attention to the education of students' theoretical knowledge, but also pay attention to the exercise of students' ability to apply what they have learned. The method of online and offline blended teaching in English learning can create rich and diversified teaching means and teaching modes and create an interesting and vivid English classroom atmosphere. It is helpful for students to improve their comprehensive level in the study of grammar and sentence structure and exercise their English practical skills. For example, teachers will show students classic films or videos in class, ask students to follow and learn, and organize interesting English activities after class to lay a good foundation for students' English learning step by step and improve students' comprehensive English practice level.

3. PROBLEMS IN THE PRACTICE OF ONLINE AND OFFLINE BLENDED TEACHING OF COLLEGE ENGLISH

The online and offline blended practice mode used in English practice teaching focuses on training students' English response ability and application ability, which has the characteristics of strong practicality. However, in the specific teaching, many problems in ideas, methods and contents are gradually exposed. Teachers need to think deeply and explain the root causes of the problems.

3.1 The Concept Of Practical Teaching Is Not Deep Enough

At present college English teaching, teachers mainly explain English grammar sentence patterns and basic knowledge points, and students spend a lot of time and energy on word accumulation and grammar sentence pattern memory and practice. Although teachers agree with the adoption of online and offline blended teaching method, they fail to deeply understand the meaning of blended teaching in the specific implementation, It is one-sided that half of the classroom time can be used for traditional teaching and half of the time can be used for online teaching, ignoring the seamless link between online and offline teaching, and paying too much attention to the explanation of grammar and word formation principles and ignoring the exercise of students' practical application ability, resulting in students' inability to effectively digest the content learned after class, and students' passive learning state is also obvious. [2]

3.2 The Practical Teaching Method Is Relatively Single

Although most colleges and universities have begun to implement the online and offline blended teaching mode, teachers still focus on the traditional offline teaching form for the influence of exam oriented education. Even if online teaching is adopted, it is only a simple "textbook + PPT" teaching mode, and there are few online teaching activities such as English-Chinese translation and role dubbing with the help of information technology, The single old classroom teaching mode weakens students' learning enthusiasm. Moreover, teachers tend to explain language knowledge in practical teaching plans, and lack online and offline interaction between teachers and students, and less cooperation and interaction between student groups, resulting in the integration and mutual assistance of online and offline blended teaching can not be fully reflected.

3.3 The Content Of Teaching Practice Is Relatively Deficient

At present, the compilation rules of college English textbooks are mostly bounded by units, and each unit is a theme. Each unit will learn the contents of listening, speaking, reading, writing and translation. However, teachers pay too much attention to the training of oral English, listening and writing in actual teaching, but ignore the training of students' reading and translation skills, which makes the overall content of English teaching not rich enough, The phenomenon of examination is obvious. Moreover, in both online and offline teaching, most of the assignments assigned by teachers are oral training and writing training, lacking a comprehensive teaching content system, which makes most students think that the English content is boring, lacking new ideas. [3]

4. PRACTICE AND COUNTERMEASURES OF ONLINE AND OFFLINE BLENDED TEACHING OF ENGLISH IN COLLEGES AND UNIVERSITIES

In the reform of college English teaching, we should pay attention to many problems existing in teaching, pay attention to the cultivation of students' practical ability, innovate practical teaching methods and enrich practical teaching contents, so as to create a good teaching environment for English teaching reform and promote the process of English curriculum teaching reform.

4.1 To Pay Attention To The Cultivation Of Students' Practical Ability

The main purpose of carrying out online and offline blended teaching mode in colleges and universities is to cultivate students' practical application ability. Therefore, in the future English teaching, college teachers should change the traditional concept of exam oriented education, focus on the improvement of students' practical ability, and make every effort to carry out the practical exercise teaching of grammar and sentence structure, so that students can learn something useful on the basis of mastering knowledge. Teachers usually need to pay more attention to the methods and principles of online and offline blended teaching, learn the advanced teaching methods of other professional teachers, pay attention to setting aside students' practice time of listening, speaking, reading and writing while theoretical teaching, and effectively connect online and offline two-way classes. At the same time, teachers can also increase opportunities for cooperation and communication with students, conduct regular communication and interaction, and do a good job in student training.

4.2 To Innovate English Practical Teaching Methods

In view of the single and old English teaching methods in colleges and universities, college teachers should pay attention to reforming the old methods and innovating the new methods. For example, teachers can use the information-based teaching resources in the school to distribute teaching materials to students to assist students to review and consolidate what they have learned in class anytime and anywhere. Specifically, you can upload English teaching materials and distribute after-school homework by using *Chaoxing*, *Duifene* and other software in class, or edit excellent English articles, film and television materials and other teaching resources for students' reference after class. At the same time, teachers can also practice students' basic skills such as group speaking and translation with the help of online platforms such as *Pigai network* and *Fun dubbing*, so as to exercise students' English practical ability. Finally, students are encouraged to share and display the online learning with other students in class to enrich the online and offline blended teaching mode. [4]

4.3 To Enrich English Practical Teaching Content

The in-depth practice of online and offline blended teaching mode in college English breaks the traditional face-to-face teaching mode and can effectively enrich the content of English practice. In the unit teaching of teaching materials, teachers can properly disrupt and reorganize the contents of chapters according to students' learning conditions, and consolidate students' basic knowledge through repeated training of listening, speaking, reading, writing and translation. Or teachers can appropriately add some extracurricular reading materials, films, classic lines and other materials according to the unit teaching theme to enrich students' classroom learning content. At the same time, teachers can also set a unit theme, requiring students to use *Chaoxing* and other Internet resources to collect relevant pictures, articles, videos and other materials, integrate them into PPT form, and display the theme content in groups with other students in class, so as to enrich the unit teaching content.

5. CONCLUSION

Through the analysis of the application effect of the on-line and off-line blended teaching model in college English teaching, it can be seen that college teachers not only have the "choice" of diversified teaching methods, can choose different teaching methods in different subject English classes, but also have the "disposal" of flexibly setting teaching contents, and can arrange reasonable teaching contents for students to enrich students' English knowledge. Using this model in college English teaching is of great practical significance to improve the quality of English Teaching in the future.

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Study On the Dilemma and Optimization Path of Urban and Rural Grassroots Community Governance

Xiujin Li
Fuzhou Technology and Business University, Fujian, Fuzhou 350715, China

Abstract: Based on the analysis of the dilemma of urban and rural grassroots community governance, this paper puts forward a series of new paths of grassroots community governance: improving the autonomy mechanism and strengthening the autonomy of residents. Establish a co-governance mechanism to strengthen linkage coordination. Improve the level of intelligent governance, optimize the new pattern of grassroots community governance.
Key Words: Grassroots Community Governance; Dilemma; Optimize The Path

1. INTRODUCTION

Urban and rural communities are the basic unit of social governance and the nearest place to the people. The Fifth Plenary Session of the Nineteenth Central Committee of the Communist Party of China pointed out that ' delegate power to the grass-roots level, strengthen the construction of urban and rural community governance and service system ', and the ' Fourteenth Five-Year Plan ' also pointed out that we should build a new pattern of urban and rural grassroots social governance, and improve the urban and rural grassroots social governance system of autonomy, rule of law and rule of virtue under the leadership of the party organization[1]. Therefore, it is necessary to explore the dilemma of grassroots community governance and put forward corresponding strategies in order to provide reference for other grassroots community governance.

2.THE DILEMMA OF URBAN AND RURAL GRASSROOTS COMMUNITY GOVERNANCE

With the development of society, the new model of urban and rural grassroots community governance provides many experience and enlightenment in grassroots community governance and construction, but this model is in its infancy, and there are still many problems in grassroots community governance.

2.1 Unformed model of self-government for community residents at the grass-roots level

At present, under the current situation of the transformation of government functions, the autonomous management and autonomous mode of urban and rural grassroots communities have not yet formed a complete system.

First, the grass-roots community neighborhood committee as an example, it has a strong administrative color. It is not only necessary to complete the basic tasks of grass-roots communities, but also to assist and implement the tasks assigned by communities within their jurisdiction or by superior governments, many of which are small and complex. The community neighborhood committee is tired of affairs, the task received, the lack of overall consideration and planning, long lead to their functions tend to fuzzy and weakening state, can not really play a role.

Second, in terms of the degree of residents ' participation in grassroots community governance, although most residents can actively participate in community governance, but the overall lack of overall concept, overall awareness, community awareness and sense of belonging is not strong. Most residents have low awareness of participation, lack of public awareness and public spirit, and their participation is mostly passive, which limits the depth and breadth of participation. Most residents ' participation in governance activities is relatively shallow, and rarely participate in community decision-making affairs.Community public affairs decision-making activities, represented by residents ' meetings, are often simplified as superficial and popular in tables, with little practical significance in their governance [2] .

2.2Unclear norms of rights and responsibilities among grassroots community governance subjects

Most of the urban and rural grassroots community governance is dominated by the grassroots government, and the participation and development of enterprises and social organizations restrict other governance subjects, thus limiting the proportion and level of social governance subjects in grassroots community governance. Especially in the transition from social management to social governance, government management has gradually revealed deficiencies and fatigue.

First, the limits of authority between the government and social organizations are unclear. The government plays a leading role in urban and rural grassroots community governance, so it fails to clarify its functions and responsibilities in the process of participating in grassroots community governance, often offside management, resulting in blurred boundaries of administrative affairs of governance subjects. The self-governance ability and service ability of grassroots community organizations are relatively limited, and they are still in the stage of exploration and cultivation. The scope of their actual participation in grassroots community governance is not wide, and they have not yet played a substantive role.

Second, neighborhood committees, owners ' committees and property management departments are not clear. The functions of grass-roots community neighborhood committees and property management overlap, and the contents of service management are largely the same but slightly different, resulting in mutual shirking responsibilities. On the one hand, the participation of social organizations has little social impact, lack of authority, lack of social responsibility and must be strengthened. Social organizations in grass-roots communities still lack administrative authority, their access to administrative resources and the scope of practical action in grass-roots communities are also very limited and often participate passively in grass-roots community governance [3] . On the other hand, the public's awareness of social responsibility and social participation of real estate enterprises is weak, and they pay more attention to the conflict between public services pursued by social management and the maximization of economic benefits. At the same time, the existing system and mechanism for enterprises to participate in community management is not perfect, lack of social responsibility, corporate reputation and other related maintenance system.

2.3Lack of linkage and co-governance mechanism among grassroots community governance subjects

The participation of social organizations in grassroots communities in community governance lacks a scientific operating mechanism.

First, there is a lack of flexible linkage coordination mechanism between governance subjects. Most of the ' governance ' attempts are still in the exploratory stage. Although many new participatory governance models such as third-party property company management, community cooperation and community autonomous organizations have been preliminarily carried out, due to the imperfect channel and platform construction of joint governance, the government, enterprises and other grassroots community governance subjects are in the state of ' well water does not violate river water ' and do not interfere with each other in the process of participating in governance. Although grassroots communities in many places attach great importance to mobilizing multiple subjects to participate in grassroots community governance, the coordination and linkage mechanisms and systems such as conference joint, service joint construction and emergency linkage need to be improved, and the linkage force of grassroots community co-governance has not been effectively played.

Second, the communication channels between governance subjects and residents are not perfect. The bottom-up information feedback channels of residents are not timely and smooth, and there is a lack of communication and trust between the grassroots community governance subjects and residents. Some community governance subjects are difficult to communicate face-to-face with residents due to insufficient talent team, lack of staff and tedious community work. They often cannot inform residents of the received information in time, which makes the information received by residents lagging behind. The problems between grassroots communities and residents have not been solved timely and effectively, resulting in communication channels have not played their due role.

3.BUILDING A NEW PATH FOR URBAN AND RURAL GRASSROOTS COMMUNITY GOVERNANCE

3.1 Strengthening grassroots community governance and improving autonomy mechanism

First, strengthen the autonomy function of community neighborhood committees. Explore and implement the employment mechanism of community residents ' committees, business committees and property personnel to further play the role and influence of community residents ' committees. Change the top-down management mode of government, optimize the transformation of government functions, clarify the functions and responsibilities between neighborhood committees and grass-roots communities, formulate a list system and access system, and promote the reduction of the burden on grass-roots communities and the return of functions. Separate communities from administrative functions, restore the autonomous functions of community neighborhood committees, guide residents ' autonomy, and improve the co-governance mechanism of grassroots community services and neighborhood committees[4] .

Second, the residents as the main body, innovation of grassroots community autonomy model. Only by making the people the biggest beneficiaries, the most active participants and the final judges of the modernization of grassroots social governance can we fully mobilize their enthusiasm, initiative and creativity to participate in grassroots social governance. A city coordinated social forces to solve the problems for the people, seek welfare and happiness, leveraging 351 social organizations to participate in grassroots social governance, and comprehensively improve the social governance model. A community carries out ' incubator camp ', research center and ' think tank ' with the theme of integration between Fujian and Taiwan, and fully embodies the governance concept of community residents as the center by organizing rich and colorful ' big forum ' and folk experience sharing meetings in Rongtai. B community has carried out the pilot of three-dimensional prevention and control system of ' mobile housewatchers '. By installing monitoring probes, it not only plays an early warning role in fire prevention and theft prevention and prevention of various safety accidents, but also facilitates the villagers working at home to view the situation at any time. This has opened villagers ‘ self-governance, jointly governing the village with village cadres, guarding the security of the village and the worries of the elderly and children staying at home. It can be seen that taking the residents as the center and innovating the mode of grassroots community autonomy are conducive to the improvement and promotion of the new pattern of co-construction, co-governance and sharing.

3.2 Optimizing the Multiple Governance Structure of Urban and Rural Grassroots Communities

In the grass-roots community governance, social organizations and enterprises are included in the main structure of co-construction, guiding the multi-subject of grass-roots community governance, further optimizing the specific division of labor and the boundary of power and responsibility of governance subjects to participate in community governance, promoting the diversified co-governance of community governance, and optimizing the multi-governance structure.

First, guide and cultivate social organizations to participate in grassroots community governance. Actively cultivate and support the development of regional social organizations that meet the diverse needs of residents, and reduce the threshold for social organizations to participate in community governance. Exploring and innovating effective ways for social organizations to participate in community governance, including communication and consultation, win-win cooperation and authorized services, in order to stimulate the vitality of grassroots community governance public affairs. Cultivating and supporting innovative regional social organizations closely related to regional social development, volunteer groups, charitable assistance, public services, etc. In short, many parties guide and encourage social organizations to participate in grassroots community governance and improve grassroots community governance capacity.

Second, the innovation of grassroots community governance public domain co-construction mode. Under the premise of ensuring the collective public welfare of the community, actively guide the market players to participate in community governance, explore the ' micro operation ' mode of grassroots community governance, and promote the public service of grassroots community governance. Promote the experience of grassroots management mechanism such as ' street whistleblowing, department reporting, receiving and handling ', reduce the access requirements of service enterprises and other subjects, and improve the governance initiative of grassroots community governance actors. Strengthen the cooperation between the government and society, the administrative services, grid management functions transferred to enterprises and third parties, into the market operation.In particular, it is necessary to strengthen the supervision of property services, improve the quality and standardization of property services, promote the improvement of the professional level of grassroots community governance, and innovate the co-construction mode of public areas of grassroots community governance[5] .

Third, build multi-subject participation in grassroots community governance. First of all, we should strengthen linkage and interoperability, joint discussion, joint management and joint debugging to form a joint governance force. Through the integration of grassroots community service menus, service projects and service processes, the synergy between community governance subjects is enhanced, and an efficient working team is formed. Secondly, through the joint mediation meeting, the mediation of neighborhood and non-governmental organizations and the mediation of professional lawyers are combined to give full play to the advantages of large number of units and rich service resources in the jurisdiction of the grassroots community, complement the shortcomings of government services, professional talents, conflicts and disputes, and emergency response, and build a multi-subject linkage and collaborative governance mechanism.

3.3Intelligent community governance in urban and rural areas

Urban and rural grassroots community governance is a long-term, long-term and sustainable work, which cannot be separated from intelligent governance and modern technical support.

First, establish information exchange platform. Through democratic consultation, we can realize the smooth communication of information between residents and governance subjects, ensure the expression of residents ' demands and the solution of contradictions, and improve the level of grassroots community governance. Exploring the information exchange platform connecting residents, party members, communities and streets, relying on residents ' negotiation and discussion platform, establishing convenient and unimpeded information feedback channels, improving collaboration efficiency, and improving negotiation platform and negotiation process. Build two-way collaborative governance, optimize the communication mechanism between grassroots community governance subject and grassroots community autonomy [6].

Second, build a ' online + offline ' combination of modern big data governance model. Combining modern information technology with big data method, some ' smart communities ' combine various APPs such as ' Internet + ' and urban application APPs, establish communication channels and equal communication platforms, innovate two-way interactive channels and forms, accurately identify residents ' needs, open and share grass-roots management service platform, so that convenient service scenarios can be organically integrated and accurately docked, improve the service and construction ability of community governance, and promote grassroots community governance to move towards intelligence.

Third, with the support of science and technology, play the ' wisdom ' ability and role of grassroots community governance. The level of grassroots community governance is closely related to people ‘ s sense of gain, happiness and security. Some communities in a certain city use scientific and technological means such as big data to realize the innovation of community governance mode, improve the efficiency of community governance, and make the people more gainful. More and more communities in the city use modern technologies such as face recognition and fingerprint access control to create ' smart communities ', implement ' mistime work system ' and ' one-stop service ' to create a convenient, beautiful, safe, healthy and harmonious community humanistic environment. The Internet technology is used to innovate the urban management mode, and new technologies such as ' Beidou + Internet of Things ' are introduced in the construction of smart communities to realize the application of Internet of Things. At the same time, through the space-time reference service provided by the Beidou system, the ' Beidou ' is integrated into the public transport ecology such as buses and shared bicycles to realize the grid and intelligent urban management.

4. CONCLUSION

In short, under the background of the new era, it is necessary to speed up the modernization of grassroots community governance pilot, activate the co-construction, co-governance and sharing of urban and rural grassroots community governance. In the future, it is still necessary to further build a new pattern of co-construction, co-governance and sharing of grassroots community governance, so as to provide a solid foundation for China 's social construction, urban and rural grassroots governance and social development.

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Research On the Innovative Application of Taishan Shadow Play Elements in Cheongsam Modeling

Jingyan Geng
Qilu University of Technology, Shandong Academy of Sciences, Jinan, Shandong 250353, China

Abstract: As one of the earliest types of drama in my country, shadow puppets have a unique artistic charm. This research takes Taishan shadow puppets as the starting point, analyzes and innovates the image of Shi Gandang in Taishan shadow puppets, and combines the image of Shi Gandang in the shadow puppets with the Chinese cheongsam. The essence of Taishan shadow puppet modeling art is used in the design of cheongsam to create more innovative and culturally connotative clothing that is in line with the development of the times.
Keywords: Taishan shadow puppets; folk custom; cheongsam; plastic art

1.INTRODUCTION

In recent years, more and more artists have used traditional art as their own language of expression in clothing, and gradually formed a unique artistic style. This article takes Taishan shadow puppets as the starting point, deeply analyzes the characteristics of Taishan shadow puppets, and explores the innovative application of Taishan shadow puppets in modern clothing design. It is hoped that this research can provide designers with new design content and innovative methods, so that more fashion designers can better use undiscovered traditional cultural elements in modern fashion design, and bring them to modern fashion design. Different attempts and possibilities can not only satisfy people's pursuit of clothing beauty, but also better enable traditional culture to be passed on.

2 THE ORIGIN AND DEVELOPMENT OF TAISHAN SHADOW PUPPETRY

As one of the earliest types of drama appearing in my country, shadow puppetry combines folk art and opera together beautifully, showing a unique artistic charm[[1]]. Taishan shadow puppets have a pivotal position in Chinese shadow puppetry. Listening to its singing and observing its shape reveals the profoundness and simplicity of Taishan culture.

Taishan shadow puppetry is also called shadow play and picking shadow. Because the material is made of donkey skin, it is sometimes called donkey shadow puppet. Explore the artistic characteristics of Taishan shadow puppetry. As early as the Ming Dynasty's "Criticism at Taowu", there is a detailed record that Taishan shadow puppets have experienced more than 600 years of accumulation. There is a popular saying that "not to see Taishan shadow puppets is equivalent to never been to Taishan". Taishan shadow puppets have absorbed the essence of Taishan culture, and the repertoire is mostly Taishan culture, and the characters are mainly Taishan stone dares. The shadow play has a unique singing voice, interesting forms and exquisite carvings. As a part of Shandong shadow puppetry, Taishan shadow puppetry has formed a unique artistic style under the strong Taishan culture. In 2007, it was awarded the title of "National Intangible Cultural Heritage" in the first batch[[2]].

3 THE ARTISTIC CHARACTERISTICS OF TAISHAN SHADOW PUPPETRY AND ITS APPLICATION IN MODERN CLOTHING

3.1 The modeling characteristics of Taishan shadow puppets and cheongsam

Taishan shadow puppets and cheongsam are both treasures of traditional Chinese art and culture, and their shapes have very distinctive features:

The uniquely shaped Taishan shadow puppets skillfully use dots, lines and surfaces to organically combine the highly decorative aesthetic art with vivid expressions. The main characteristic of the characters in Taishan shadow puppetry is their rough style, and they mostly adopt modeling techniques supplemented by realism techniques and exaggeration techniques. In terms of modeling, it has also been influenced by drama and folk paper-cutting. The characters are divided into industries such asmale roles,femaleroles,painted-face and comic roles of Beijing Opera[[3]]. The eyes of the characters are the highlight, and the bright eyes and eyebrows represent loyal characters. Straight eyebrows and staring eyes represent a fierce character. The linear eyes represent a gentle personality. Round eyes represent a hot temper. For example, the messenger of justice, Tai Shanshi, has broad eyes and straight eyebrows, while the wolf demon has round eyes. The styling characteristics of Taishan shadow puppets perfectly reflect the personality of Taishan people: honest and honest, upright and cheerful, and kind and helpful, which are the essence of the long-term development of Taishan culture. The shape of the shadow puppets has the style of Qilu culture and the strong characteristics of Taishan culture.

As an important part of my country's traditional clothing, cheongsam has an important position in the history of Chinese clothing. In "Cihai", cheongsam is defined as: "It was originally a kind of clothing worn by women of Manchu Bannermen in the Qing Dynasty. After the Revolution of 1911, women of the Han nationality also adopted it. After continuous improvement, the general style is: straight collar, right-opened large breasted, tight The waist is down to the knee, with slits on both sides, and has long and short sleeves." From the perspective of clothing modeling, traditional cheongsam represents a form of clothing, not a simple style of clothing. The clothing shape of cheongsam not only incorporates the styling elements of "qi dress", but also absorbs the styling characteristics of traditional Chinese gowns. It is a fusion of two kinds of clothing[[4]].

3.2 The color pattern and modern clothing design of Taishan shadow puppets

In terms of color matching, Taishan shadow puppets are mainly red, yellow, green, black, and white. Traditional pigments are gamboge, patina, and magenta. Make the color thick and calm, with strong contrast, beautiful but not gorgeous, with a strong national traditional decorative style. Color is not only an important element of shadow puppet production design, but also one of the three elements of clothing. Through the use of color in clothing design, it can not only clarify and express the style and concept of clothing design, but also affect the performance of clothing modeling effects. In the design of modern cheongsam, we can absorb the characteristics of shadow puppets in the use of colors, and integrate the rich, bright, and beautiful features of shadow puppets into the design to make cheongsam more expressive.

Taishan shadow puppetry integrates the characteristics of folk paper-cutting art, drama art, and portrait art in its pattern patterns. Its pattern patterns are mainly geometric patterns, which are mostly used in the clothing of shadow puppets, such as rectangles, diamonds, ellipses, crescent shapes, etc. These geometric elements are also used in modern clothing design. For example, a round shape can give people a feminine feeling, and a diamond-shaped rectangle with obvious edges and corners can well express a person's personality characteristics. The pattern of Taishan shadow puppets will also be specifically portrayed according to the image of the person[[5]]. For example, the pattern on the legs of the Taishan stone dares to be a dragon uses the pattern of a dragon, and the dragon pattern represents the power of justice. The auspicious cloud pattern on the character represents good luck, and the peony pattern represents Gaojie and trustworthy.

3.3 The production process of Taishan shadow puppets and modern clothing design

Taishan shadow puppets are mainly made of hollow carvings. The carving is simple and unrestrained, reflecting the simple, open-minded and honest character of Taishan people. Most of the literati's facial masks are carved in yang, the generals are mostly carved in yin, and the shadow men with mounts use the method of hanging on wire ropes[[6]]. Through the hollowing process and the relationship between light and shadow, shadow puppets have realized the effect of combining virtual reality and virtual reality on clothing. At the same time, the intensity of light and the change of light and shadow delay also enhance the clothing's overlapping effect. The carving process of shadow puppets can be used to recreate fabrics through cutting, laser cutting, collage and other methods on clothing. This is also an important link in the use of patterns, ornaments and other elements in clothing[[7]]. The hollow design technique is the contrast between the real and the virtual, and the combination of full and empty, thus giving people the effect of visual illusion. Let people visually highlight the hollow part, making the clothes more three-dimensional.

Taishan shadow puppets are made by separating the head and limbs of the figure from the costume. On the one hand, these separated parts will form joints when connected to facilitate the movement of the shadow puppet fight; on the other hand, by making separately, the head of a shadow puppet figure The department can change different costumes according to the needs of the shadow puppet theater scene, which gives the Taishan shadow puppet an obvious characteristic-overlap, that is, the head, limbs and clothing of the character will have a partial overlap effect when combined. The effect will cause the pattern to produce color overlap and contrast, light and shadow brightness contrast, and make the pattern produce a sense of change with rhythm.

4 INNOVATIVE APPLICATION RESEARCH OF TAISHAN SHADOW PLAY ELEMENTS IN CHEONGSAM MODELING

4.1 Research background and content innovation

Shadow puppet art originated from life and rooted in the people. Its existence is not only a manifestation of the ingenuity of the working people in our country, but also reflects people's yearning for a better life[[8]]. Whether it is used as a collection or as an ornament, it has become a rare piece of art among Chinese folk. In addition, the exploration of Taishan shadow puppets can also provide a more comprehensive understanding of local folk customs and customs, which has a certain social value. Nowadays, the promotion and development of Taishan shadow puppet art is not comprehensive enough, especially the characteristics of exploring and carrying forward the Taishan shadow puppet culture through the way of clothing integration have not yet been highlighted. Therefore, we should regain its value and use new ideas to combine tradition with Combining reality to design unique clothing with Chinese characteristics. Shows China's unique fashion style and injects new ideas into clothing design.

4.2 Theme inspiration

For us, clothing is a visual aesthetic art, and it is the most intuitive way of distinguishing a person's first impression of taste and style preferences. The focus of this research is: through the deep analysis and partial decomposition of contemporary Taishan shadow puppet art, starting from its modeling characteristics, through summarizing its modeling, pattern, color, and performance techniques, and combination of artistic beauty and traditional Chinese cheongsam explores the innovative application of traditional folk art modeling and traditional Chinese costume design.

The inspiration for this time comes from the Taishan Shigandang in the Taishan shadow puppet show. The expression technique cleverly uses the shadow puppetry effect. The structure of the cheongsam is divided into the image of Shigandang. The fabric is made of gold silk brocade and non-easy mesh yarn. The color is mainly gentle and atmospheric beige, and black is the main dislocation effect on the collage. The combination of

Chinese folk customs and Chinese traditional costumes not only meets people's requirements for costumes, but also plays a role in spreading Chinese traditional culture and art.

4.3 Innovative practice of pattern design and modeling

4.3.1 Deconstruction and Reorganization of Modeling

Deconstruction is to break the existing structural model, destroy and split it, and recombine it with the existing structure to bring a different visual experience.

Deconstructing the structure of the traditional Chinese dress cheongsam, the traditional symmetrical provincial roads in the cheongsam constitute the shape of Taishan Stone Gandang (Figure 1). It not only shows a strong visual effect, but also creates new styles and modernizes the "tradition" without losing the original charm of the cheongsam.

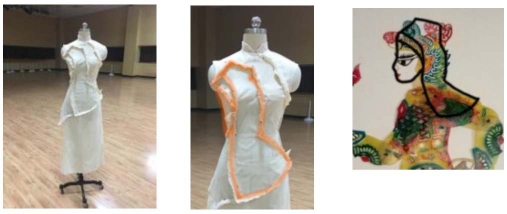

FIG. 1 The division of the structure line of the white cloth Cheongsam and the modeling of Shigantang

4.3.2 Simplification and refinement of patterns

Simplification is an important technique and method for the innovative design of traditional patterns. It is to express objects in the most concise language, omit redundant details, simplify and refine important information in a concise form, and enhance the modern beauty of traditional patterns. By refining the shape and dynamics of Shigan Dang's head, it is processed (as shown in Figure 2)

4.3.3 Remanufacturing and innovation of fabrics

Fabric is the carrier of clothing texture, which not only interprets the design style of clothing, but also presents the performance effect of clothing. The choice of different materials, combined with different craftsmanship, will make the fabric show a completely different texture and effect. In the choice of fabrics, you need to consider the brightness of the color, the texture of the material, the elasticity, the coloring, etc., and choose the most suitable fabric according to the effect you want to show.

From the characteristics of shadow puppet production, it is found that each piece of shadow puppetry is made independently, and then collaged and combined. There is a staggered overlap between the slices, and the color of the overlapping and intersecting parts will be darkened, resulting in a cascade combination relationship between shape and shape. In modern clothing design, there are also many designs that use this composition effect. In practice, through the use of gauze fabrics to combine and collage from large to small, it shows the overlapping relationship of various parts of shadow puppets (Figure 3). Extract the characteristics of Taishan shadow puppets and apply them to the design of cheongsam to create more innovative clothing with cultural connotations that are in line with the development of the times.

Figure 2 Refined and simplified pattern Figure 3 Overlap and practice of patterns

5. CONCLUSION

With the development and progress of society, the cultural quality of human beings has also been further improved. Under the new social situation, people's pursuit of art has also achieved further sublimation. Therefore, the atmosphere that the style of clothing design can present is very important. In the future, a single development direction will no longer meet the needs of people. Therefore, we should strengthen the connection between Chinese folk customs and traditional Chinese clothing, strengthen the use of shadow puppet art in clothing design, and further promote our country while promoting cultural dissemination and exchanges. The formation of the artistic style of modern clothing design.

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An Analysis of Mirror Images in “Wide Sargasso Sea”

Le Zhang
Xi’an International Studies University, School of English Studies, Xi’an, Shaanxi, 710128, China

Abstract: Wide Sargasso Sea is a 1966 novel by Dominica- born British writer Jean Rhys. It is a feminist and anti-colonial response to Charlotte Bronte’ s novel Jane Eyre, describing the background to Mr. Rochester’ s marriage from the point of view of his mad wife Antoinette Cosway, a Creole heiress. The novel employs a variety of symbols and images, especially the mirror images, to interpret the identity crisis of the heroine. This thesis will concentrate on the symbol of mirror images described in the novel, manifested as looking-glasses, gaze of others and water in ponds, etc., and prove the heroine’ s states of lacking positive self- identity through analysis of the distorted reflections they received from all of those devices. The employment of the mirror images, woven together and well-organized, produced a profound and lasting symbolic significance on the whole novel with the evolution of the story and the deepening of the theme.
Keywords: Jean Rhys; Wide Sargasso Sea; identity; mirror images

1.INTRODUCTION

The issue of self-identity has been frequently touched by western authors. And mirrors are always used by them as effective tools to explore self-identity and disclose hidden psychological state of certain characters. In Wide Sargasso Sea, mirror images reflected in different looking glasses and the people around the heroine. Any attempt Antoinette makes to see herself mirrored in the landscape of her birth, or to find any gesture of belonging, ends in failure: blood, tears and, finally, fire. However, in the end of the story, Antoinette found her identity in her dream, and she learned how to establish herself on her own.

2.ANTOINETTE AND HER RELATIONSHIP WITH HER MOTHER

Antoinette Cosway, featured as the protagonist in Wide Sargasso Sea, was a Creole woman with European ancestry plagued by the problem of marginalization. Living in that era, Antoinette’ s race brought her nearly as much oppression as her gender. As a white woman, she was refused by the black people; as a Creole, she was rejected by the white. Born and growing up in such complicated social environment, Antoinette was psychologically torn by these two cultures, “rejected by all and belonging nowhere”(Herischian, 75).

W. Winnicot, in his article entitled “Mirror-role of Mother and Family in Child Development,” asks what a baby sees upon looking at the mother’ s face. “I am suggesting that, ordinarily, what the baby sees is himself or herself. In other words, the mother is looking at the baby and what she looks like is related to what she sees there.”(Winnicott:114)When a mother reflects her own mood or the “rigidity of her own defenses,” rather than her child’ s, what the baby sees is the mother’ s face, and the “mother’ s face is not then a mirror.” (Winnicott: 113) When the mirror of love no longer offers the heroine a reflection of herself, she feels and begins to believe that she is nonexistent. Having been rejected, she would prefer to disappear.

Antoinette’ s childhood world, seen through any other eyes but her own, is already a paradise lost, a universe out of sync with both time and place, consisting of a decaying plantation in a post-emancipation world, a retarded brother, and, most damaging of all, a distant, inaccessible, depressed, rejecting mother. Antoinette, who is fascinated with her mother’ s beauty, watches it more than she interacts with it. She watches her look at herself in the mirror, watches her sleep, watches her when she brushes her hair, watches her when she dances. But she never sees herself reflected there. Her mother’ s concern for Antoinette is mainly as a disappointing narcissistic extension of herself. Although the daughter desperately seeks the sense of safety which an acknowledged identification with her mother might confer, the mother bars her from this feeling of unity and dooms her to a sense of fragmentation. Because the mother herself is an emblem and a victim of the colonial system. And her plantation is a relic, an island of white now adrift in a black sea where, as she says, she is “marooned”.

The mother is subjected to mockery, poverty, suspicion, jealousy, loneliness, fear, and humiliation, as much by the remnants of her colonial community as by the black community surrounding her. But it is the latter which will finally destroy Coulibri, her home, by setting it on fire, thus killing the ailing son with whom she identifies, and precipitating her into madness. Yet this woman is almost all the girl has, and her yearning for her mother, her desire for this present-absent figure, her need to be protected, and her pain at her mother’ s suffering characterize her childhood: “A frown came between her black eyebrows, deep-it might have been cut with a knife. I hated this frown and once touched her forehead trying to smooth it. But she pushed me away, not roughly, but calmly, coldly, without a word, as if she had decided once and for all that I was useless to her....Oh, let me alone, she would say, let me alone.” (Rhys: 20)

The Relationship between Antoinette and the Black

What Antoinette’ s mother cannot give, the girl seeks from Christophine, the faithful black woman who runs the household and represents the nurturing, maternal figure. Christophine is the figure for song, storytelling, and sorcery, but she represents another community, another color, and another class in relation to her young ward.

Christophine' s motherly words and steadiness played a positive role in Antoinette' s self-construction. "You are my darling. Sleep, sleep, baby, sleep."(Rhys: 25) Christophine cared for her like a mother, and Antoinette often hugged and kissed her and sang the songs she taught her. Later, in an attempt to win back her husband' s love, Antoinette begged Christophine to find a way and used Obeah magic, which was used only for blacks. What's worse, Antoinette sometimes looked down upon the "black woman" due to Christopine' s position. In any case, the mirroring is clouded by one incontrovertible fact that Antoinette could not have been a child of Christophine. The former saw herself as a young lady, while the latter was a servant, a wedding gift from her father to her mother. This warped mirroring culminates in witnessing her mother being kissed by the black man who watches over her. "You devil, you bastard black devil from hell,"(Rhys: 35) Antoinette shouted at Christophine when she returned home. The notion of racial opposition always warps her mirroring with Christophine.

In Wide Sargasso Sea, Antoinette' s first attempt to find in Tia the recognition of commonality, or even a gesture of belonging, results in the spilling of Antoinette' s blood and Tia' s tears: "I saw Tia and her mother and I ran to her, for she was all that was left of my life as it had been. We had eaten the same food, slept side by side, bathed in the same river. As I ran, I thought, I will live with Tia and will be like her."(Rhys: 38) Antoinette believes that she can be "like" Tia, because they eat the "same food" and bathe in the "same river." However, this is not the case. Tia names Antoinette the "white nigger," who is "poor like beggar." The difference is that "real white people...got gold money" and "old time white people nothing but white nigger now."(Rhys: 21) Tia' s stone of recognition, as a result, carries, with its throwing, the blood and tears of this racial division: "When I was close I saw the jagged stone in her hand but I did not see her throw it. I did not feel it either, only something wet, running down my face. I looked at her and I saw her face crumple up as she began to cry. We stared at each other, blood on my face, tears on hers. It was as if I saw myself. Like in a looking glass"(Rhys: 38) . This image of Tia is an important one for the novel: she functions as both Antoinette' s "looking glass" and reflection. Tia is the mirror that throws the stone of painful recognition: a reflection of Antoinette' s racial difference, what she is and has always been a colonial exile. Tia's tears, then, are also Antoinette' s tears of recognition: "It was as if I saw myself. Like in a looking glass." It is at this point in the text that Antoinette, seeing herself in Tia, "like in a looking glass," but being stoned for it, loses her childhood innocence. This shattering of mirrors, or Antoinette' s failure to efface the "native," Tia, and step forth as "he real Caliban," parallels the burning of the old estate, Coulibri.

The Relationship between Antoinette and her Husband

Therefore, it is not surprising, then, that Antoinette should throw herself, however fearfully, into her marriage with the young man sent from England. She hopes to find herself and lose herself in him. But the honeymoon is all too brief. Her husband has been personally and geographically exiled by his own family. Their love deteriorates into a war of the wills and the worlds. This is mirrored textually in two ways. Firstly, the honeymoon episode is recounted by the husband, as if Antoinette had regressed to a pre- linguistic stage or, at least, had relinquished that one control. He deprives her of her "I", appropriating the signifier for his own narrative without any transition from her story to his, which is the first linguistic clue to the delirium which escalates throughout the rest of the novel. It is as if language itself were not vast enough to contain their own conflicting existences.

Secondly, he deprives her of her name by arbitrarily renaming her Bertha. In the novel, the scarcity of identifiable selves sems to be mirrored by this confusion or proper names. In the first part of the novel we learn that the mother' s name is Annette. Antoinette is of course phonetically related to Annett. The husband deprives Antoinette of this secret identification at the same time that he reduces her to a mere linguistic creation of his own thought by calling her Bertha. Later, in her lucid madness, Antoinette will muse: "Names matter, like when he wouldn't call me Antoinette, and I saw Antoinette drifting out of the window with her scents, her pretty clothes, and her looking glass".(Rhys: 180) This cruel denial of the proper name is Rochester' s way of obliterating any sense of self which Antoinette may have salvaged from her insufficient relationship with her mother, and of proving the truth of the mother' s madness by also imposing it upon the daughter. As the plot progresses, their inability to truly understand each other deepens her sense of alienation and drives her gradually to madness.

Corresponding to the mirror relationship formed by the characters, the mirror also appears as an important symbol in the whole text. In the first part of the novel, Antoinette is sent to a convent by Aunt Cora after the tragedy of the burning of the manor and the death of her brother and the madness of her mother. She finds that "there are no mirrors in our dormitory" (Rhys: 50) , so the nuns have to look at each other and comb their hair in front of a bucket of water. This detail negates the heroine' s self-identity both literally and metaphorically. Removing the mirror from the dorm meant erasing that part of the woman' s identity. This is a partial denial of the girl' s self-construction, a denial of the self-image that identifies with her own body, gender, and subject of desire.

In the second part of the novel, Antoinette on her honeymoon "smiles at herself in the mirror all day long"(Rhys: 70) , in order to build up her self-confidence and win the love of her husband. Another point during their honeymoon was that Antoinette told her husband about the experience during her childhood:"And then suddenly I was awake. I saw two enormous rats, as big as cats, on the sill staring at me. …But I was not frightened. …I could see myself in the looking-glass the other side of the room…" (Rhys: 90) Antoinette saw the image of herself in the mirror. The image in the mirror is just like the image seen by others.

In the third part of the novel, Antoinette said to herself, "There is no looking-glass here and I don't know what I am like now. I remember watching myself brush my hair and how my eyes looked back at me. The girl I saw was myself yet not quite myself. Long ago when I was a child and very lonely I tried to kiss her. But the glass was between us – hard, cold and misted over with my breath. Now they have taken everything away. What am I doing in this place and who am I?"(Rhys: 183) Trying to kiss the girl in the looking glass manifests Antoinette' s yearning of embracing and fully becoming herself. Nevertheless, the cold glass refused her just the same as the merciless and indifferent society.

The last time Antoinette saw herself reflected in the mirror was in her last dream, which foreshadowed the end of her jumping from a building on fire.She dreamed she was walking into the hall with a candle. "Just then I saw her -- the ghost.The dishevelled woman. There was a gilt frame around it, but I knew her. I threw down my candle..."(Rhys: 186) So the fire burned. The fire was like a huge mirror, reflecting all the other rich images in the blazing fire. The most striking of these are a series of identity related sounds/mirrors -- there is "The Miller' s Daughter", her beloved portrait of a pure English girl; Her mother' s parrot, imitating its owner, kept calling in French, "Qui est la? Qui est la?" Then the wind blew her hair like wings and flew away; The man she hated was calling her "Bertha! Bertha!"; At last she saw the pond in Coolbury, from which Tia waved to her. Seen from the symbolic meaning of the mythological archetype of Narcissus, the image in the mirror and the image in the water are both reflections of the subject' s self-identity. The difference is that the water in the pool is permeable, not cold and hard like a mirror, which prevents the subject from entering it and becoming one with his own body.(DeMing Zhang: 76-88) There is no doubt that Antoinette realized that simply by diving into the pool, she could merge the colonial blackness and Creole white humanity that tore apart her identity and drove her crazy. Indeed, this jump reinforces and affirms Tia' s mirror-like role in echoing the foregoing. After suffering, Antoinette finally regained her freedom and strength in the fire and found her original self and identity. The scars on her face and in her life had faded, the cracks in the mirror had healed, and she and Tia had become one. After the dream, Antoinette said, "Now I understand why I was brought here and what I have to do."(Rhys: 196)Then she took the light and went out of her room and down the hall. This detail implies that in burning down the manor, Antoinette burned down the patriarchal system it represented, and would regain her rights that had been taken away by her husband. Fire burns and purifies everything, and Antoinette is reborn like a phoenix rising from the ashes, finally establishing her own identity.

3.CONCLUSION

By analyzing the relationships between Antoinette and various characters and images in the novel, the heroine' s image is more stereoscopic in front of the reader. These mirror images also made the novel more intriguing and gave the novel strange vitality. From beginning to the end, the artistic expression techniques used by the author interweave and echo each other, which makes the whole novel rich and profound, thus achieving wonderful artistic effects.

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Explorations on the Design of Children's Language App in the Era of Artificial Intelligence

Tangjuan Mou [1,2], Kim Il Tea [1]
[1]Chosun University, Gwangju, 61448, South Korea;
[2]Shandong University of Art & Design, Jinan 250001, Shandong, China

Abstract: With the development of information technology, the era of artificial intelligence has come. In such an era, it is necessary to find Appropriate design strategies for children's language App design, so that children can gain more from children's language App. Based on the elaboration of children's language development mechanism, this paper analyzes the use of children's language App, and puts forward the design strategies of children's language App, such as storytelling the content of children's language App, designing with the help of physical objects, fully combining user needs, etc., in order to bring some help to the design of children's language App.

Keywords: Language App; Children; Language Development

1. INTRODUCTION

By the end of 2020, the number of Internet users in China has been close to one billion, an increase of more than 80 million compared with March 2020. At the same time, Internet users under the age of 10 have also increased, accounting for about 3.1% of the total number. [1] In addition, in 2020, due to the outbreak of COVID-19, many offline educational institutions continuously developed their online education mode, which also promoted information technology to become an important carrier to support children's learning and development, which provided more support for children's language App design.

2. CHILDREN LANGUAGE DEVELOPMENT MECHANISM

One of the most essential differences between humans and animals is that humans have a language mechanism. For children, they can learn language at the early stage of life development, which is a unique advantage of human beings. For a long time, human research on language is mainly based on experience. Specifically, people's understanding of objective things mainly comes from their own accumulated experience. However, such research can not explain the process that children can transform words into sentences. In the theory of innate ethics, it is pointed out that children have a innate language acquisition mechanism. [2] This has been proved in Chomsky's experiment, that is, children themselves have language talent, which is the ability brought by human genes. Therefore, compared with adults, children have initiative in the development of their own language, which explains why children can learn language in the language environment. In addition, many foreign related studies show that human beings can learn language by speaking outside before birth. After birth, humans will be more interested in all kinds of music, speech and other sounds heard before birth. Through years of research, scientists have found language learning genes in human body. It is the existence of such genes that enable human beings to learn language in the language environment of childhood.

3. USAGE OF CHILDREN'S LANGUAGE APP

3.1 OVERALL DISTRIBUTION OF CHILDREN'S LANGUAGE APPS

According to the download of children's language Apps in the mobile phone market, it is found that children's language Apps on the market are mainly divided into four types, namely animation children's songs, Chinese phonetic alphabet character recognition, literacy and reading and others. Among these children's language Apps, animation and children's songs are the most, followed by literacy and reading, and Chinese phonetic alphabet is the last. In addition, through the understanding of these children's language Apps, it is found that there are some problems in many children's language Apps, which have a certain impact on the improvement of children's language ability. For example, there is the problem of inaccurate phonetic notation in the software "Star Doll Pinyin". [3]

3.2 VOCABULARY USE IN CHILDREN'S LANGUAGE APP

In different children's language Apps, the use of vocabulary is different. However, on the whole, overlapping forms are used in all children's language Apps to express children's language characteristics. For example, the children's song "Eating More Vegetables Is Good", which appears in the software "Maitian Character Recognition". Its lyrics is “radish, water, cabbage, green, tomatoes are like lanterns; cucumbers are crisp when bitten, and eating more vegetables is good, strong and less sick.” It can be seen from this nursery rhyme that there are many overlapping words, which are closer to children's language habits.

3.3 CHARACTERISTICS OF SYNTACTIC STRUCTURE IN CHILDREN'S LANGUAGE APP

The most common sentence patterns in children's language Apps are imperative sentences and exclamatory sentences, and the word "Ba" is usually added at the end of the sentence, which makes the sentence more relaxed and lively. [4] For example, sentences often appear in children's language Apps, “celebrate for the animals, lead the small animals to find their mother, draw together,” etc.

It can be seen from these sentences that they are imperative sentences, and there is the word "Ba" at the end of the sentence, which not only makes the sentence more appealing, but also eases the tone of the sentence.

4. DESIGN STRATEGY OF CHILDREN'S LANGUAGE APP UNDER ARTIFICIAL INTELLIGENCE

From the current actual situation, the children's language Apps on the market mainly include animation children's songs, Chinese character recognition, literacy and reading, etc. When choosing children's language App, children's parents will consider not only the beauty of the product, but also the knowledge and interest of the product. Therefore, children's development characteristics should be fully considered in the design of children's language App.

4.1 TO ENHANCE INTERACTIVITY BY STORYTELLING THE CONTENT OF CHILDREN'S LANGUAGE APPS

Story is not only a very effective learning strategy, but also a tool to transfer knowledge. With the advent of the era of artificial intelligence, the way of storytelling has shifted from paper books to digital media. Narrative under digital media consists of text plot, media and users. Text plot will have an impact on users' own interactive behavior and promote users' learning to be open and multi-directional. [5] For example, in many stories, different units will be set to promote children to achieve the task of literacy. At the same time, the design of stories in children's language Apps also needs to design reasonable narrative methods. In the story, if the story shows continuous development, it can bring better experience to children and enhance the sense of substitution of the story. Therefore, in children's language Apps, stories need to be designed as continuous, so that children can learn in a stronger immersive experience.

4.2 To Realize Learning Interest With The Help Of Physical Objects

Language is an important symbol of sound, so the most basic relationship in language is the relationship between symbol and meaning. Children's understanding of symbols is still in the macro form, and they can't deeply understand the connotation of symbols. Therefore, the acquisition of all kinds of knowledge needs the full help of physical objects. In the process of designing children's language App, it is necessary to promote children to connect with reality, so as to promote children to build their own familiar scenes in consciousness. [6] Specifically, the interface of children's language App needs to be designed to be more life-oriented, interesting and situational. At the same time, the environmental design of children's language App needs to be similar to reality, which can promote children to better integrate into the environment, so as to explore and learn the unknown. For example, in the design process, you can choose common things or scenes in life as the basis for design, so that children can realize more effective information acceptance in their familiar things and scenes. On the whole, children's language Apps need to be designed based on the characteristics of children's concrete thinking, which is one of the important methods to promote children's language Apps to play a greater role.

4.3 FULLY COMBINED WITH USER NEEDS

Gamification is very in line with children's nature and can stimulate children's interest in learning. Therefore, gamification can be fully used in the design of children's language App. First of all, we need to realize demand extension in the design, and sublimate user requirements. Children's language Apps can impart knowledge through games and shape users' character at the same time. For example, the game of "Helping Others Solve Problems" can be integrated into children's language learning tasks through stories to promote the formation of children's behavior and character. For another example, we can help children develop knowledge and skills and establish common sense of life by strengthening the extension design of children's language App, so as to have a positive impact on children's behavior. Secondly, in the design, we should fully combine children's life and grasp children's excitement. For example, children's excitement can be grasped in terms of props, roles and sound effects, so as to meet children's curiosity and stimulate children's interest in learning.

4.4 USING MATURE WORKS IP

Parody is a creative technique used in most advertising and marketing. This creative approach is mainly through imitation, re creation and other forms to promote their own influence and promote the better dissemination of advertising. This creative approach can also be used in the design of children's language App. Specifically, in the design of children's language App, people can take various well-known literary works, hot events, classic drama works and fairy tales as the basis of design. For example, literary works such as *The Journey to the West* can be used to integrate familiar story plots into children's language learning tasks in children's language Apps, so as to guide children to learn language in stories.

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Computer-Mediated Discourse Analysis in the Digital Age of New Media: Taking Online Consumer Review as an Example

Jiayi Wu
Shaoxing University, School of Foreign Languages, Shaoxing, China

Abstract: The changes in terms of forms and contents of computer-mediated communication (CMC) on new media have advanced discourse analysis from emerging perspectives. The theoretical framework of this paper is based on the computer-mediated discourse analysis (CMDA) 'toolkit' in which Herring proposed four linguistic levels, including structure, meaning, interaction management and social phenomena. This paper takes online consumer review as an example of computer-mediated discourse (CMD) to establish a corpus. Through CMDA as an approach, it discusses orality, interactional strategies, meaning construction, and its cultural and social influence in online consumer reviews.
Keywords: Computer-Mediated Communication, Discourse Analysis, Online Consumer Review

1.INTRODUCTION

Computer-mediated communication (CMC) and computer-mediated discourse analysis (CMDA) emerged in 1980s and has changed a lot in forms and contents with its development. In consideration of intrinsic sociality of CMC, some scholars are researching CMC on new media and observing how people use languages on new media in the digital age. In this paper, discourse in the digital age of new media refers to the discourse generated in the process of CMC, namely computer-mediated discourse (CMD), which predominantly exists in synchronous/asynchronous communication tool, such as e-mails, Internet forums, audio, videos, multi-user interface, and online games.

Computer-media discourse analysis (CMDA) is a significant domain of CMD. CMDA, as a method, applies the correlation of interactional sociolinguistics, pragmatics, text analysis, and the methodological system of critical discourse analysis, aiming to explain Internet behavior of users by observing languages and their uses in CMD. Sociolinguists of discourse have widely studied this form of media communication discourse, among which Herring[1-4] formulates a methodological toolkit. Combined with the "CMDA toolkit", this paper attempts to collect online consumer review to build a corpus and conducts discourse analysis.

2.THEORETICAL FRAMEWORK

"CMDA toolkit" consists of four levels-structure, meaning, interaction management and social phenomena, reflecting research focus from micor-linguistic, more context-independent level of structure, to the macro-level of contextualized social phenomena. Firstly, issues of structural level covers orality, formality, , expressivity, etc; structural phenomena include the use of typography, orthography, and sentence structure. Secondly, at the meaning level, it ranges over what is intended, communicated and accomplished, focusing on phenomena of words' meaning, utterances and exchanges. Thirdly, the level of interactional management includes interactivity, coherence, interaction. Last, the level of social phenomena involves issues of, power, identity, community and cultural difference.

The methods in term of every level (e.g., text analysis, semantics and pragmatics, conversation analysis, interactional sociolinguistics) and the phenomena, along with broader issues they address, are connected with four levels. Since the wide range of issues and phenomena cannot be examined completely, this paper focuses on significant aspects in the context of online consumer review.

3.ONLINE CONSUMER REVIEW

Online consumer reviews are evaluations posted company or third-party websites", which is a prevailing form of producing and presenting CMD by users. Electronic-word-of-mouth (eWOM) is a term referring to online consumer reviews, defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the internet[2]".

Online consumer review is different from traditional word of mouth. Firstly, traditional word of mouth spreads to the public orally instead of in written form, owning a limited audience. Secondly, online consumer review features rapidity and scalability that can be written and posted by everyone and immediately viewed by others. Additionally, online consumer review can be recorded digitally thus exist in a long term.

4.DATA COLLECTION

This paper randomly collected 680 pieces of Chinese and English online consumer reviews from Chinese and global major review websites, including 40 book reviews from Douban and Amazon, 40 movie reviews from Douban and Rotten tomatoes, 200 restaurant reviews from Meituan and Yelp, 200 hotel reviews from Ctrip and TripAdvisor, and 200 shopping reviews from Taobao and Amazon. The dataset is analyzed as corpus which has functions of finding vocabulary, vocabulary frequency and word index. Based on the 'CMDA toolkit', the corpus is used to examine CMD of online review discourse.

5.CMDA OF ONLINE REVIEW DISCOURSE

5.1 Linguistic features

CMD is mixed with features of written discourse and spoken discourse. Online reviews are mostly text-based. Nevertheless, they are comments posted by users after using or experiencing a certain product or service, which is more like transcripts of utterances and features colloquialism. Compared with written discourse, CMD is imprecise, incoherent and speech-like, hence it exhibits variations of vocabulary and grammar.

In the environment of new media, users tend to coin and use novel expressions. In the corpus of Taobao reviews, there are Chinese homophonic words, such as "zhào piàn" (original meaning: photo; derived meaning: flattering photo); coinage with neologism, like "ān lì" (original meaning: translated name of Amway, an American company; neologism: sincere recommendation), "zhòng cǎo" (original meaning: to plant grass; neologism: the desire to consume a product or a service); old words with neologism, like "jí měi" (original meaning: a name of a district in Xiamen City, Fujian Province; neologism: bestie); bilingual words "dǎ call" (meaning: to cheer for somebody). What is more, users neglect standard usage of languages and omit syntactic structures to simulate spoken languages. It is a common phenomenon that users omit subjects when describing products and feelings. For example, "Will 100% be back." To emphasize emotions and expressiveness, users are inclined to add a number of same letters or characters, such as "Soooooo good!".

Albeit CMD as a typed text discourse, users endow it with creativity and hybridity by using created and novel Internet words, and ignoring grammar rules. Individualized coinage has subjectivity and enables users to express their emotions and opinions. Variations of vocabulary and syntactic structures in CMC emerge in endlessly, which forms a new variety of languages with spoken characteristic.

5.2 Interactional management

The authors of online reviews and readers are unknown to each other, but they can take target recipients and possible responses into account, and potentially apply interactional strategies to construct social connection. Bakhtin[1]comes up with the concept of "addressivity" which refers to the way that "the speaker talks with an expectation of a response, agreement, sympathy, objection and so forth". Therefore, the interactional management between online writers and readers is the focus of the following analysis.

5.2.1 Discourse markers

Discourse markers are choses by the speakers to guide and restrict the addressee to correctly understand the discourse, which have functions of pause and transition in the discourse. Common discourse markers occur in discourse include "well", "oh", "anyway", "altogether". Discourse markers can create a sense of dialogue and unbending. Besides, it serves as a respite during which authors can revise or summarize contents. "Well" in Example 1 are sentence-initial, marking the opening of a narrative of personal experiences. "Anyway" in Example 2, as a summary mark, reflects overall shopping experiences. Discourse markers are a recurrence of users' emotional state, which further emphasizes recipients' engagement, as indicated in Example 3.

Example 1 *Well, it's Quaker Oats and I think people know what to expect from that.* [Amazon]

Example 2 *Anyway, it's good of quality and economical.* [Taobao]

Example 3 *<u>OH</u> BABY! This is my new go-to spot.* [Yelp]

Functionally, discourse markers do not add extra discourse meaning, however. Discourse markers imply speakers' intention and enhance involvement of recipients, as if authors are making direct response towards imagined interlocutors. The wide range of discourse markers further explains the linguistic features of colloquialism of CMC.

5.2.2 second-person address forms

Hyland[3] argues that second-person address forms, as engagement markers, also serve an interactional function that allows readers to get involved in and respond to the unfolding texts. Second-person address, including imperatives, can not only attract potential consumers who feel authors' sincere attitude, but also motivate readers to respond, as shown in following three examples. Second-person address forms enables strangers in CMC to build an intimate relationship, which conveys its interpersonal function.

Example 4 <u>Give them a try</u>, you won't be disappointed. [Yelp]

Example 5 It is a surprise when <u>you</u> walk into this place! [Yelp]

Example 6 <u>Guys</u>, seriously...It was the best salmon in the city!!! [Yelp]

5.2.3 Questions and answers

Raising questions and providing answers in online review discourse can establish dialogues between writers and readers. Answering their own questions or inviting imagined readers, reviewers idealize their readers as active participants who are willing to respond. For instance, in Example 9, the author uses capitalized letters and a number of exclamation marks to express his satisfaction. Afterwards, the author assumes that readers engage in and are skeptical about his/her favorable comment. The author's affirmative answer and restatement enhance the author's strong recommendation and make it convincing. In Example 10, this book review begins with a question framed as "is it that good?", which indicates suspicion of unfailing positive reviews. Then the author elaborates his/her own comments. It seems that the author talks directly to reviewers of good comments, to express disappointment and his/her unique insights. Therefore, despite online reviews as asynchronous and monologic texts, the use of questions in a review discourse can create a sense of dialogue.

Example 9 *We had clam chowder and this is by far the <u>BEST!!!</u> Yes, the best!* [Yelp]

Example 10 *Is that good? Seeing titles of reviews, I strongly suspect that it is marketing. May be the experience is admirable, but the writing plot is poor.* [Douban]

To conclude, discourse markers, second-person address and imperatives as well as questions and answers marks interactivity in online review discourse.

5.3 Meaning construction of multimodal discourse

Semiotic resources appear in multimodal online review discourse, such as photos, emoticons and memes. As discourse has become a social practice in which multiple semiotic resources work together to construct meaning, multimodal discourse analysis has emerged to understand how different semiotic resources with independent meaning interact to and construct integral and dynamic discourse meaning.

Symbols of facial expression in CMD can be roughly categorized into emoticons,emoji,memes and stickers. CMC in virtual space lacks of facial expressions, gestures and poses, while emoticons serve an auxiliary language. Memes and stickers are not effective because it needs to be posted as photos, thus emoticons and emoji are more common in online reviews. This paper mainly conducts discourse analysis of multimodal online review discourse including emoticons and emoji.

Example 13 *we were full and happy :)* [Yelp]

":)" in Example 13 is a character grouping that is called emoticon. It is a combination of mathematical operators, punctuation marks and letters. Emoticons simulate emotional features of the human face but they can not fully display facial features, hence they are abstract. Researches found that when seeing this smiley face ":)", occipitotemporal part in brain can be activated and people tend to react with the same facial expression[5]. Consequently, readers possibly have positive emotion and become potential consumers.

Example 14 *(⊙o⊙) Wow, both strawberry juice and grape juice are excellent.)* [Meituan]

The emoticon in Example 14 is more graphic, of which expression is exaggerated without losing the picturesqueness. It vividly depicts a look of surprise but it cannot be recognized whether it is wonderment or terror. A certain emoticon is polysemy, and its carried information is ambiguous and indefinite. The comprehension of emoticons' connotative meanings has contextual correlates of adaptability, which involves recipients' decoding of context and text when understanding discourse.

Example 15 *The insanitary ground of bathroom is poor, absolutely disgusting*🤢 [Ctrip]

"🤢" in Example 15 belongs to emoji that is inclusive in input system. In CMC, people cannot materialize the physical presence. Multimodal resources, including emoticons and emojis, provide substitute to achieve communicators' desired effect of physical interaction and emotional sharing. The green face has visual impact and simulates nauseousness. In face-to-face communication, speakers add supplementary words to fill in the gaps in the listeners' information. On some occasions, emoticons or emojis come along successively with texts in online review discourse. In Example 15, the reviewer describes the poor hygiene and subsequently appends "🤢". Other examples can be shown in "happy :)" in Example 13 and "(⊙o⊙) 哇" in Example 14. Working together with textual mode, emoticons or emojis have the attribute of adding information, which is the self-fulfillment of information.

Example 16 *Highly recommended hotel in Bangkok!!!*👍👍👍 [TripAdvisor]

Example 17 *The fixings can be added as much as you like: avocados*🥑*, shelled shrimps*🍤*, pork bellies*🥩*, crab*🦀*, salmon*🍣*, tuna*🐟*. What are you guys waiting for!!! Go to have a try!!!* [Meituan]

Emoji is not limited to facial expressions but includes symbols, such as physical gestures and objects. Participants cannot see each other's facial expressions and movements, so emojis of gestures or movements meet the need for emotional expression. The emoji of thumbs-up in Example 16 makes the gesture cooperate with text to assist communication. In Example 17, the reviewer lists a number of food and uses emojis respectively. An array of food emojis makes the review conspicuous among numerous visual information and draw readers' attention with its stark style. Graphic food emojis can arouse readers' appetite and their desire to dine out at the recommended restaurant. Moreover, it can be found that a number of exclamation marks can emphasize tone. Consequently, punctuation marks work with words and emoticons to act as "emotional assistant" and jointly construct discourse meaning.

5.4 Social practice

The majority of emoticons in the English corpus are horizontal type, like ":)", while in the Chinese corpus, they are mainly vertical ones, like "(*^_^*)". Vertical emoticons can express either positive or negative emotion in a straightforward way, which has a high degree of recognition. Vertical emoticons are complex with emotional subtleties, thereby readers need to exert imagination. This is associated with Eastern and Western culture of emotion and personality. The former is implicative and subtle, while the latter is explicit and unconcealed.

Through the comparison of the negative hotel reviews of English and Chinese, it can be noticed that reviewers from different cultural backgrounds adopt different complaining strategies. Strategies of containing positive comments and proposing suggestions have higher frequency in Chinese; strategies of obvious complaints, threats and warning have higher frequency in English. English reviewers are apt to express negative emotion frankly and complain without considering hotels' profits; Chinese reviewers are inclined to express complaints euphemistically. From the perspective of cross-cultural communication, China has rich cultural background and belongs to high-context culture. It is consistent with collectivism and focuses on context rather than contents; while the Western culture of low-context is consistent with individualism, emphasizing convincing and self-expression.

In online review discourse, there is no physical and vocal information that can be traced. Therefore, male and female users can participate equally. In a film review, a female user expresses and defends her ideas when commenting on a film about patriarchy. Although at the end of the discourse, she says that "of course, it's still a little unbearable for the collective climax of male guardians", which reflects that female users use euphemistic and conciliatory words about dissent in order not to compound the issue and impose opinions on others. Furthermore, female users tend to use more polite words than male users, aiming to create a friendly and harmonious atmosphere in the virtual cyberspace. Last but not least, on the issue of flaming, it is male users who tend to flame in CMC (Zhuang, 2007). In negative online reviews, male users express strong negative emotions and use derogatory words. This is due to the gender differences in communication ethics. Males tend to threaten other's face, while females consider other's face.

6.CONCLUSION

With the extension of communication media and the wide range of multimodality, the rapid development of new media in the digital age has challenges CMDA. Online consumer review is a common form of producing CMD in new media. As a typical example, it was analyzed in corpus and the major founding can be reported results as follows: CMD features combination of written and spoken languages, in which variations occur in vocabulary and syntax; major strategies of interactional management include discourse markers, second-person address, questioning and answering; emoticons and emojis in CMC, as multimodal semiotic resources of language, can be integrate with written text to be interpreted precisely and comprehensively by means of multimodal discourse analysis; social factors, including culture and gender, affect people's language choices in CMC. For instance, cultural factor influences people in a specific cultural contexts to use horizontal or vertical emojis and different complaining strategies; due to gender factor, male and female users can participate equally but vary in confidence, politeness and flaming.

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Skillful in Taking Advantage of Raw Material Features, Proficient in Selecting Appropriate Shape and Size --Research on Regenerative Design for the Urban Accessorial Building in Taizhou

Xiang Chen
Nanjing Normal University Taizhou College, Taizhou 225300, Jiangsu, China

Abstract: Urban accessorial building are considered to be an important label of urban space and urban culture, reflecting the social form, historical humanities, customs and aesthetics of the urban environment, and playing a role of finishing touch. Based on the gardening concept of "Skillful in taking advantage of raw material features, proficient in selecting appropriate shape and size" proposed by Ji Cheng in his book *Art of Garden-Building*, a landscape gardener in the late Ming Dynasty, this paper carries out an innovative understanding and creative transformation, and discusses in depth focusing on the recycled design of the urban accessorial building in Taizhou. Taizhou, as an emerging city, the regeneration design of its accessorial building has just started, and it is urgent to carry out theoretical discussions on the development and innovative research of its urban accessorial building.

Keywords: Skillful In Fitting To The Environment; Proficient In Selecting Appropriate Shape And Size; Accessorial Building; Regenerative Design

1. INTRODUCTION

Under the background that "urban characteristics" and "characteristic city" have become the core competitiveness of domestic cities, according to people's needs for emotional culture of modern urban space and the requirements of urban content construction, accessorial buildings are one of the important contents of urban emotion and image shaping because of their flexibility, diversity and plasticity. Nowadays, accessorial building have sprung up, constantly pushing through the old and bringing forth the new, displayed in people's vision, and become an important organic bridge for building modern urban spatial form and humanistic environment. The form, connotation and function of some works are closely related to the continuation of urban context, reflect regional cultural beliefs, and become an important carrier for modern people to place their "nostalgia" in the city. However, at present, in the process of urban construction in China, many cities blindly pursue "new", "different", "bright" and "foreign". The design and shaping of urban accessorial building increasingly deviate from the "local voice", ignoring the inheritance of local traditional culture, resulting in the disconnection between artistic practice and regional culture, exposing many problems. The application of regional traditional cultural symbols in modern design can not "do whatever you want" in its shape and connotation, and make random changes without bottom line. [1] In view of this situation, it is urgent to promote the regeneration design of urban accessorial building by theoretical construction and practical exploration.

2. THE NECESSITY OF REGENERATION OF URBAN ACCESSORIAL BUILDING UNDER THE BACKGROUND OF THE NEW ERA

In the process of modern urban development, accessorial buildings add luster to the increasingly modern city and become an important carrier to create environment, condense culture and show the characteristics of the times. However, over the years, most of the modernization of Chinese cities have learned from the fruits of western cultural evolution, and many adverse factors have also been produced in obtaining constructive achievements. The rapid urbanization process has caused the life dilemma of ecological disorder, cultural chaos and lack of faith to a certain extent. The root of these problems lies in the influence of western modern culture on the one hand, and the result of cultural self-confidence caused by the aggression and slavery of Chinese modern history on the other hand. Chinese offspring and profound sense of national confidence begin to awaken in the report of the Nineteenth National Congress of the Communist Party of China, with general secretary puts forward the goal of "Realizing China's great rejuvenation in the new era." It also recognizes the disadvantages of western culture and the harm caused by it. After experiencing rapid development, China's urbanization in the 21st century has gradually entered the link of "rational return", and began to think about the sustainable development of urban history and culture, brand image and regional characteristics. As one of the contents of modern urban ecosystem, some accessorial building lack the expression of cultural emotion and are not integrated into local culture, spirit and will, so it is difficult to highlight their characteristics, although accessorial building have made preliminary development in China. The public participation is not high, and even some designs are purely to fill the vacancy of the site. In view of this, it is necessary to rethink, re explore and re design local urban accessorial building in order to return to the theoretical and practical thinking of the inheritance system of Chinese traditional culture, independently explore and open up the foundation and road of new cultural construction with Chinese characteristics.

3. "REGENERATION" MAKES THE INNOVATION OF EXCELLENT TRADITIONAL CULTURE RETURN

City is a stable community at a certain stage of human society development. It is a comprehensive "carrier" integrating entertainment, leisure, life and work. "Every historic city has its own specific process of formation of physical and geographical conditions and development of human history." [2] As a country with a history of thousands of years, China mostly includes history, humanities and culture in the process of urban development. A series of factors such as customs and environment have gradually integrated into the "matrix" of urbanization. In the change of years, the "matrix" continues to evolve, giving birth to its own unique social and cultural system, forming the city's own gene and realizing the orderly operation of ecology.

However, the process mode and characteristics of domestic urbanization are mostly based on the concept of western modern urban development. Therefore, for a long time, it has focused on the application of western modern cultural ideas and ignored the research of domestic excellent traditional cultural theories, resulting in the integration of the built city and the local environment and the isolation into a "mountain castle". Why does it breed such a phenomenon? This is that Chinese cities have the characteristics that western modern ideas do not have, and passively apply western modern ideas, construction methods and design thinking, resulting in the confusion of cultural beliefs, the dislocation of urban image and the lack of cultural heritage in practice. In view of this, in October 2018, the general office of the CPC Central Committee and the general office of the State Council issued the *Opinions on the Implementation of the Project for the Inheritance and Development of Chinese Excellent Traditional Culture.* It points out that "Implementing the project of inheriting and developing Chinese excellent traditional culture is a major strategic task of building a socialist cultural power. It is of great significance for inheriting Chinese culture, comprehensively improving people's cultural literacy, maintaining national cultural security, enhancing national cultural soft power, and promoting the modernization of national governance system and governance capacity." It aims to respond positively the national policy of "comprehensively rejuvenating traditional culture" that has realized the great rejuvenation of the Chinese nation. Domestic cities have carried out in-depth thinking on the inheritance, innovation and sustainable development of traditional culture, and began to "borrow the past to enlighten the present" and "make the past serve the present". Through the study of traditional culture, it can be comprehensively applied to the development of modern Chinese cities. "Skillful in borrowing, fine in physical fitness" is “Skillful in taking advantage of raw material features, proficient in selecting appropriate shape and size” mentioned by Ji Cheng, a gardener in the late Ming Dynasty in his book *Yuan Ye.* The book tells the concept of gardening. In many interpretations of it, individuals prefer to understand it as "reason, basis”; here means that the artistic image of the garden should be adapted to people, places and times. Borrowing means introducing, incorporating or accepting; here means borrowing the scenery. Body means that the garden system and planning are appropriate. Appropriate means that it meets the characteristics of materials, terrain and the requirements of the owner. This paper gives understanding to the new era, realizes the regeneration of traditional culture, and inspires the regenerative design of today's Chinese urban accessorial building through borrowing "the garden is skillful in borrowing, and the essence is appropriate in body".

4. TAIZHOU URBAN ACCESSORIAL BUILDING STRATEGY UNDER "SKILLFUL IN TAKING ADVANTAGE OF RAW MATERIAL FEATURES"

As the saying goes, "one side of the soil and water nourishes one side of the people". The formation of Chinese cities mostly has its consideration of "geographical advantages". They often use the geographical advantages of mountains and rivers to build cities, build urban contents with different layout, different scale, different forms and different cultures, gradually breed the unique "matrix" of the city and form an identifiable urban "identity". Taizhou city has a long history and has its own unique geographical environment. As one of the specific externalized styles of urban space, accessorial building need to be carried out around the texture of regional environment at the beginning of architectural sketch design to reflect the unique impression of the city based on geographical environment. With the help of the concept of "skillful borrowing", this paper constructs the generation system of accessorial building with urban characteristics based on the "geographical advantage" environment. The shaping of accessorial building under the concept of "skillful in borrowing" is as follows. The first is because of time. Combined with the aesthetic changes of the times, it presents the aesthetic consciousness of urban construction under different times in a materialized visual form, so as to make urban accessorial building become the object of the public's visual aesthetic experience and the medium for the public to feel the traditional culture and the spirit of the times. The second is because of local conditions. People should adjust measures to local conditions and skillfully and reasonably implant accessorial building in the corresponding urban environment to express feelings in the scenery. The third is because of people. People live in a complex urban environment. On the one hand, they regenerate and design accessorial building according to the idea of "unity of heaven and man", so as to provide high-quality and ecological living conditions for the public; On the other hand, the form, elements and decoration of accessorial building have been recognized and approved by people from the heart. The fourth is because of context. The advocacy of regional cultural beliefs, spiritual will and emotional vision undertaken by accessorial building have been reasonably conveyed. This requires that in the process of physical development of modern cities, we should not only be based on the urban environment, but also take into account the small scenes of the region. We should not only integrate the urban spatial layout and various visual elements based on the "appropriate environment", but also "skillfully" implant accessorial building, integrate into the cultural atmosphere, correct the physical scene and realize the dream emotional environment, reasonably shape the environment and optimize the visual quality, to realize the surrounding people's recognition of accessorial building in this scene.

As an open, civilized and dynamic emerging city, Taizhou's urbanization process continues. The implantation of accessorial building needs to be further combed and the creation of "skillful in the appropriate environment" should not only make accessorial building become a part of the public environmental service system, but also become an important place to reflect the awareness of the local people. To some extent, accessorial building are brocade decals in the harmonious environment between people and the city. They can not only create a harmonious spatial environment between people and the city, but also balance the urban ecosystem.

5. EXPRESSION OF TAIZHOU URBAN ACCESSORIAL BUILDING OF "PROFICIENT IN SELECTING APPROPRIATE SHAPE AND SIZE"

As a highly intelligent organism in nature, people need to activate two basic dimensions in the world of life, namely material existence and spiritual world. After the high-speed horizontal development of emerging cities as material existence, the architectural groups born are tall, single and too indifferent. Therefore, it is necessary to carry out the vertical and deep development of the city and realize the comprehensive construction of the whole city in the vertical and horizontal directions, which provides a good opportunity for the generation of accessorial building in the urban environment. As one of the physical contents existing in the urban environment, accessorial building need to integrate into people's spiritual world when providing people's material existence at the beginning of design and creation, give it more special significance, meet people's spiritual trust behind emotional pleasure, and think about the significance of urban traditional culture. Therefore, the regenerative design of accessorial building not only needs to meet people's visual aesthetic needs from the material entity, but also needs to give its sound character to the surrounding people's cultural recognition. In a sense, the goal of "Proficient in selecting appropriate shape and size" at this stage focuses on defending the "spirit" of the inheritance and development of Chinese traditional culture in domestic modern cities, restoring the self-confidence of Chinese traditional culture, constructing an appropriate urban cultural ecosystem, awakening the past memory forgotten by modern urban people, and recovering the lost spiritual home for local people. It can be seen that Taizhou urban accessorial building under the concept of "Proficient in selecting appropriate shape and size" need to be based on the refinement of its "cultural gene", more tend to strengthen the "character" of the city, regenerate the soul of the city, and radiate the inner emotion and vitality of human nature in the city. Therefore, in the face of the fact that the urban architectural community can not achieve "Proficient in selecting appropriate shape and size", accessorial building have become an important choice to reshape the urban historical memory, regenerate cultural beliefs and build a spiritual home because of their small size, flexibility and diversity. The implantation of the concept of "Proficient in selecting appropriate shape and size" is mainly reflected in: (1) functional "physical fitness": accessorial buildings are not only the finishing touch in the urban environment, but also create a more ecological urban livable environment, which takes on a new look and makes people's life richer and happier; (2) Art "selecting appropriate shape and size": as a special representational art, accessorial building not only create a distinctive local urban art atmosphere, but also convey humanistic feelings and cultural self-confidence. This is the response and presentation of art to the urban cultural environment, trigger people's emotional resonance, communicate and interact with urban art, so as to convey the impression of the city; (3) Spiritual "selecting appropriate shape and size": in the creation of accessorial building, it is necessary to fully consider the accuracy of input and output of accessorial building in humanistic spirit, realize the effective integration with local traditional culture, and enhance the city image and beautify the urban environment. The ultimate goal of accessorial building is to connect the relationship between people, city and culture and create a sustainable organic environment.

In the process of the birth, formation and development of Chinese traditional cities, the ideas and aesthetic habits of local culture will be unconsciously bred, and the basic way of humanistic existence will be derived. This requires that in the process of innovation and development of accessorial building. On the one hand, we should "accurately" tap the urban root, high-quality urban culture and establish the urban image based on the urban characteristics; On the other hand, "selecting appropriate shape and size" aims at the revival of local urban culture, integrates urban resources and coordinates the urban environment. Finally, improve people's livelihood and enhance people's sense of belonging, happiness and self-confidence in the city.

6. THE INTERACTION BETWEEN TAIZHOU CITY AND ACCESSORIAL BUILDING

Since the birth of mankind, it has been connected with the spatial environment. By transforming the natural environment, it builds a living space suitable for people, shapes each element into a corresponding form of existence, integrates into the humanistic system of urban ecology, and establishes a mutually recognized emotional echo, so as to improve the fit of urban space. Therefore, in China's modern cities, we should pay attention to the construction of the image of "geographical advantage" of the city, for the shaping of accessorial building; we also should "accurately" the identity and aesthetic value of urban culture. Only in this way can it be understood and accepted by the public.

Nowadays, accessorial building have become an important part of urban construction. They have diversified exchanges with the public and transformed into the public's deep impression of the city. They are not only an entity integrated into social life, but also a clear regional cultural impression. The key to the application of "skillful in taking advantage of raw material features, proficient in selecting appropriate shape and size" in the shaping of Taizhou urban accessorial building lies in the regenerative design exploration of Taizhou regional traditional culture, which not only conforms to the current national conditions of building a cultural power in China, but also starts from the actual development needs of regional cities; "adapting to local conditions" is the starting point of shaping accessorial building. On the one hand, it solves the problem of "skillful in taking advantage of raw material features"; On the other hand, it solves the social problems under the factors of "multi environment" with "essence in body". Finally, the realization of the long-term and stable survival relationship between human beings and cities is mainly manifested as follows: first, it reflects people's sustenance of urban traditional culture; Second, it reflects the city's style of displaying people's creative culture; The third reflects that culture constructs the spiritual link between people building cities, developing cities and continuing cities. Especially in China, people's reflection of their urban culture has strong spiritual sustenance, which has always been an important resource for domestic cities to build and expand their own space, which also constitutes an important gene for the regeneration of the "characteristics" of urban accessorial building.

6. CONCLUSION

The design concept of "skillful in taking advantage of raw material features, proficient in selecting appropriate shape and size" is based on the redevelopment of Chinese traditional culture and thought, "skillful using" in the innovative design of contemporary urban accessorial building, "accurate" positioning its regenerative design concept and playing a certain positive role. By introducing the concept of "skillful in taking advantage of raw material features, proficient in selecting appropriate shape and size" into the creation of urban accessorial building, we strive to provide effective strategies and methods for the regenerative design of domestic urban accessorial building, not only improve the quality and efficiency of regenerative design, but also make it inherit national culture in the process of urban development and create a city image in line with regional characteristics.

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Research On Ideological and Political Practice of *Architecture Engineering Graphics*

Bing Sun
School of Environment and Architecture, University of Shanghai for Science and Technology, Shanghai 200093, China

Abstract: Adding ideological and political education elements to the teaching of *Architecture Engineering Graphics* is conducive to realize the unity of knowledge and value, promote the improvement of teaching methods and improve the moral quality of teachers. At the same time, the ideological and political practice of *Architecture Engineering Graphics* also faces some problems, such as the difficulty of integrating curriculum knowledge and ideological and political content, the doubts of students' ideological and political education, and the influence of ideological and political education on teaching plan. Therefore, we can realize the integration of ideological and political elements and the course of *Architecture Engineering Graphics* from the objectives of ideological and political construction, the integration point of ideological and political construction and the integration safeguard mechanism.

Keywords: *Architecture Engineering Graphics*; curriculum thought and politics; practical exploration

1. INTRODUCTION

With the diversified development of social culture, ideological education is very important for colleges and universities. It is necessary to ensure that college students form correct ideas, noble moral qualities and noble professional ideals. At present, the ideological and political education in colleges and universities has broken through the category of ideological and political education, integrated ideological and political education into the study of all professional courses, and practiced the concept of all-round education. The course of *Architecture Engineering Graphics* is a basic course for the major of architectural engineering. It is highly practical and theoretical. In addition, the particularity of the construction industry requires students not only to have excellent drawing skills, but also to be prepared for good and hard work. Therefore, the ideological and political education in the course of *Architecture Engineering Graphics* has strong practical value and practical significance.

2. SIGNIFICANCE OF IDEOLOGICAL AND POLITICAL PRACTICE OF *ARCHITECTURE ENGINEERING GRAPHICS* COURSE

2.1 To Realize The Unity Of Knowledge And Value

Architecture Engineering Graphics is a necessary course for students majoring in architectural engineering. Students are required to not only have excellent professional skills, but also have noble professional quality and meticulous working attitude. The formation of these abilities of students needs a long-term accumulation process, which can not be realized in a short period of time. Using these contents to carry out ideological and political education in professional courses is conducive to improving students' professional skills, enhancing students' professional ethics, and realizing the unity of knowledge and value. [1]

2.2 TO PROMOTE THE IMPROVEMENT OF TEACHING METHODS

In order to realize the ideological and political education of *Architecture Engineering Graphics*, it is necessary to innovate the original teaching methods. In the original teaching, the teacher only taught the textbook knowledge to the students, and the students simply remembered the drawing standards and skills without thinking too much. The practice course of ideological and political education requires teachers to add relevant content to the original teaching plan, so that teachers can not only transfer professional knowledge to students, but also be the leader of students' thoughts, and use case teaching method to imperceptibly affect students' thoughts.

2.3 To Improve The Moral Quality Of Teachers

Teachers should not only impart professional knowledge, but also infiltrate moral education in teaching links, which requires teachers to have good moral cultivation, so that teachers can set an example and influence students. The practice of ideological and political education in the course of *Architecture Engineering Graphics* is conducive to teachers' improvement of their moral cultivation, continuous learning of the Party's principles and policies and industry norms, improvement of their professional quality and moral quality, teaching by example with noble moral cultivation and improving the moral quality of students.

3. PROBLEMS IN IDEOLOGICAL AND POLITICAL PRACTICE OF *ARCHITECTURE ENGINEERING GRAPHICS*

3.1 How To Integrate Curriculum Knowledge And Ideological And Political Content

Architecture Engineering Graphics is a highly theoretical engineering course. To integrate ideological and political content into classroom teaching, teachers need to make more efforts in lesson preparation, such as how to tap the ideological and political elements of the discipline and how to naturally insert ideological and political education without damaging the integrity of the teaching of the discipline. In addition, teachers should also consider the variability of teaching links, such as how to carry out ideological and political education once the teaching activities change or the insertion point of ideological and political education changes. Therefore, how to fully consider these situations and choose appropriate ideological and political education methods in the design of teaching plan is one of the problems to improve the ideological and political practice effect of *Architecture Engineering Graphics.* [2]

3.2 Students Have Doubts About Ideological And Political Education

Students majoring in construction engineering have a strong thirst for knowledge and hope to master the basic knowledge of construction engineering in the classroom. At the same time, the professional students' career choice is clearer after entering the university, and they are not very interested in ideological and political education in teaching. Integrating Ideological and political education into professional teaching, students worry that it will destroy the professionalism and integrity of teaching, and that teachers can not complete teaching as planned, which will affect the learning progress. In order to complete the teaching task, teachers are bound to cause inadequate explanation of professional knowledge and affect students' understanding of knowledge. Therefore, students have doubts about ideological and political education in professional courses.

3.3 Ideological And Political Education Affects Teaching Plan

The teaching time of each semester in colleges and universities is fixed, and teachers have formed a relatively stable teaching plan. If ideological and political education is integrated into professional teaching, the implementation of the teaching plan may change, which will affect the completion of teaching tasks. How to not only delay the professional teaching within the specified teaching time, but also reflect the achievements of ideological and political education in the teaching effect is a major problem in the practice of curriculum ideological and political education. Due to the lack of professional teachers' ideological and political education ability, it is easy to copy mechanically in curriculum ideological and political practice, which has a certain impact on professional teaching and poor effect of curriculum ideological and political practice. [3]

4. THE EFFECTIVE WAYS OF IDEOLOGICAL AND POLITICAL PRACTICE IN THE COURSE OF *ARCHITECTURE ENGINEERING GRAPHICS*

4.1 To Establish The Goal Of Ideological And Political Construction Of *Architecture Engineering Graphics*

The course of *Architecture Engineering Graphics* is the basis for the teaching of architectural engineering specialty. It focuses on the improvement of students' drawing ability and spatial thinking ability. It is a course to lay the foundation for students to engage in relevant occupations after graduation. In this regard, in the ideological and political construction of *Architecture Engineering Graphics*, we should establish the following basic objectives, that is, to combine knowledge transfer and value guidance in classroom teaching, guide students to learn basic drawing skills, and gradually form practical, hardworking, rigorous and meticulous professional ethics through typical cases and people's deeds. Therefore, teachers should take building morality and cultivating people as the goal, comprehensively implement ideological and political education in curriculum construction and teaching, realize the transformation of curriculum ideological and political education, and practice the educational essence of teaching and educating people. [4]

4.2 To Explore The Ideological And Political Elements And Integration Points Of *Architecture Engineering Graphics* Course

The ideological and political elements of *Architecture Engineering Graphics* are mainly the working spirit of architects and the application of wisdom in architectural drawing. In the explanation of professional knowledge in the classroom, we should excavate these elements and integrate them. The main methods are as follows. Firstly, teachers should apply the deeds of the architect and modern teaching tools to the links of ideological and political education, such as explaining the achievements of the architect Liang Sicheng in cartography to make students realize the importance of cartography. For another example, with the help of the "manufacturing power strategy" and the documentary *Great Power Craftsman*, students can form lofty career aspirations and be able to bravely shoulder the burden of the times. Secondly, by explaining the standards and norms of drawing, students can gradually form a sense of norms, such as abiding by discipline in school, law and discipline in society, and abiding by the company's rules and regulations in work. Thirdly, in the three view teaching, we should help students improve their dialectical thinking ability, improve their drawing ability, and help students form a correct methodology. Fourth, through safety accident cases, emphasize the importance of drawing according to national standards, so as to make students realize that building engineering drawing should have rigorous, serious and responsible professional quality. It can help to avoid safety accidents. Fifth, teachers should use the "craftsman spirit" to edify students. For example, teachers guide students to understand the architectural deeds of the famous architect I.M. Pei, so that students can experience the master's wisdom and the craftsman spirit of dedication and refinement, so as to actively practice this spirit in their study, life and future work.

4.3 To Construct The Guarantee Mechanism Of Ideological And Political Construction Of *Architecture Engineering Graphics* Course

The construction of curriculum ideological and political education needs the concerted efforts of colleges and universities and teachers. First, the school should actively implement the national educational policy, create a good atmosphere for ideological and political education, hire experts and scholars to give lectures at the school regularly, use various ways to strengthen teachers' moral quality, increase the capital investment in ideological and political education, and ensure that ideological and political education can be carried out through diversified educational means in professional teaching. Secondly, professional teachers should give full play to their own strength, implement ideological and political education into curriculum teaching, run through the connotation of "craftsman spirit" into teaching links, influence students with serious teaching style and practice, and communicate more with teachers of the same subject and ideological and political teachers to jointly build curriculum ideological and political education and realize "three complete" education. [5]

5. CONCLUSION

At present, colleges and universities actively build curriculum ideological and political education, which is a necessary measure for colleges and universities to practice the concept of “building morality and cultivating people” and “three complete education”. In carrying out curriculum practice activities, colleges and universities should avoid the disadvantages of copying mechanically, actively explore the integration path of ideological and political education and discipline professional education, find the ideological and political elements in professional course teaching, do a good job in pilot work and continue to practice, find problems in practice and adjust working methods in time. Only in this way can we form a curriculum ideological and political education model with college characteristics, so as to improve the teaching effect of curriculum ideological and political education. In other words, teachers should strengthen students' moral quality education, and promote students to strive to be a socialist youth with both morality and ability in the new era, on the basis of realizing the teaching objectives of professional courses.

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Research on the Development of Higher Vocational Education under the Background of "Double High Plan"

Lin Gao
Zhumadian Vocational and Technical College, Zhumadian 463000, Henan, China

Abstract: Under the background of the formulation and implementation of the "double high plan", the education construction of higher vocational colleges should clarify their own development objectives, pay attention to improving the competitiveness of vocational education and talent training, effectively deliver more innovative and practical technical talents for the society, and promote higher vocational education to become an important force supporting national strategy and local economic and social development. Higher vocational colleges should strive to build a double qualified education talent team, optimize and improve the management system of higher vocational education, innovate the integrated development mode of industry and education, and lay a solid foundation for teachers and students to carry out diversified practical learning activities. This paper will further analyze and discuss the construction of higher vocational education under the background of "double high plan".
Keywords: Double High Plan; Higher Vocational Education; Innovation-Driven Development

1. INTRODUCTION

At present, it is an era of educational innovation. The construction and development of higher vocational education in China should keep pace with the times and keep up with the pace of the times. Under the launch and implementation of the "double high plan", the educational development of higher vocational colleges should carry out innovative practical education around the contents of "Craftsmen of the Nation" and "Building Morality and Cultivating People", pay attention to improving the training and education methods of technical talents, optimize and improve the talent education mode, and realize the high-quality and sustainable development of higher vocational education. As the action program and the strategy of strengthening the country for the reform and development of higher vocational education in the new era, the "double high plan" should actively respond to the national policies and guidelines, always adhere to the socialist education direction, effectively establish the educational concept of open school running, and constantly improve the overall level of higher vocational education.

2. THE MAIN BOTTLENECK OF HIGHER VOCATIONAL EDUCATION DEVELOPMENT UNDER THE BACKGROUND OF "DOUBLE HIGH PLAN"

2.1 Constraints Of Institutional Factors Of Integration Of Enterprises With Vocational Schools And Universities

The essence of integration of enterprises with vocational schools and universities means that vocational colleges organically combine professional industry with practical teaching, strive to create an advanced and perfect talent training platform and form an integrated school running mode between schools and enterprises by strengthening cooperation and contact with social excellent enterprises. The "double high plan" requires higher vocational education to actively deepen the integration of industry and education, give full play to the educational resource advantages of the participants, and provide favorable guarantee for the cultivation of high-end talents. [1] However, the actual situation is that there are some disadvantages in the system construction of higher vocational education in China, and the national government departments have not formulated and promulgated relevant laws and regulations in time to guide industries and enterprises to participate in the integration of enterprises with vocational schools. The social responsibilities and obligations of enterprises, industries and higher vocational colleges in the vocational education system are not clear enough, and the school enterprise industry university research cooperation lacks scientific policy guidance and legal basis in practice, which restricts the high-quality development of higher vocational education in China to a certain extent.

2.2 process of concept transformation of Higher Vocational Education

In the process of educational construction and development in China, higher vocational education is a very important part. The quality of higher vocational education is directly related to the sustainable delivery of a large number of excellent technical and practical talents for the society. However, influenced by the traditional concept of exam oriented education, both parents and educators in higher vocational colleges are generally concerned about students' professional learning achievements, ignore the management of students' learning process to a certain extent, and are unable to deeply grasp students' learning characteristics and hobby needs. In this way, it will affect the effective improvement of the quality development of higher vocational education. In addition, the social industry can not solve the problem of changing the concept of vocational education overnight. They generally believe that students with college degree in vocational education are the low-end labor reserve force. In this way, students receiving vocational education in China are prone to self-confidence and confusion after graduation.

2.3 Practicality Of Higher Vocational Education Teaching And Evaluation System

In the process of the construction and development of higher vocational education in China, the practical teaching of higher vocational colleges in various regions is lack of good innovation; various teaching activities are carried out around the contents of professional courses and teaching materials, lack of cooperation and exchange with enterprises in various industries, and reasonably formulate and apply the integrated education mode of industry and education, which leads to the formality of higher vocational education and is difficult to cultivate more technical application talents with high abilities and high quality. Driven by the implementation of the "double high plan", the teaching and evaluation system of higher vocational colleges in various regions should continue to develop in the direction of innovative practice. [2] Higher vocational colleges should strengthen the introduction and application of advanced information technology, build a practical training education base with market enterprises, build a teaching resource sharing platform, guide professional teachers to innovate and apply the "online and offline" blended teaching mode, deeply understand the characteristics of students' learning situation and learning needs, so as to improve teaching methods, and fully guarantee the effect of higher vocational education.

3. PRACTICE AND INNOVATION OF HIGHER VOCATIONAL EDUCATION DEVELOPMENT UNDER THE BACKGROUND OF "DOUBLE HIGH PLAN"

3.1 To Scientifically Improve The Development System And Standards Of Higher Vocational Education

The construction and development of modern higher vocational colleges should scientifically focus on the "double high plan" to strengthen the integration and innovation of industry and education, and build an advanced and perfect education system. Firstly, higher vocational colleges should improve the educational development system, promote the construction and development of the vocational education development system of school enterprise cooperation with the participation and guidance of the national government, and clearly clarify the social educational responsibilities and rights of different subjects. The national government should formulate and promulgate relevant laws and regulations in time, earnestly safeguard the legitimate rights and interests of all subjects, encourage industries and enterprises to actively participate in the innovation and practice of higher vocational education, make suggestions for the development of higher vocational education, and share sufficient advantageous educational resources. Higher vocational colleges should optimize and improve the ideological and political education system of vocational students, reasonably improve the content and form of ideological and political education in combination with the professional nature of students and the characteristics of students' learning needs, so as to promote students to continuously improve their comprehensive quality in ideological and political learning and learn how to be a good citizen of society. Then, higher vocational colleges need to strengthen the innovation and improvement of the production education integration teaching system, invite social experts, scholars and enterprise talents to discuss and exchange, realize the strong cooperation in the teaching process and the construction of training and practice base of higher vocational colleges, and help lay a good working foundation for the construction and development of higher vocational education in China; [3] Finally, the national government should effectively formulate and promulgate unified management standards for the development of vocational education, standardize and guide professional teaching in higher vocational colleges, ensure that vocational education can fully reflect the characteristics of Chinese education and higher vocational education, and meet the training requirements of technical talents in the new era.

3.2 To Adhere To The Unity Of Higher Vocational Education Value And Ideal Cognition

Under the background of the implementation of the "double high plan", the educational construction of higher vocational colleges should always adhere to the advanced concept of "education oriented", and strive to cultivate the majority of students into comprehensive talents with both morality and conduct, outstanding application of technology and practice and superior innovative spirit. Higher vocational education is a creative practical activity. [4] Educators should attach great importance to the improvement of the quality of practical talents, realize the re creation and promotion of human value, and promote each student to realize the importance of studying hard and contributing to the society in the future. The quality and specifications of talent training in higher vocational education mainly cover the following contents. The first is outstanding professional ability. Be able to skillfully master and use various professional knowledge and skills, have good practical innovation consciousness and ability, and be able to actively think, analyze and solve problems. The second is to have both political integrity and ability. The development of higher vocational education under the "double high plan" should strive to cultivate excellent talents with both political integrity and talent, promote the all-round development of morality, intelligence, physique, art and labor in school, and become useful talents needed by the society in the future. The third is patriotism. Higher vocational education should be based on carrying out ideological and political education activities, constantly improve students' personal moral quality and political consciousness, promote them to resolutely fulfill their social civic responsibilities, and strive to become an excellent citizen with selfless dedication, dedication and firm ideals and beliefs.

3.3 To Strive To Build a Double Qualified Teacher Talent Team

Under the development background of "double high plan", higher vocational colleges should actively strive to build a double qualified teacher talent team with their own characteristics, so as to achieve the public goal of dual education of talents between schools and enterprises. First of all, higher vocational colleges should improve the structure of self professional teachers' talent team, appropriately increase the investment in the introduction of tutors in social industries, inject more new forces into the construction of teachers' talent team, and help improve the overall professional ability and quality of teachers' talent team. [5] Then, higher vocational colleges need to strengthen cooperation with local excellent enterprises, jointly build a resource sharing and exchange platform, so that school teachers can timely grasp the latest dynamic knowledge and new skills of the industry, optimize and improve professional teaching content in combination with the requirements of the development trend of market talent training, and effectively improve the education quality of higher vocational colleges.

4. CONCLUSION

In conclusion, under the guidance of the implementation of the "double high plan", the construction and development of higher vocational education should focus on optimizing and improving the education management system, scientifically and resolutely adopt the integrated education mode of industry and education, establish an excellent double qualified teacher talent team, meet the individual learning needs of students at different levels and majors, and continuously improve the quality of education work of the university.

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Design and Application of Liangshan Minority Nationality Patterns in Jewelry

Xiaojing Liu
Art Education Department, Xichang Minzu Preschool Normal College, Xichang 615000, Sichuan, China

Abstract: Starting with national patterns, we will deeply explore its long-standing artistic creation principles and aesthetics, and apply them to modern teaching and aesthetic education through cultural restoration and skill inheritance, so as to cultivate people with complicate skill in higher vocational colleges in the new era. The talents not only have high moral cultivation, but also have the ability to inherit excellent national culture and skills, teaching and school enterprise cooperation and practice ability, make contributions to education and poverty alleviation in Liangshan, cultivate "three gains and one have" talents, and accumulate experience for the "three education" reform of colleges and universities in ethnic areas.
Keywords: Liangshan Nationality; Pattern; Innovation; South Red Agate

1. ORIGIN AND ANALYSIS OF LIANGSHAN ETHNIC MINORITY PATTERNS

Liangshan Prefecture is the largest Yi inhabited area in southwest China. The Yi people live in high mountains and gullies all year round. Because of the isolated natural environment and the slow development of social form, the ancient culture of the Yi people in Liangshan has been preserved and continued to this day. The modeling language of the Yi patterns is primitive and simple. The patterns of the Yi patterns carry the ancient myths and legends of the Yi people and reflect their national characteristics and spirit. As the carrier of national culture, the Yi patterns have high research value in culture and art, social history, inheritance and utilization.

Figure 1: the picture is from Liangshan Ethnic Customs Park

2. ANALYSIS OF South Red AGATE OF LIANGSHAN ETHNIC MINORITIES

The most famous jewelry in Liangshan area is red agate. This study takes red agate as the carrier to study the creation of Liangshan national patterns. Liangshan south red agate is the latest mined mineral deposit. Its sufficient output has become a major advantage of Liangshan and an important export place for the national south red agate jewelry industry. However, due to the traditional design patterns and single style, consumers have visual fatigue on the aesthetics of south red agate jewelry. Therefore, in recent years, the sales volume of Liangshan south red agate jewelry is gradually decreasing. As a gathering place of ethnic minorities, Liangshan Prefecture is a key poverty alleviation area of the state. Improving the economic income and quality of life of the Yi nationality in Liangshan is an important task to get rid of poverty.

Daliangshan has a superior national cultural heritage. The creative design of Liangshan Yi patterns is applied to south red agate jewelry to improve the unique aesthetic of south red agate jewelry, endow south red agate jewelry with national cultural spirit, and achieve the purpose of improving the sales of south red agate jewelry.

rough stone red agate jewelry
Figure 2: the picture comes from the network

3. CREATIVE DESIGN OF LIANGSHAN THE YI PATTERN

This paper excavates and collects the Liangshan Yi patterns with insufficient theoretical data, and analyzes and summarizes the cultural significance of the Yi patterns. Through the arrangement of Yi pattern data and field investigation, the similarities and differences of Yi pattern in inheritance are sorted out, and the pattern innovation is explored. This paper analyzes the aesthetic attributes of Liangshan Yi patterns, carries out innovative and creative design of the Yi patterns, triggers people's aesthetic interest, and makes them diversified in agate jewelry design, so as to meet people's pursuit of the cultural connotation of traditional jewelry.

The excavation and innovation of Liangshan Yi patterns is not only a process of borrowing and enculturation the national culture, but also an appropriate change in line with modern people's aesthetic psychology, which will make the Yi patterns more likely to inherit and develop.

Through the data collection and sorting of Liangshan Yi patterns, combined with the local jewelry raw material -- South red agate, taking the type characteristics of the Yi patterns and the redesign of patterns as the starting point, the elements of Liangshan Yi patterns are applied to the design of south red agate jewelry. It aims to realize the integration of regional traditional culture and modern jewelry design, and create a new cultural concept for south red agate jewelry in Liangshan area.

4. LIANGSHAN YI PATTERNS AND THE INNOVATIVE RESEARCH PROCESS OF SOUTH RED AGATE

(1) Preliminary arrangement. By refining the graphic elements in the Yi patterns, people can simplify and creative design, paint the Yi innovative patterns by hand, combine the designed graphic elements with southern red agate, and design a new southern red agate jewelry shape with national patterns. People also can use computer design software to draw jewelry effect drawing.

(2) Later arrangement. The designer should communicate with south red agate jewelry craftsmen through the effect drawing of jewelry to study the feasibility and marketability of jewelry modeling. After confirming the design draft, the finished product is made with south red agate process tools for market sales.

5. CONCLUSION

In the current situation, there are few studies on the regional culture of Liangshan Yi nationality in China, and there are few subjects on the design and application of minority patterns in jewelry. Especially in jewelry design, most designs are placed in jewelry by copying the Yi patterns. The design style is not only simple and rough, but also lack of modern aesthetic taste. Therefore, no matter from the concept or to the formal level, there is no relevant in-depth mining and application. Sun Ziwei of China University of Geosciences wrote in *On the Application of Chinese Traditional Patterns in Modern Jewelry Design* that "the rational application of Chinese traditional patterns in modern jewelry design is of great significance to inherit Chinese civilization and take the road of national characteristics." [1]

Liangshan Prefecture is the largest gathering place of the Yi nationality in southwest China. It has a unique national history and culture and many national patterns endowed with life. At the same time, because of its unique geographical environment, the rich southern red agate has driven the economic growth of Liangshan and quickly occupied the jewelry market. However, due to a large number of consumer demand, the similarity of southern red agate jewelry is serious. For a long time, it will inevitably have a certain impact on the local economy. Therefore, it is an inevitable trend for the development of Liangshan south red agate and the foothold for the development and growth of national patterns to apply national patterns to south red agate jewelry, integrate the elements with national characteristics, and create jewelry with national characteristics.

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Design for Emoticon of Figure Sculpture in the Qin and Han Dynasties

Man Liu, Ao He
Department of art education, Xichang Minzu Preschool Normal College, Xichang 615013, Sichuan, China

Abstract: With the development of the times, the acceleration of people's pace of life is reflected in all aspects, such as the prevalence of short videos, the application of emoticon, and even watching TV dramas. Many people have at least 1.5 times the broadcast speed. The emoticon adds a color to this fast era. A vivid and interesting emoticon not only saves typing time, but also expresses more clearly. You don't even know how to express your emotions in language. Through an emoticon, you can incisively and vividly let the opposite side experience your current feelings. Therefore, more and more people are engaged in the research and development of emoticons and make many interesting and exquisite emoticons. However, the emoticon design with historical relics as the theme is still relatively few. This project leads the student team to design emoticons based on character sculptures in the Qin and Han Dynasties and combined with the current popular Internet language, to let the students have a deep understanding of historical relics and further take them to explore and innovate.
Keywords: Figure Sculpture Of The Qin And Han Dynasties; Network Buzzwords; Emoticon

1. FIGURE SCULPTURE IN THE QIN AND HAN DYNASTIES

The Qin and Han Dynasties pushed Chinese sculpture to the peak. The expression of the sculpture of the Qin Dynasty was solemn and powerful, and pursued details, such as the terracotta warriors and horses of the Qin Dynasty, which showed different aesthetic feelings independently and as a whole. The expression of sculptures in the Han Dynasty is of large-scale cooperation, rich in emotion and the pursuit of artistic conception, such as the natural stone carving of Huo Qubing's tomb. However, it is this "objective simplicity" that has become a symbol of the cultural spirit of the Qin and Han Dynasties. [1]

At present, the cultural relics emoticon has become a very important means to publicize cultural relics, and it is also a dynamic thinking of the museum to "make cultural relics live". For example, in August 2017, a group of "Changsha Kiln Babies" appeared on the Internet and attracted widespread attention. The author "Xiaoerzi 123456" drew an emoticon based on the figure sculpture unearthed from the Changsha Kiln Site, also known as Tongguan Kiln (as shown in Figure 1); the emoticon is vivid and lovely, and has the characteristics of cultural relics. [2] Once it was released, it attracted widespread attention. The original cold cultural relics can also be so dynamic and life, which also aroused the extensive thinking of museum workers. The emoticon may be "let the cultural relics live". It is not only an important way to fully integrate into public life, but also an important form to spread and display local cultural characteristics through the Internet, so it is of great research value.

The character sculptures in the Qin and Han Dynasties are also very characteristic, severe, masculine, exquisite, clumsy, rough and so on. The great and strong spirit of the sculptures in the Qin and Han dynasties have left a brilliant page in the history of Chinese sculpture. Because of this, we should carry forward the fine arts of the Qin and Han Dynasties and integrate them into public life.

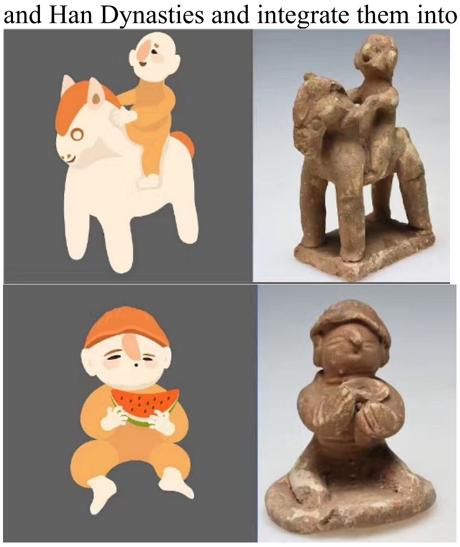

Figure 1: the picture comes from the network

2. RESEARCH AND DEVELOPMENT OF EMOTICON OF CHARACTER SCULPTURE IN THE QIN AND HAN DYNASTIES

2.1 SINGLE LINE DRAWING IS ADOPTED

There were many figure sculptures in the Qin and Han Dynasties. Several representative figure sculptures were selected as the creation objects of emoticon, such as the terracotta warriors and horses in the first emperor of the Qin Dynasty and the sitting terracotta warriors and horses in the Han Dynasty. According to the image of the figure sculpture and the unique simplicity of the emoticon, the single line is used to shape, hair accessories, clothing and expression of the sculpture. The single line has always been the essence of our Chinese painting. Therefore, the single line design not only reflects the nationality, but also reflects the characteristics of the emoticon. [3]

2.2 TO CAPTION THE POPULAR ACRONYM LANGUAGE

With the acceleration of the pace of the times, many things in people's life are changing, especially the explosive divergence of information in the network age. Recently, the prevalence of network alphabetic language has aroused widespread concern in the world, and people inadvertently use it in life, such as YYDS (永远的神), SSMY (盛世美颜), BHYS (不好意思), NSDD (你是对的), BDJW (不懂就问), SSFD (瑟瑟发抖), etc. They are actually the abbreviations of the phonetic initials of the language. Scholars believe that there are many reasons for the emergence of such a similar language. The most important thing is that young people want to innovate and reflect their unique thinking. The second is the special state of network communication. [4]

Because of this, the author believes that the production of cultural relic emoticon must keep up with the trend of the times in order to give full play to its maximum value. Therefore, the author instructed the student team to use the abbreviated alphabetic language to write essays for the sculpture characters made on the single line above. [5] The collision between history and modernity produced a wonderful chemical reaction, which is very interesting.

2.3 TO RETAIN THE ORIGINAL STYLE OF FIGURE SCULPTURE IN THE QIN AND HAN DYNASTIES

The overall production style is not particularly simple, but still retains the original style of many Qin and Han character sculptures, because it can reflect the style of historical relics and cultural relics.

Figure 2: created by Chen Qiumiao on September 2021

3. CONCLUSION

The character sculptures in the Qin and Han Dynasties collided with the most popular acronym network language, creating a unique cultural relic emoticon. It not only effectively disseminates historical relics, but also adds a cultural connotation to the public's network communication. [6] At the same time, it also allows our students to experience an interesting cultural relics emoticon design, which is very helpful to the improvement of professional ability.

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Study on the Effect of Table Tennis on Physical Health of School-Age Children

Wu Jiarun, Li Sha, Yang Yujun
School of Physical Education and Health, Guizhou University of Traditional Chinese Medicine, Guiyang 550025, China

Abstract: Objective: to enhance the physique of school-age children by table tennis intervention. Methods: 40 school-age children without sports foundation participating in table tennis systematic training were investigated. By testing the growth of various indexes of physical development after one year of training, the data were compared and analyzed with other 40 school-age children without systematic training, so as to find out the advantages and disadvantages of table tennis. Results: table tennis has a good effect on reducing fat and improving cardiopulmonary function, but it has a general effect on promoting height development; Long term table tennis training will cause uneven distribution of body strength and affect the normal development of spine curvature and the balanced development of limbs. Conclusion: single use of table tennis intervention can not comprehensively promote the physical health of school-age children.

Keywords: School-Age Children; Constitution; Function

1. INTRODUCTION

According to the survey report on China's physique and health in 2018, the detection rate of obesity continued to rise; vital capacity and most physical fitness indicators continued to decline, and chronic diseases continued to show a tendency of younger age. School age is the key period of children's development. Effective exercise can develop their body shape, physical function and physical quality.

Table tennis has an excellent mass base in China. The required site is small and the equipment is relatively simple. There is no direct physical confrontation and the process is relatively safe. It is feasible as a way to enhance the physical health of school-age children.

2. RESEARCH OBJECT AND METHOD

2.1 Research Object

40 male school-age children aged 7-12 without sports training experience were randomly selected from the students participating in table tennis training as the experimental group; 40 male school-age children aged 7-12 without sports training experience were randomly selected as the control group.

2.2 RESEARCH METHODS

Firstly, the physical fitness of the two groups of students was tested, including:

2.2.1 Main body shape indexes include upper limb length, lower limb length, average circumference of upper arm and forearm, average circumference of thigh and shank, spinal curvature, sebum thickness, etc.

2.2.2Physical function indicators include heart rate, vital capacity, etc.

After one year of systematic training, the experimental group lived normally as before. After retesting, the data changes of the two groups were compared and analyzed.

2.3 Data Statistics

Statistical software was used to analyze the average and standard deviation of the data before and after the experiment, and the indexes of the experimental group and the control group before and after the experiment were tested by one-way ANOVA.

3. RESULTS AND ANALYSIS

3.1 Effect On Body Shape And Development

Table 1 Comparison of Basic Physical Development Indexes Between Students with Systematic Training and Students Without Systematic Training

	Students with Systematic Training		Students without Systematic Training		
	Average Number	Standard Deviation	Average Number	Standard Deviation	Analysis of Variance
growth in stature(CM)	5.24	8.43	6.16	6.72	P>0.05
growth in weight(kg)	3.51	9.63	5.43	6.38	P<0.05
growth in left upper limb(CM)	2.16	2.78	2.91	4.51	P>0.05
growth in right upper limb(CM)	2.44	3.12	3.45	3.73	P<0.05
growth in left lower limbs(CM)	2.82	3.75	3.68	4.42	P>0.05
growth in right lower limbs(CM)	2.87	3.35	3.82	3.96	P>0.05
growth in the average circumference of left upper limb(CM)	1.28	2.69	1.38	2.35	P>0.05
growth in the average circumference of right upper limb(CM)	1.42	2.77	1.57	1.89	P<0.05
growth in the average circumference of left lower limb(CM)	1.55	2.73	1.92	1.78	P>0.05
growth in the average circumference of right lower limbs(CM)	1.87	2.91	2.15	1.57	P>0.05
growth in tsf(MM)	4.82	3.47	-5.21	2.88	P<0.01

We can see from table 1 that the average height growth of students in the experimental group is higher than that in the control group, but the data of the two groups are not statistically significant, indicating that the effect of table tennis system training on promoting the height growth of school-age children is not good. In terms of weight, the average weight gain of students in the experimental group is higher than that in the control group, and the data of the two groups are statistically significant, indicating that table tennis system training can increase the weight of school-age children. From the standard deviation of the two groups of data, it can be seen that the weight data of students in the experimental group are more concentrated than those in the control group. According to the data of triceps brachii skinfold thickness, the skinfold thickness of students in the experimental group decreased significantly ($P < 0.01$), indicating that table tennis system training has a very obvious effect on students' fat reduction. In terms of limb development, the average limb length and circumference of students in the experimental group were higher than those in the control group, but there was no significant difference between the two groups except the length and circumference of the right upper limb ($P > 0.05$), which proved that systematic table tennis training could significantly increase the length and dimension of the right upper limb. To sum up, table tennis systematic training has a general effect on promoting the development of height and limbs, but it has an obvious effect on promoting the development of the right upper limb, which may be related to the technical characteristics of table tennis. In this experimental group, all students were holding the racket with right hand. Training enhances the muscle strength and muscle endurance of the upper limb holding the racket, making its development better than that of the non racket holding hand and upper limb. If long-term training is not paid attention to, it may lead to the imbalance of left and right upper limb abilities of school-age children, which is unfavorable to their growth. In terms of lower limbs, some studies have shown that table tennis systematic training will lead to children's slow growth of lower limb length but rapid development of circumference and uneven development of left and right legs, [1-3] but none of the above situations occurred in this test, which may be related to the short training time or the improvement of scientific training methods in this test. Whether the specific will have an impact may need to be proved in later research. Through a year, the weight of the experimental group and the control group increased, and the increase of the experimental group was more obvious. However, combined with the significant decrease of sebum thickness, we can see that the systematic training of table tennis can effectively control obesity, and the increase of muscle proportion is the main reason for weight gain.

Table 2 Spinal Morphology of Students With and Without Systematic Training

	Normal proportion%	lateral flexion proportion%	Hunchback proportion%	Both cases proportion%
students with systematic training	85	5	10	0
students without systematic training	70	5	10	15

It can be seen from table 2 that the incidence of abnormal spinal morphology of students in the experimental group is higher than that in the control group. This result is the same as that of other relevant studies, [1-4] which proves that table tennis system training will have adverse effects on children's spinal development. The basic posture of table tennis is chest and abdomen, and the main force is unilateral contraction and rotation. In the long run, such basic posture and force distribution will inevitably lead to uneven distribution of body strength, and eventually lead to abnormal curvature of the spine.

3.2 Impact On Physical Function Indicators

Table 3 Comparison of Basic Physical Function Indexes Between Students with Systematic Training and Students Without Systematic Training

	Students Without Systematic Training		Students With Systematic Training		
	Average Number	Standard Deviation	Average Number	Standard Deviation	Analysis of Variance
RHR decrease (beats / min)	3.48	5.26	9.76	3.12	P<0.05
growth in the vital capacity(ml)	166.32	4.71	345.7	2.66	P<0.01

It can be seen from table 3 that the decrease of RHR of students in the experimental group is greater than that in the control group, and the data of the two groups are statistically significant, indicating that table tennis system training plays a good role in improving students' mental reserve. In terms of vital capacity growth, the growth range of vital capacity of students in the experimental group is greater than that in the control group, and the data of the two groups have significant differences, indicating that table tennis system training has a very significant effect on promoting the growth of vital capacity of school-age children.

In conclusion, table tennis system training can effectively improve the cardiopulmonary ability of school-age children.

4. CONCLUSIONS AND SUGGESTIONS

4.1 Conclusion

Table tennis has a significant effect on preventing obesity and improving cardiopulmonary function in school-age children, but it has no significant effect on promoting their height development.

Long term table tennis among school-age children may lead to uneven distribution of physical strength and abnormal development of spinal curvature. The overdevelopment of clapping hands may also lead to unbalanced development of the human body.

4.2 Recommendations

Table tennis has certain advantages in promoting the physical health of school-age children, but long-term systematic table tennis training may have an adverse impact on the physical development of some school-age children. Therefore, table tennis can not be used alone to intervene the physical health of school-age children. In practical application, we must balance the load of the whole body as much as possible according to the actual situation, or choose other sports to carry out targeted auxiliary training for the aspects adversely affected, so as to make the whole body development tend to balance and truly achieve the goal of strengthening physique.

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Problems and Prevention of Fly-ash Autoclaved Aerated Concrete

Jun Wu[1], Aili Guo[2]
[1]School of urban construction, Yangtze University, Jingzhou 434025, Hubei, China;
[2]Beijing Building Materials Inspection and Research Institute Co., Ltd., Beijing 100044, China;

Abstract: The main constituent materials in fly-ash autoclaved aerated concrete are cement, lime and fly ash, which is a new environmental protection wall material. However, in the actual use of fly-ash autoclaved aerated concrete, cracking often occurs, and it will lead to the collapse of the wall in serious cases. Therefore, it is necessary to explore the problems existing in fly ash autoclaved aerated concrete and find prevention methods.
Keywords: Fly-Ash Autoclaved Aerated Concrete; Lime And Admixture

1. INTRODUCTION

The research on fly-ash autoclaved aerated concrete in China began in the 1960s. Because China consumes a lot of coal and produces a lot of fly ash every year, such fly ash will have a certain impact on the environment. If it is not used, it will also cause the problem of resource waste. The research and production of fly ash autoclaved aerated concrete can not only promote the utilization of fly ash, but also reduce the impact of fly ash accumulation on the environment. However, compared with other concrete, fly ash autoclaved aerated concrete often has the problem of cracking in the use process, which seriously affects the use effect of this kind of concrete, so it is necessary to discuss this problem.

2. PROBLEMS IN FLY ASH AUTOCLAVED AERATED CONCRETE

2.1 CRACKING IN PRODUCTION

Raw materials will have a direct impact on the quality of concrete itself. Therefore, if the control of raw materials is not good enough, it will lead to cracks in concrete in the process of concrete production. First, hydration plays a very important role in the production process. Under hydration, cement will produce various hydrated substances, such as calcium silicate. At the same time, calcium hydroxide will be produced when these hydrated substances are produced, and the content of calcium hydroxide will directly affect the quality of concrete, which can be said to be the key influencing factor. [2] In the production process, if the control of raw materials is not in place, the content of substances such as calcium hydroxide in the whole fly ash autoclaved aerated concrete will be in an abnormal state, resulting in a certain change in the overall structure of fly ash autoclaved aerated concrete. It will lead to a decline in the strength of fly ash autoclaved aerated concrete and eventually cracks. Second, improper production process operation will also lead to cracking. For example, improper control of water material ratio in the production process will lead to cracking.

2.2 CRACKING DURING USE

Additives are one of the important factors affecting the quality of concrete. For example, the addition of fly ash will lead to the uneven evaporation of water in fly ash autoclaved aerated concrete; For another example, some materials will cause the concrete itself to have a higher coefficient of expansion. If the expansion coefficient of fly ash autoclaved aerated concrete is high, there will be more severe problems of thermal expansion and cold shrinkage. Therefore, if the external temperature changes significantly, cracks will appear in the concrete. At the same time, compared with other concrete, the shear strength of this concrete is insufficient. Under normal circumstances, the moisture in the concrete will lead to the cracking of the concrete. This is because fly ash autoclaved aerated concrete generally has a large surface area. In the process of use, the curvature of the curved surface of fly ash autoclaved aerated concrete tends to become larger because of the continuous evaporation of its internal water. Under the influence of tension, the water in fly ash autoclaved aerated concrete will gradually dissipate, resulting in cracks in fly ash autoclaved aerated concrete.

2.3 CRACKING CAUSED BY EXTERNAL FACTORS

Calcification will also lead to cracking of the concrete. During the use of the concrete, it will react with the moisture in the air and other substances to produce tobermorite, which will lead to the influence of prestress on the fly ash autoclaved aerated concrete and cracks on its surface. Secondly, the lack of frost resistance will lead to cracks, especially those fly ash autoclaved aerated concrete with higher moisture. [3] In addition, because the crack of fly ash autoclaved aerated concrete is on the surface, it will lead to more water entering into it. The increase of water will further reduce the frost resistance of fly ash autoclaved aerated concrete and be more prone to cracks. In addition, in the actual construction process, if the relevant construction operation is unreasonable, the concrete structure will be damaged, resulting in cracking.

3. PREVENTION MEASURES FOR CRACKING OF FLY ASH AUTOCLAVED AERATED CONCRETE

It is very important to prevent the cracking problem in the concrete, which will not only affect the service life of the concrete, but also affect the future development of the concrete.

3.1 ACTIVATION OF RAW MATERIALS

In aerated concrete, lime can promote concrete to produce calcareous materials. In this reaction process, whether lime is evenly dispersed in fly ash autoclaved aerated concrete will have different effects on the hydrothermal synthesis reaction. Therefore, it is necessary to select medium speed lime for the selection of lime, and when pouring lime, it is necessary to increase the pouring time, control the amount of lime, and maintain the temperature of the internal structure by improving the thermal insulation facilities, so as to keep the temperature uniform and speed up the calcium silicon reaction. [4] Fly ash is a kind of glass composed of silicon, aluminum and other elements. It has good activity, but the conditions for the activation of such activity are more stringent. Therefore, it is necessary to increase the dispersity of fly ash in autoclaved curing so as to enhance the reaction ability of fly ash before positive pressure curing. This can prompt the formation of more calcium silicate gel from the fly ash at the beginning because of hydration in advance, thus promoting the formation of Tobey mullite. Finally, the hydrate phase and colloidal phase in fly ash autoclaved aerated concrete are reasonably matched. Therefore, after the activation of lime and fly ash, the early strength of fly ash autoclaved aerated concrete can be improved, so as to inhibit the occurrence of cracking.

3.2 ADDING FIBER

The method of adding fiber to concrete is very common, but the method of adding fiber to aerated concrete is still rare in China, and there are few relevant studies. Usually, the fibers in fiber reinforced concrete tend to show the characteristics of random distribution, but also have a certain degree of orientation. In addition, materials such as fiber reinforced concrete are multiphase, multicomponent and discontinuous materials. On the basis of different construction methods, fiber shapes and surface properties, the fibers in concrete will show different forms of distribution, resulting in the complexity of fiber mechanism. [5] Although a large number of researchers have studied since the emergence of fiber reinforced concrete, there are disputes on this theory, which can not fully reflect the essence of fiber reinforcement. Among the many viewpoints, the viewpoint with greater unity points out that because the fiber is mixed into the concrete, the fiber will have a reinforcing effect on the body of the concrete itself, and promote the strength and corrosion resistance of the concrete, so as to enhance the service life of the concrete. For fiber reinforced concrete, fiber can absorb the energy generated by cracking when the substrate cracks, so as to hinder the extension of cracks in the substrate. The preventing effect of fiber on cracking is mainly related to the properties and types of fiber itself.

3.3 FILLING ADMIXTURE

Fly ash autoclaved aerated concrete structure is a porous structure, in which the void volume can reach about 80%, and it is very easy to absorb water after encountering water. Some researchers believe that the water absorption of fly ash autoclaved aerated concrete is closely related to the uniformity and size of pore size distribution in its own voids and the connectivity of voids. The function of the number of pores, the number of connecting pores in pores and the pore structure and distribution is the diffusion coefficient. Therefore, if the porosity is small and the number of connecting pores is small, the diffusion coefficient will be lower. [6] After adding admixtures, the strength of fly ash autoclaved aerated concrete will increase; the drying shrinkage value will decrease, and the carbonation coefficient will increase. There are two main reasons for this situation: first, after adding admixtures and aluminum powder aerating agent, the pore structure in fly ash autoclaved aerated concrete will be improved to promote the uniform distribution of pores. At the same time, the pores will be refined; the number of large pores and connecting pores will be reduced, and the partition wall between pores will be thicker. This can reduce the evaporation of water, inhibit the diffusion of carbon dioxide, and then improve the compactness of fly ash autoclaved aerated concrete. Second, the gap in the through hole is cut off, which can restrict the entry of water into the through hole. Therefore, adding admixtures to fly ash autoclaved aerated concrete can effectively prevent cracking.

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Path Analysis on integrating sports psychology into College Physical Education

Qiaoying Yang
GuiLin Medical University, Guilin, Guangxi 541199, China

Abstract: With the continuous development of physical education, the content of physical education in colleges and universities has not only been limited to physical quality and sports skills, but also began to pay attention to the educational content of students' sports cognition, psychological experience and will quality. The integration of sports psychology can play a certain guiding role in the current students' sports ideological education. Therefore, in view of the sports exclusion psychology caused by gender differences and students' fear of sports in college physical education, college teachers need to deeply analyze the specific path of integrating sports psychology into college physical education in combination with sports psychology elements.
Keywords: College Physical Education; Sports Psychology; College Student

1. INTRODUCTION

Sports psychology is a branch of psychology and belongs to the category of applied psychology. It mainly analyzes the characteristics and laws of human psychological activities during sports. The object of physical education teaching in colleges and universities is college students with mature physiological development, and their psychological quality has developed to a certain level accordingly. Therefore, college physical education teachers should integrate sports psychology into physical education teaching to help students deal with various psychological problems they encounter in the process of sports.

2. SPORTS PSYCHOLOGICAL PROBLEMS IN COLLEGE PHYSICAL EDUCATION

2.1 Exclusion Caused By Gender Differences In Colleges And Universities

In the process of physical education teaching in colleges and universities, most of the students are between the ages of 19 and 22. Various organs of the body have been relatively mature and have the ability to deal with more intense physical activities in colleges and universities. However, due to gender factors, there are some differences between male and female students in sports status and intensity. When carrying out sports activities, girls will inevitably be affected by their personality and self physical energy conditions, resulting in greater psychological pressure in participating in sports teaching activities, and even some female students reduce their interest in learning and produce exclusion psychology, thus affecting normal sports teaching activities. Therefore, there is an urgent need for college teachers to integrate sports psychology into physical education teaching and solve the psychological problem of students' exclusion of sports. [1]

2.2 Students' Fear Of Sports Psychology

Physical education is a basic activity in college education, and sports psychology is an important content in college physical education. At present, when most college students participate in physical education activities, they are prone to tension and anxiety in the face of high-intensity sports. For example, they will be nervous and anxious during competitive competition, and their limbs will be weak, which will affect the normal progress of physical activities. Even when some students come into contact with sports equipment, they will form bad self suggestion that they can't use sports equipment better, which will lead to their fear and inferiority towards sports equipment, so that they can't play their normal level, thus affecting the quality of physical education teaching.

3. THE SIGNIFICANCE OF INTEGRATING SPORTS PSYCHOLOGY INTO COLLEGE PHYSICAL EDUCATION

In sports competitions, the key to the success of many sports athletes with the same level of strength lies in the level of psychological quality. Athletes with strong psychological quality can meet the challenge with a strong psychological state, while athletes with poor psychological quality are more likely to lose the game. This proves that sports psychology is of great significance in sports training and competition preparation. In college physical education activities, the integration of sports psychology can not only improve students' physical quality, but also exercise their psychological quality and shape students' healthy psychology. Secondly, in sports activities, the integration of sports psychology can enhance students' sense of teamwork and cultivate students' sports self-confidence, so as to fully mobilize students' enthusiasm for sports. [2]

4. APPLICATION STRATEGY OF SPORTS PSYCHOLOGY IN COLLEGE PHYSICAL EDUCATION

4.1 To Strengthen Sports Psychology Teaching By Using Pre Competition Psychological Suggestion Method

In view of the psychological problems of college students in the process of physical education learning, taking tennis in college physical education as an example, college physical education teachers need to pay attention to the dual education of students' physical quality and psychological quality, especially the training of students' psychological factors. Therefore, in view of the students' psychological problems in the current college sports, teachers can use the pre game psychological suggestion method to improve students' psychological literacy and enhance students' self-confidence in tennis competition.

First of all, before the tennis match, teachers can adopt psychological induction methods according to the personality and psychological characteristics of different students to stabilize the psychological state of participating students. For example, participating students can be organized to play mini games to distract their attention, or get familiar with the venue and tennis equipment in advance to reduce the strangeness with the venue. Teachers can also play fast-paced music to create a relaxed competition environment for students. At the same time, teachers also need to give students positive encouragement to reduce the burden of competition for students. Secondly, before the tennis match, students can use their own thinking control method to transfer or alleviate their tension and anxiety. For example, the participating students can cheer on each other and enhance their confidence in the game by gaining the trust and reliance of their teammates. Students can also take the initiative to analyze the strengths and weaknesses of the players on the field, develop their strengths and avoid weaknesses, and enhance their confidence in the game.

4.2 To Strengthen Students' Image Psychological Training By Using Various Ways

In sports training, teachers need to use a variety of ways to strengthen students' image psychology and help students strengthen competition psychology. Taking tennis teaching as an example, teachers can ask students to keep silent, rehearse tennis in their mind, recall the essentials of playing ball, get familiar with tennis actions through repeated representation and mind, integrate with the ball, and effectively improve students' attention firstly. Secondly, tennis is a sport with strong objective dependence and obvious antagonism. According to this characteristic, teachers can use the stimulation training method and simulation training method in psychology to strengthen students' basic skills of tennis. [3] For example, in the stimulation training method, teachers can use behavior stimulation method and sound stimulation method to strengthen students' adaptability. Specific teachers can repeatedly serve and receive the ball, so that students can quickly grasp the trajectory of tennis, so as to improve their sensitivity of receiving the ball. Teachers can also ask students to identify the source of sound according to the track of indoor tennis, so as to exercise students' sensitivity to tennis sound. In the simulation training method, teachers can formulate different tennis training schemes according to the strength of students' sports psychology, such as tennis simulation training in batches and setting tennis training forms with different difficulties, such as increasing the height of tennis railing and increasing the weight of racket, which will help to improve the effectiveness of students' tennis simulation training. [4]

4.3 To Improve Students' Adaptability By Using Game Training Method

The excellent sports psychological quality of college students is determined by students themselves on the one hand, and guided by teachers on the other hand. Therefore, college physical education teachers play an important role in students' sports psychological assistance. Teachers need to improve students' adaptability first in order to ensure the healthy psychological quality of students' physical exercise. Taking tennis teaching as an example, in the process of tennis training, college physical education teachers can first adopt the way of "generally casting nets and focusing on training", which should be treated equally, but also different. The tennis sports that teachers are required to carry out without discrimination need to ensure that all students can master [5]. The difference requires teachers to pay attention to individual students with poor physical or psychological quality, especially those with low psychological quality. They should first carry out psychological counseling and tennis training to ensure that the tennis level of individual students is almost the same as that of most students. In this regard, college teachers need to take specific psychological methods to improve students' psychological adaptability, such as developing game teaching methods and using a variety of tennis games to improve students' learning enthusiasm and weaken students' psychological problems of tension and anxiety. Secondly, when using the game training method to carry out tennis teaching, college teachers can require students to hold a racket and control the stability of the ball by themselves. The teacher with the largest number of hits can reward a tennis ball or a beautiful gift to improve students' learning enthusiasm for tennis. [6] In addition, teachers can also set up activities such as group cooperative game method and personal tennis creativity to help students maintain high learning enthusiasm, so as to realize the perfect integration of sports psychology and physical education. [7]

The excellent sports psychological quality of college students is determined by students themselves on the one hand, and guided by teachers on the other hand. Therefore, when carrying out physical education, college physical education teachers should actively mobilize students' enthusiasm for sports. They can cultivate students' psychological adaptability and improve the quality of physical education teaching through game training. Taking tennis teaching as an example, in the process of tennis training, college physical education teachers can first carry out tennis game training in the way of "generally casting nets and focusing on training". Through the use of a variety of tennis games, it can improve students' learning enthusiasm and weaken students' psychological problems of tension and anxiety. Secondly, when using the game training method to carry out tennis teaching, college teachers can improve students' learning enthusiasm for tennis through some rewards, such as requiring students to hold rackets and control the stability of the ball by themselves. The teacher with the largest number of hits can reward a tennis ball or a beautiful gift. In addition, teachers can also set up activities such as group cooperative game method and personal tennis creativity to help students maintain high learning enthusiasm, so as to realize the perfect integration of sports psychology and physical education teaching.

5. CONCLUSION

College students are adults; their physical development has matured; their psychological quality has also developed to a corresponding level; their imagination has also developed to a certain height, and the content of various image reserves is very rich. These situations provide the feasibility and necessity of integrating sports psychology into physical education teaching in colleges and universities. In addition, sports psychology also increases the content of physical education teaching in colleges and universities, solves the psychological problems of college students, and improves students' self-confidence. Therefore, colleges and universities should actively study the methods and means of integrating sports psychology into physical education teaching, and use diversified sports psychology techniques to promote the development of physical education teaching activities in colleges and universities.

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Research On the Incentive of Scholarship Under the Impact of High Funding in Colleges and Universities -- Taking Ningxia X School as An Example

Chunchun Yang
Xinhua College of Ningxia University, Yinchuan, Ningxia Hui Autonomous Region, 750021, China

Abstract: University scholarship is not only an important means to encourage students to study hard and work hard, but also a powerful way to create a good style of study in Colleges and universities, and an important grasp of Ideological and political work in Colleges and universities. In recent years, the state has made great efforts in subsidizing the poor students in Colleges and universities, almost realizing the full coverage of the poor students. In contrast, the school scholarship is obviously weak in the material level. Taking Ningxia x school as an example, this paper studies and analyzes the current incentive strength of university scholarship, and puts forward methods and ideas for constructing an all-round incentive system, better stimulating students' learning enthusiasm, realizing the construction and management of excellent style of study, and enriching the content of Ideological and political education.
Key words: University scholarship; Incentive strength; High subsidy; Study style construction and management

1.INTRODUCTION

Ningxia x school is a full-time regular undergraduate college approved by the people's Government of Ningxia Autonomous Region and confirmed by the Ministry of education. There are more than 6000 students in the school. At present, the tuition is about 16000 to ¥20000 per student per year. However, in addition to setting up scholarships with self raised funds, the school has little financial support and social funds to reward students. The scholarship source is single, the amount is limited, and the coverage area is small. At the same time, in recent years, in order to get rid of poverty, the state has further expanded the strength and scope of funding for colleges and universities. At present, the state is in the period of consolidating the achievements of poverty alleviation. The predictable education funding will not be significantly reduced, and high funding will exist in Colleges and universities for a long time. Ningxia is also a remote area in the northwest, most of which are relatively poor. Through the identification of family economic difficulties, a "poor student bank" has been established. Students in the library account for about 50% of the school students. Under the impact of high funding, University Scholarships no longer have strong incentives, prone to negative psychology, if the guidance is not appropriate, or even the idea of "get for nothing", the construction and management of style of study may be greatly affected.

2. BASIC SITUATION OF SCHOLARSHIP AND SUBSIDY OF NINGXIA X SCHOOL

2.1 Basic situation of Ningxia x school scholarship

2.1.1 Scholarship evaluation criteria and proportion

Ningxia x school scholarship evaluation once a year, set up three grades, respectively reward ¥1500, ¥1000, ¥500. The proportion of the students selected accounted for 4%, 6% and 12% respectively. The total amount of funds is about one million yuan. Assuming that the number of students is a, the total amount of scholarship of Ningxia x school can be calculated as: a * 1500 * 4% + A * 1000 * 6% + A * 500 * 12% = 180A. Through calculation, the total scholarship fund of Ningxia x school is ¥180 per student per year. Moreover, according to the calculation formula, the total funds of the three grades are the same, which are all ¥60, but the reward amount and reward proportion have been adjusted.

2.1.2 Scholarship evaluation conditions and procedures

Ningxia x school has a set of relatively fair, just and open selection methods and procedures. As long as it abides by the school rules and regulations, students who have not failed in the course can participate in the evaluation. The evaluation is based on the comprehensive evaluation results, mainly on the course examination results and extra-curricular moral education scores. Among them, the extra-curricular moral education score is replaced according to the school's "second classroom education score", accounting for 15% of the comprehensive evaluation score, and the highest score after conversion is no more than 18 points. The scholarship evaluation of Ningxia x school is in the charge of the scholarship evaluation group headed by the Secretary of the general branch of each department. It adopts the four-level audit of class, Department, student office and school, and the three-level publicity of class, department and school. In the evaluation process, the list of members of the evaluation group, the evaluation process and the evaluation results are all open and widely subject to supervision. After years of efforts, Ningxia x school scholarship evaluation fairness has been recognized by all students, more than three years in a row. In addition, one of the basis for the selection of "three good students" and "excellent student cadres" is the scholarship. Students are eligible to participate in the evaluation only after they have won the scholarship" "Three good students" and "excellent student cadres" are awarded according to the standard of ¥200.

2.2 Basic information of funding

2.2.1 Funding standards and proportion

The X school funding in Ningxia mainly comes from financial allocation, which includes two aspects: first, the support based on academic achievement, including national scholarship and national incentive scholarship. The amount is ¥8000 and ¥5000 respectively. The proportion of funding is 1 ‰ and 3.5%; Second, the support of academic achievement is not considered, including national grants and award-added funds. The financial aid is divided into two grades: ¥5000 and ¥2000 , with the proportion of 30% selected and 20% of the subsidy.

Ningxia x school grants are selected once a year, and 6 to 7 national scholarships are selected; About 250 people are selected for national inspirational scholarship, with a total of 1.3 million yuan. The state grants are awarded about 2000 students a year, and the state grants the funds of ¥3300 per year. The subsidy fund is used to support the students who have not received the financial aid in the poor student bank, and realize the full coverage of the "poor student bank" for the students. The school has formulated the funding amount of ¥1000 to ¥2000 according to the actual situation.

2.2.2 Conditions and procedures for funding

According to the policies of the Education Department of the state and the autonomous region, the national scholarship directly refers to the student's achievements, the national inspirational scholarship refers to the academic achievements on the basis of family poverty, and the national grants and grants are mainly based on family conditions, regardless of academic achievements. The basic procedure of "personal application, class evaluation, department evaluation and school approval" is adopted. The basic process is as follows: the students submit their applications, the class review group makes a preliminary evaluation, the Department funding Working Group reviews, the Department publicity, the student department reviews, the school review meeting deliberates, the whole school publicity, and the final funding list is determined after no objection.

2.3 Difficulties and problems in the process of scholarship incentive of Ningxia x school

2.3.1 The source of funds is limited, and the amount and coverage are small. Ningxia x school scholarship all comes from the school self financing, the state has no financial support, almost no social capital investment, school students have no channel to apply for other types of scholarship. Due to limited funds and single source, the amount and coverage of scholarship are limited.

2.3.2 The example propaganda is insufficient, and the incentive potency is not fully reflected. Ningxia x school scholarship pays more attention to the selection process and results. After the evaluation, the example publicity is not timely, the intensity is not enough, there is no large-scale, systematic follow-up publicity, and the sense of honor of the scholarship is not reflected.

2.3.3 Education guidance is not enough, students value material incentives. Ningxia x school scholarship education guidance is not enough, students lack the understanding of the purpose, procedure and significance of the scholarship, and do not organically combine the scholarship with personal long-term development, which is not conducive to the cultivation of good behavior habits and moral quality [2]. The role of benchmarking and role models of award-winning students is not fully reflected. At the same time, the school lacks attribution guidance for students' negative thoughts, neglects achievement motivation and gratitude education, and students pay more attention to material motivation, neglects sense of honor and achievement.

2.3.4 The incentive system is not complete, and students' expectation of winning awards is not high. In the early stage of Ningxia x school scholarship evaluation, there is no guidance education to stimulate students' self motivation, determination to become talents and forge ahead. In the later stage of scholarship evaluation, there is no incentive mechanism based on scholarship. Scholarship incentives pay more attention to the selection process and results of incentives, incentive system is not complete, most students want to get scholarships expectations is not strong.

3. ANALYSIS ON THE INCENTIVE STRENGTH OF SCHOLARSHIP IN NINGXIA X SCHOOL

Based on Fromm's expectation theory, incentive strength = potency × Expectations. That is to say, the incentive strength of scholarship = the evaluation of the students' satisfaction after obtaining the scholarship × Students think it is possible to get a scholarship. If students think that the easier the scholarship is to be obtained, the greater the achievement is, and the more satisfaction can be obtained, then the scholarship can stimulate students' learning enthusiasm and keep learning enthusiasm for a long time.

3.1 Scholarship evaluation

The value of scholarship is the evaluation level of students' satisfaction after obtaining the scholarship, which can be roughly composed of three aspects: first, the actual reward. That is, awards, certificates and prizes obtained through scholarships; Second, the added value of scholarship. Third, scholarship can promote the achievement of personal goals.

3.1.1 Actual reward income

According to the basic situation of scholarship and subsidy of Ningxia x school, the total amount of scholarship is only ¥180 per student per year, compared with the scope of scholarship and the national grants not linked to performance, while the amount of scholarship alone is as high as ¥1000 per student, which is one fifth of the total amount of grants. From the perspective of personal capital income, the highest level of scholarship is only ¥1500, while the highest level of grant is ¥5000, the lowest level of scholarship is ¥500, and the lowest level of grant is ¥2000. There is almost no comparability in terms of amount.

3.1.2 Added value

The value added to the scholarship includes two aspects: first, the recognition, honor and achievement brought by the scholarship; Second, the qualification of other achievements obtained through scholarships. For example, after obtaining the scholarship, you can participate in other awards such as "three good students" and "National Scholarship" on the basis of this. At present, the work of example publicity and education of Ningxia x school after the scholarship is obtained is relatively lacking, and there is hardly a comprehensive model publicity work. The power of example has not been highlighted, and the students' recognition and honor of scholarship are not enough. After obtaining the scholarship, the other channels of selection based on the scholarship are not enough. The amount of national scholarship is high, but the number of places is too small. In some departments, students on four grades compete for only one quota., and even some majors have no places. Except for the national scholarship, Ningxia x school only has "three good students" and "excellent student cadres" selected on the basis of the scholarship. The award amount is only ¥200, and the added value after winning "three good students" and "excellent student cadres" is lower, and there is hardly a higher level of evaluation. In addition, due to the development of social and cultural, people began to look directly at poverty. Many students no longer think it is "shameful" to obtain the funding, the negative effect of the subsidy is weakened, and more students pay more attention to the actual income.

3.1.3 Scholarship can promote the achievement of personal goals

Different students have different values and pursue different goals. In order to enhance the incentive of scholarship, we should promote the organizational goals and students' personal goals. Only when the organizational goals have positive significance for the realization of students' personal goals, can they produce positive valence.

Although Ningxia x school scholarship has a positive role in promoting the realization of personal goals, it is only ¥1500 at the highest level of fund acquisition, which is obviously weaker than ¥5000 and ¥2000 of grants. At the value-added level, the publicity and education of role models are relatively lacking, and the students' sense of recognition and honor of obtaining scholarships is not enough. Compared with the high amount of funding from the school, there is still a lot of room for improvement.

3.2 Evaluation of scholarship expectation

The expected value of scholarship is the subjective judgment of the probability that students think they will get the scholarship and meet their needs. The following will be described from the probability of obtaining and the probability of meeting the needs.

3.2.1 Probability of scholarship

The expected value of scholarship is the possibility that students think they can get, which is greatly influenced by students' subjective factors. While guiding students to work hard, we should strengthen students' understanding of the objective law of scholarship, correctly estimate the possibility of scholarship, and establish the correct goal. The goal itself has an incentive effect [1]. Through the conditions and procedures of scholarship evaluation in Ningxia x school, there are strict conditions and fair procedures for scholarship evaluation. In order to get the scholarship, in addition to no discipline violation, no failing courses and other conditions, the comprehensive evaluation results need to be at least in the top 22% of the class (Major), the probability of the first two grades is only 10%, and the probability of the first grade is only 4%. Compared with 30% of other famous universities in Ningxia, the selection rate of scholarship is 50%, and the probability of scholarship is low.

3.2.2 Probability of scholarship meeting needs

The needs of scholarship include spiritual needs and material needs. On the spiritual level, scholarship is a sense of recognition, honor and achievement. Because x school in Ningxia only awards scholarships in the academic aspect, even if the scholarships are lack of publicity and model mining, the probability of scholarships meeting students' recognition of their studies, especially their academic achievements is still high. On the material level, compared with the consumption level of the school location, the maximum reward of ¥1500 for scholarship is only one month's living expenses of students, which is a drop in the bucket compared with the tuition fee of ¥16000-20000. The probability of scholarship meeting students' material needs is low.

To sum up, the incentive strength of scholarship = the potency of scholarship × Expected value of scholarship = (actual reward income of scholarship + added value of scholarship) × F (the probability of scholarship obtaining, the probability of scholarship meeting the demand), and the probability of scholarship obtaining and the probability of scholarship meeting the demand are positively correlated with the overall probability. Because the actual reward price of Ningxia x school scholarship is not high, the added value price of scholarship is not high, the probability of scholarship is not high, even if the scholarship can meet part of the demand, the incentive strength of scholarship is generally weak.

4. METHODS AND IDEAS TO GIVE FULL PLAY TO THE INCENTIVE ROLE OF SCHOLARSHIP

4.1 Increase the sources of funds and enrich the material incentives of scholarships

In line with the principle of "rewarding excellent, encouraging medium and stimulating poor", schools should actively broaden the sources of funds, actively apply for state financial support, actively absorb more social funds and increase the sources of funds. The proportion of scholarships should be set scientifically to avoid the negative effect of weak incentive. Improve and enrich the material incentive of scholarship. By setting up a variety of scholarship projects, increasing the coverage area of scholarships, increasing the amount of scholarships, and making exquisite and meaningful medals or prizes, we can make scholarships more attractive in terms of material, and guide students to have healthy competition.

4.2 Strengthen the ideological construction and enhance the spiritual incentive of scholarship

The incentive function of scholarship is not only reflected in the material aspect, but also reflected in the honor, achievement and spiritual satisfaction of the scholarship. It is a kind of affirmation of the school for students' learning and personal performance at a specific stage. Schools should strengthen students' ideological construction, promote students' understanding of scholarship through publicity and education in the early stage of award evaluation. We should guide the negative learning and award-winning thoughts to stimulate the students' inner motivation. After the award, through the class meeting, sharing meeting, commendation meeting, model publicity and so on, we can enhance the sense of honor and satisfaction of the award-winning students, and enhance their evaluation of the scholarship validity.

4.3 Establish a fair system to highlight the guiding role of scholarship. We should strengthen the construction of fair system, establish a direct link between making efforts to achieve good results and winning awards, so that students can "achieve good results and get scholarships". Through the establishment of scholarship fair system, the incentive and guiding role of scholarship is highlighted.

4.4 Make overall and coordinated arrangements, and reasonably build a "poverty alleviation", "wisdom support" and "ambition support" funding system

Financial aid can stimulate learning enthusiasm and improve students' academic performance [4]. To help the poor, we must first support our will and help our wisdom. Within the scope of the system, on the basis of coordinating the construction of the funding system and solving the urgent needs of students' life, the funding should be classified and managed in the "poverty alleviation", "support for wisdom" and "support for ambition", and reasonable arrangements should be made to introduce individual outstanding scholarships similar to "support for wisdom" and "support for ambition" scholarships. We should build a reward and subsidy system with the organic integration of "reward, assistance and loan". Guide students from "poverty type" to "ability type" and "development type".

Scholarship work in Colleges and universities is an important entry point of Ideological and political work in Colleges and universities, and a strong pillar of the construction of the style of study in Colleges and universities. Through the "award, help, loan" organic integration of the reward and funding system, to build an all-round incentive system, help the poor and educate people, cultivate a good style of study, and enhance students' gratitude and responsibility spirit.

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The Connotation of Ancient Chinese Literature from The Perspective of Confucian Culture

Zhengtian Mao[1], Ningyu Jia[2]
[1]College Of Arts, Xinyang University, Xinyang 464000, Henan, China;
[2]School Of Literature And New Media, Yangtze University, Jinzhou, Hubei 451199, China

Abstract: As the mainstream of Chinese traditional culture, Confucian culture shapes the character of Chinese culture. In the context of Confucian culture, the ancient Chinese literary creation in any subject contains the theme, characters, thoughts, or genre form reflects in such aspects as closely associated with the Confucian culture, embodies the Confucian culture of filial piety, loyalty, faith, self-denial, cultivate one's morality, suffering consciousness, golden mean, with the spirit, team cooperation, etc. The rich connotation of Confucianism. In-depth study of the cultural connotation of literary works under the influence of Confucian culture is conducive to today's literary creation and cultural construction.
Key Words: Confucian Culture; Literary Creation; Cultural Connotation; Moral And Ethical

1. INTRODUCTION

Confucian culture is a cultural school with Confucianism as its guiding ideology and the culture formed by it, which has had a profound influence on Chinese culture. Confucianism was created by Confucius during the Spring and Autumn Period (spring-autumn Period). It advocates blood relations, social achievements, self-cultivation and self-preservation, and moral reason. Its central ideas are forgiveness, loyalty, filial piety, fraternal respect, courage, benevolence, justice, courtesy, wisdom, and faithfulness.
By the rulers of the past dynasties, after thousands of years and unchanged, coupled with the inheritance and development of Confucius. Confucianism has become the mainstream of Chinese culture and promoted the development of Chinese culture. Many excellent ideological factors have been integrated into the blood of Chinese people and influenced their thoughts and behavior. The connotation of Confucian culture is mainly reflected in three aspects: first, in the aspect of national governance, it advocates the implementation of benevolent policy. In the process of governance, a country needs morality and ethics to be applied to the people. Benevolent governance is the spirit of humanitarianism, focusing on the people-oriented and people's livelihood issues is the foundation for the stable development of the society and the country. Second, in the aspect of personal cultivation, advocate human nature is good, self-denial. Mencius, the representative figure of Confucianism, put forward that human beings are kind and beautiful, but they need to be cultivated and experienced. Through their own pursuit and learning, they can realize personal growth and cultivation and achieve the realm of "self-cultivation" of Confucianism. Thirdly, in the social aspect, it advocates that education and teaching should be based on their aptitude, and that there should be no class in teaching. In the social ideology to advocate moral influence, the implementation of the rule of man.
Chinese culture is a broad and profound system. It is no accident that Confucian culture has survived and dominated the mainstream. In The history of China, Confucianism, Taoism, legalism, Mohism, Yin-yang school and other university schools of thought, have had a profound impact on Chinese culture. The daoism of inaction and naturalism, the legalism of innovation, the Mohism of "the world for all", and the yin-yang school's exploration of heaven and earth and natural science are all integral parts of Chinese culture. However, the unique charm of Confucian culture makes it stand out in the collision and communication with various cultures and become the mainstream of Chinese culture. It has been praised by Kings in past dynasties, but it is more a cultural choice in the conflict with various doctrines, and the result of the natural evolution of Chinese culture. Confucian culture is close to social life and has close and deep active relation with social life. Strong character of the Chinese nation, the Confucian culture advocated by the righteousness as the values, let more Chinese culture emphasizes the collective interests, the Confucian emphasis on cultivate one's morality, governing with, improve the mental state of the Chinese people, the Confucian emphasis on reality, not illusory afterlife, and for the good character of a great contribution to shaping of traditional culture, make Chinese culture more rational. Help the Chinese nation from the history, let the Chinese cultural origin long.

2. LITERATURE IS BOTH THE PRODUCT AND CARRIER OF CULTURE. WRITERS ALWAYS CREATE BASED ON THE SOCIAL AND CULTURAL CONCEPTS THEY UPHOLD. THEREFORE, THE LITERARY CREATION STYLE FORMED IN THE CONTEXT OF CONFUCIAN CULTURE AND ITS WORKS ARE CLOSELY RELATED TO CONFUCIAN CULTURE.

Confucian culture attaches great importance to morality, and puts forward the three cardinal principles and five constant principles. It requires individuals to follow the social order and observe the etiquette norms, and cannot violate the harmony between people. Therefore, individuals must cultivate their morality and pay attention to the perfection of personality. Literature is an aesthetic art and the expression of individual emotional and psychological requirements. In the view of Confucianism, such individual emotional and psychological requirements should be unified with social ethics and moral norms, thus forming Confucian aesthetics. One is harmonious beauty. As Confucius believed, true beauty is the mutual love between people -- the perfect realization of the supreme principle of "benevolence" in individual and group life. "The use of ceremony, harmony is precious; The way of Kings is beautiful. "(The Analects of Confucius · Learning and") He also said, "Li Ren is beautiful." "The Analects · Liren" affirms the harmony and unity between individual and society, and emphasizes the beauty of hierarchical harmony between people. The second is to advocate the unity of "text" and "quality", and to carry the text. The perceptual form of beauty has its value and significance only when it expresses the content of "quality". The third is to attach importance to the social role of literature. "Poetry can be exulted, observed, grouped and complained" (The Analects of Confucius · Yang Huo). Respect poetry as scripture, lifting the status and role of literature to the utmost height.

Under this aesthetic view, the aesthetic value orientation of literary creation is to make aesthetics conform to the requirements of ethics as far as possible. Let the political ethics of Confucian culture become the driving force of literary creation, dominate the vigorous development of literary creation, thus forming the characteristics of Confucian literature. In terms of content, literary works must embody morality, benevolence and righteousness, propagate Confucian ethics, and play the role of optimizing customs, educating people and improving human nature. In form, Confucian culture advocates the beauty of harmony in social aesthetics, and a harmonious society is the highest aesthetic pursuit. It supports the wise and able to become Kings, and people live in harmony with each other and perform their respective duties to maintain social order. Literary works to reflect gentle and sincere, "music but not indecent, sorrow and not hurt" (" The Analects of Confucius · Eight yi "), such as Qu Yuan for "Li SAO", the heart is not angry, unable to resist, emotional expression incisively and vividly, not gentle and sincere, was criticized by Ban Gu and Yang Xiong, that violates the Confucian culture of the book of justice. Therefore, the works that propagandized loyalty, filial piety, benevolence and justice in accordance with the Confucian moral and aesthetic norms were well received. Under the influence of Confucian culture, literary creation gained internal driving force and flourished in the Chinese cultural context.

Accordingly, literary creation and its dissemination also promoted the inheritance and development of Confucian culture, and the two formed a good interactive relationship. Literature from creation to consumption is an organized social and cultural process, which cannot be restricted by certain social relations, but infiltrates social trends of thought, reflects social features, and directly or indirectly answers social problems. Therefore, literary creation and dissemination play an important role in promoting social culture. In the warring States period and the early period of the Western Han Dynasty, Confucian culture broke away from the temple identity and appeared academic debates. Jia Yi, a political theorist and litterateur, analyzed the faults of the Qin Dynasty, advocated the system of the Han dynasty, conveyed the thoughts of benevolence and justice, maintained unity with the Confucian culture, and responded to the development of social culture from the literary perspective. The Wei, Jin, Southern and Northern Dynasties were a period of great changes in social ideology and literature. Confucianism declined and metaphysics flourished. Metaphysics replaced Confucianism and became the mainstream of society. Under the influence of metaphysics, literature also began to consciously pursue the aesthetic characteristics of literature. Advocate the simplification of complex, concise language expression. A typical example is "New Sayings of The World", which is short in length and long in meaning. As a feeder of ideology and culture, metaphysics is not only the negation of Confucianism in the form of the Han and Han Dynasties, but also the logical development of Chinese ideology and culture with Confucianism as its core. Metaphysics and Confucianism are opposite to each other in theoretical form as well as in ideological content. And through mutual differentiation, promoted the development of Chinese traditional philosophy.

To the Ming Dynasty, the "seven sons of the Ming Dynasty" (including the first seven sons and the second seven sons) were dissatisfied with the corrupt government and the weak morale, and strongly opposed the popular taige style poetry and prose and the eight habits of "啴 slow and redundant, sameness". He insisted that "literary style must flourish in the Qin and Han dynasties and poetry must flourish in the Tang Dynasty", and demanded to return to the Confucian literature model and seek innovation by restoring ancient ways in order to save the flagging poetic style. Although restoring ancient ways is often criticized by people, it has a certain progressive significance in the history of Ming Dynasty literature and also has a great contribution to the social and cultural atmosphere. Such as "Romance of The Three Kingdoms", "Water Margin" and other works, adhere to the ethical and faith ideas. All of them are centered on moral ethics and the moral relationship between father and brother. But it did not affect his literary achievements, but created the peak of narrative literature. At the same time, it also strongly supports the inheritance of Confucian culture in people's thoughts.

Photograph echo, and social cultural ideological trend in the late Ming dynasty created a large number of rich mythology literary works, such as "journey to the west" aesthetic expression, enlightenment and deepening the self-knowledge of Confucian culture at that time, and in the qing dynasty, began to revive the elegant poetry, while also helped eight-part essays prevailed, but more important is a classic a dream of red mansions has given rise to great art, It brought Chinese literature to a new height. At the same time, it brought about the spectacle of literary communication. People in the streets talked about the Red Chamber, saying, "It is useless to talk about the dream of the Red Chamber, or to read all the poems and books." The embodiment of Confucian culture has also reached a new height, boosting the social atmosphere of showing off talent. Forming a new form of Confucian culture.

3. TO EXAMINE THE DEVELOPMENT OF ANCIENT CHINESE LITERATURE FROM THE PERSPECTIVE OF CONFUCIAN CULTURE, ALTHOUGH THERE ARE DIFFERENT CHANGES IN DIFFERENT PERIODS, CONFUCIAN CULTURE EVENTUALLY BECAME THE MAINSTREAM, AND THE RELATIONSHIP BETWEEN THE DEVELOPMENT OF ANCIENT CHINESE LITERATURE AND CONFUCIAN CULTURE HAS BECOME A SIGNIFICANT FEATURE OF CHINESE LITERATURE.

There is a very close relationship between Confucianism and ancient Chinese literature. Confucianism has not only influenced writers' creative consciousness and aesthetic concept, but also influenced various aspects of literature such as genre, theme, plot design and structure arrangement. All are permeated with the influence of Confucianism. Thoughts, feelings and standards for evaluating and judging things are all within the framework of Confucianism, and Confucian political ideals and ethical concepts are highlighted and promoted in literary creation.

3.1 Text to carry the road

As mentioned above, Confucian aesthetics requires that Confucian ethics be embodied in literary creation. Therefore, The Confucian culture has naturally become the writer's value orientation and the theme of literary creation.

From a creative point of view. Literary creation must first solve the problem of conception and theme expression. That is, in the creation process, when explaining problems, expressing opinions or describing life phenomena, through the whole content of the work expressed the basic point of view or the central idea. It contains two components: one is the main object or question the author describes and discusses, and the other is the author's views and comments on them. The former is the objective meaning contained in the material itself, while the latter reflects the author's subjective understanding of the material. When the two are united, they constitute the theme of the work. Thus, it is the fusion of objective life and subjective feeling and thought. Nature is deeply influenced by culture. In the context of Confucian culture, writers always choose themes and standardize connotations according to the frame of Confucian thought, so as to reflect the theme of Confucian culture.

Confucianism is rich in such thoughts as benevolence, righteousness, propriety, wisdom, holiness (faith), forgiveness, loyalty, filial piety and fraternal respect. Many literary creations have been developed around these themes, forming rich literary works expressing the above Confucian cultural views. It shows the close relationship between the theme of ancient literary works and Confucian culture. Confucian culture especially attaches great importance to order and human ethics, and attaches great importance to benevolence, justice, propriety, wisdom and faith, aiming to urge social progress. Ancient Chinese literature can be linked with Confucian moral values in the expression of life feelings and the shaping of characters. The self-perfection, the attitude of pursuing the ideal of life, and even the dissatisfaction with the feudal society expressed in the ancient literature works are the embodiment of Confucian culture to cultivate morality and govern the country. The influence of Confucian culture on the theme of literary works also promotes the transformation and development of literary works. From the general romanticism gradually developed to reveal the social reality, the expression of personal feelings. It is the embodiment of the spirit of Confucianism to use the world. Great realist works such as A Dream of Red Mansions were produced.

3.2 Stylistic compatibility

Literature is a reflection of a certain social life in the writer's mind. As an element of literary form, the formation of literary genre is ultimately adapted to the needs of a certain social life. With the development of social life and the deepening of human cognition activities, it is necessary for the emergence of literary genres suitable for reflecting the content of such life. The technical conditions and other factors formed in a certain stage of social development also affect the emergence and extinction of some literary genres. When talking about Greek art, Marx once pointed out that "any myth conquers, dominates and visualizes the natural forces by imagination and with the help of imagination. Therefore, as these natural forces are actually dominated, the myth also disappears". On the other hand, new social forms and technological development have spawned new literary genres. The evolution of literary genres is closely related to social culture. In this sense, combing the changes of ancient Chinese literary genres can also grasp the relationship between Confucian culture and the development of ancient Chinese literature.

The prose of the pre-Qin period reflects the consideration and attention of Confucianism on benevolent governance and the contention of a hundred schools of thought, thus achieving the literary style of prose. The common literary works in the Eastern Han dynasty are mainly fu, which sing praises of ritual and music culture, mainly lyric. The gradual change of Han Fu from li worship to lyric small fu has an important relationship with the development of Confucian culture. In the Tang Dynasty, Confucianism reached the height of the temple and was favored by the emperor, while the short and pithy poems also flourished. Ancient literary works are mainly used to express the subjective feelings of the authors, expressing their feelings through literary symbols and ordinary life. For example, Li Bai's poems are mainly self-perception, expressing the feelings of the heart and integrating Confucian culture in thought and psychology.

In addition to the unprecedented development of poetry themes originating from the pre-Qin Dynasty, the pragmatic tendency of Confucian culture also gave birth to the genre of romance novels, which soon became popular. Generally speaking, fu and poetry of qin and Han dynasties, literary theory of Wei and Jin dynasties, poetry and prose of Tang dynasty and Five Dynasties, parallel prose and song ci of Song Dynasty, Yuan opera, popular literature and novels of Yuan And Ming Dynasties were all influenced by the social background at that time, and their roots lie in the changes and development characteristics of Confucian culture at that time.

3.3 With ideas

The composition of literature is not simply a matter of skill, it is dominated by ideas and reflects the characteristics of social culture. The ancient Chinese narrative literature has two distinct characteristics, which reflect the characteristics of Confucian culture. One is the conflict between good and evil. Show the contest between good and evil in Confucian culture. Good and evil are a pair of moral categories. In the Confucian cultural concept, good is the moral quality that is affirmed and advocated, while evil is the negative morality that is denied and criticized. Confucian culture has a distinct attitude and is clear about right and wrong. In this context, literary works are almost completely counterpoint interpretation, such as dou E in "The Injustice of Dou E", dou E is virtuous and filial, representing good, fighting against evil forces and winning. Literary works are endowed with the responsibility of enlightenment by Confucian culture, and under the influence of this responsibility, the good side finally wins and the people can feel the expectation of victory in suffering. In The Orphan of Zhao, the good side is oppressed and destroyed by evil forces. Finally, the good side becomes strong and lets Tu An Jia be destroyed by the Orphan of Zhao. The just side wins.

The other is a happy ending. Most Chinese classical novels are presented as a kind of hidden circle, with happy ending or regression. For example, the broken mirror is reunited, the husband and wife are reunited, after hardships and dangers, family members are reunited, after suffering hardships, the final result is right, the gold is won, the dream comes true, or they are separated and separated, together and divided, divided and united, prosperity and decline, decline and prosperity. Not only that, some novel also constitutes the latent multizone round, for example by the eastern han dynasty between -- in the romance of The Three Kingdoms of wei, shu and wu, trine to another - the western jin dynasty, the three, triad is a narrative in the great circle, and contain the wei, shu and Wu Sanjia from start-up to the destruction of mutual confrontation and overlapping three medium round, As well as dong Zhuo, Yuan Shao, Yuan Shu, Lu Bu, Liu Biao and other small circles in a hurry, in this kind of circle and circle continue to set between the magnificent display of China's third century political and diplomatic strategy and war legend. Confucian culture has worship for the happy ending, and believes that the universe, society, history and life present a circular operation mechanism. The harmony between heaven and earth, the harmony between heaven and man, and the harmony between man and the natural universe are its ideal realm, and the union structure of narrative works corresponding to them is also its high artistic realm

3.4 For the sake of justice

It has a close relationship with The Confucian culture. Literary works depict characters in the Confucian moral code, pay attention to the noble moral character, the three cardinal principles and the Five constants, once as the protagonist, they should be regarded as moral models. In The Romance of The Three Kingdoms, Guan Yu, loyal, righteous and brave, became a "Saint of Guan". In the water Margin, there are 108 characters from Liangshan alone. In the limited space, Wu Song alone accounts for ten times, which is the "Ten Times of wu". Wu Song is also used as a vivid figure to interpret Confucian ethics and morals. In Strange Tales from a Chinese studio, the naming of characters reflects the characteristics of Confucian culture. In "Zeng Youyu", the characters are named zeng Xiao, Zeng Xin, Zeng Zhong, etc. There are similarities between the brothers in naming, and the character character, quality and other characteristics have an echo relationship. The characters named xiao in Strange Tales from a Studio are Hu Xiaoer, Zeng Xiao and Cheng Xiaosi. The behavior of the characters are filial and moral, the unity of fame and reality, the image moving.

In ancient literary works, the common people were favored by writers, and many ballads were mainly about the little people, reflecting the social reality through the happiness and sorrow of the people at the bottom. This literary phenomenon is dominated by the Confucian people-oriented thought, which holds that Kings should have the idea of "people are the most important, the country is the second, and the monarch is the least".

In addition, in the character image building, special attention to the character image of the opposition, the protagonist is a character with all good moral character, the villain is the incarnation of evil, so that the character character of the opposition, so that the image is clear, the theme is prominent, to achieve the text to convey the tao.

4. AS MENTIONED ABOVE, ANCIENT CHINESE LITERATURE DEVELOPED IN THE CONTEXT OF CONFUCIAN CULTURE AS THE MAINSTREAM OF CHINESE CULTURE, AND ITS WORKS REFLECTED RICH CONNOTATIONS OF CONFUCIAN CULTURE.

Filial piety. Filial piety is the most basic moral standard in Confucian culture, is the passport of the society of human relations, Confucian culture regards filial piety as the root of morality, whether the common people, scholars, the son of heaven should follow filial piety. Confucius said, "People are also filial and fraternal, but those who make trouble are rare." Filial piety is the norm for managing the state and society. As an individual, we should worship filial piety and cultivate our morality. "We should use our body to foster our parents" and "our body, hair and skin are not damaged by our parents, which is the beginning of filial piety." In our traditional culture, filial piety has always been attached importance to by rulers and ordinary people. To the Song and Ming dynasties and even the extreme development of a foolish filial piety, is still praised by the world.

Accordingly, filial piety is a universal theme and an important content in ancient literary works. For example, the injustice of Dou E reveals the foolishness of officialdom, which is full of social content, mainly focuses on Dou e's filial piety, insisting on protecting her mother-in-law even though she is tortured. Dou e gave her life to save her mother, so that readers praise. In the novel, Jo Is responsible for protecting an old man after His son, Chae Bae-sun, jellies in Beijing. In the then difficult environment, difficult to resist the disaster, after the death of her in-laws cut off long hair funeral. For ancient women, hair is very important, Zhao Wu Niang cut long hair is to fight the last strength of filial piety, touched the world. In the gallery of ancient literary figures, many vivid figures are associated with filial piety, which promotes the Confucian concept of filial piety with literature.

Self-denial and self-cultivation. Confucian culture focuses on self-abnegation and self-cultivation, and puts forward the idea of cultivating one's morality in order to improve one's family, govern the country and bring peace to the world. Confucian culture takes "home" as the longitude and longitude of the world. Home is the basic unit of society, and the country is the largest magnified home. And the individual is the element of home, only each element is perfect. The family is harmonious, prosperous and powerful.

Confucian culture believes that self-cultivation is the foundation of governing the country, and the foundation of self-cultivation lies in improving personal quality. Self-cultivation requires self-abstinence and becoming a gentleman. Confucius proposed that self-abnegation and self-cultivation, improving moral quality, is the basis of survival and realization of their own value. Self-denial and self-cultivation require people to resist temptation, hold on to their beliefs, defy difficulties and distinguish right from wrong. For example, there are two clues in Journey to the West: one is the way for the master and his apprentices to learn buddhist scriptures, and the other is the way for the master and his apprentices to cultivate their minds. Sutras are the cultivation of the mind, external cultivation of virtue, internal cultivation of the mind, the process of sutras is the process of self-cultivation, almost a fable.

Sense of crisis. The sense of anxiety is a typical feature of Chinese culture, which is embodied in the emotional level in Confucian culture and teaches people to maintain a sense of anxiety for life and the country. Whether it is a masterpiece such as A Dream of Red Mansions or a short poem, it is not difficult to find that the author of a dream of Red Mansions lived in the prosperous period of The Kang-Qian Dynasty, but thought that "the earth was so white and clean", while the pain of self-hurt, sorrow and longing for birth can be seen everywhere in his poems and poems. Du Fu's generous elegy, "Secure tens of thousands of rooms in the mansion and protect the poor people all over the world", is deeply worried about the social reality, but also a profound expression of humanistic feelings as a conscientious intellectual, and his strong sense of anxiety hits people's hearts. And Li Bai "will enter the wine" in "born my material will be useful, the daughter dissipated return", "Hard road" in "ride the wind and waves will sometimes, straight sail to the sea", bold and free and unrestrained in it is not to miss talent, the passage of time sigh and excellent thinking, is the thinking and exclamation of life. Su Shi, a literary hero of the Northern Song Dynasty, was relegated from his official career, excluded in the political strife, and worried about his family and country. He made incisive expression in his literary creation. As for Fan Zhongyan, he sang "The sorrow of the world first, the joy of the world after", which fully showed the philosophical thinking of a generation of literati worried about the country and people. A history of Chinese literature is a history of domestic and national feelings of literati.

Use the spirit of the world. Confucianism treats social life with a positive attitude towards life, encourages birth and integration into social life. This spirit of using the world is reflected in the literary creation, which not only shows the spirit of using the world of Confucian culture, but also reflects the author's thoughts and personality, with strong personality color. For example, in the poems of Li Bai and Tao Yuanming, they not only fully express their pursuit of life and the way of the world, but also reflect their unique personal character, which makes their works highly individual characteristics and full of appeal. In the long history of China's development, literary works have emerged in different genres and styles as times and dynasties change. But the expression of the spirit of yongshi is consistent. For the author, it expresses the ideal ambition of yongshi, actively pursues the ideal of life, and hopes to be appreciated by the king. To the common people edify sentiment, inspire life, love and embrace life more. The most typical works of fiction, such as "Warning the World Hengyan", "Yu Shi Mingyan", "Warning the World Tongyan", directly use vivid images to deduce life, just like art textbooks.

Doctrine of the Mean. The doctrine of the Mean, as the core essence of Confucian culture, exerts a profound influence on ancient literature, especially in tragic works, characters constrain themselves by reason and righteousness, and tragic stories pursue happy endings by giving people a sense of peace and peace. Through the struggle of loyalty and treachery and the struggle between the gentleman and the villain, the struggle results in a victory for justice. For example, in the narrow type of novels, most of the incorruptible officials or chivalrous people win and the treacherous officials are punished. However, there are also many tragic endings. For example, in Outlaws of the Marsh, many chivalrous men gathered in Liangshan and fought against the crafty sycophants, but they were persecuted by the crafty sycophants, and finally ended in tragedy. Under the influence of the doctrine of the Mean, ancient writers avoided sad endings, put forward higher requirements on the control of personal emotions, did not advocate emotional laissez-faire, emphasized "pleasure but not lewdness", and tried to obtain biochemical personality and spirit. Some of the novels also appear the resurrection of the dead, into a butterfly and other endings, also reflects the author's doctrine of the mean, expressed the sustentation of a better life.

Honesty and morality. In Confucian culture, fiduciary faith is the basic moral norm. "a gentleman is compared to righteousness" and "sacrifice one's life for righteousness" are its classical representations, which deeply influenced the ancient literature creation. For example, in The Orphan of Zhao, Tu An Jia slaughtered more than 300 people in zhao Dun's family, and sent people to search the only surviving Orphan of Zhao. Han Jue was dissatisfied with Tu An Jia's practice, and released The orphan of Zhao, resolutely committed suicide. Tu An Jia furious, ordered the domestic full term to half - year - old children take the lead. Gongsun pestle mortar, Cheng Ying to protect Zhao's orphan and newborn, assume a charge, a will his son. From the extreme confrontation between good and evil, the classic image of sacrificing one's life for justice was created and the spirit of sacrificing oneself for justice was publicized.

It had a profound influence on later generations. In the Qing Dynasty, Li Yu created the legend "Qing Zhong Pu", which almost made a textbook vivid interpretation of faith and morality, and shaped the image of loyalty and righteousness in the struggle with castration. Yan Peiwei learned to arrest the loyal man Zhou Shunchang, organize the masses to rescue. When yue Zhuan said that han Shizhong, a loyal minister, had been imprisoned, he was so enraged that he even began to beat the storyteller. He hated castrating the party and was almost the incarnation of loyalty and righteousness.

The concept of loyalty. The concept of loyalty is one of the important concepts of Confucian ideal society, which requires women to keep chastity, three obediences and four virtues. The Confucian culture considers women's loyalty to be the highest moral evaluation, and some reasonable elements of the Confucian concept of women's loyalty were seriously distorted when the concept of loyalty reached its climax in Neo-Confucianism. Had a great influence on literary creation. Dou E, Zhu Yingtai and other loyal and pure, far-reaching and touching vivid female images, just like the "Outlaws of the Marsh" with the concept of narrowness and loyalty graphic female images. A "water Margin" is the purgatory of women, all beautiful women are not loyal to the whore, the writer splashed ink, extremely render, vivid typical image, and loyal to the female is made caricature type processing, or ugly, or silly brainless. Fully stand in the patriarchal cultural perspective to understand the concept of loyalty, shaping women, the beauty and loyalty of women up against, although all the literary critics are still on the water margin female image building praise, the author thinks that the need from the dialectical materialism and historical materialism perspective profound analysis.

Team player. Team spirit is also the reflection of Confucian culture, the doctrine of the mean, people-oriented and harmonious in Confucian culture all embody the spirit of quitting the team. In terms of the relationship between the collective and the individual, team spirit requires the individual to obey the collective, the individual interests should be based on the collective interests, and the individual should do his best to serve the collective. The Confucian doctrine of propriety and righteousness has long been elaborated. Yan Yuan asked about benevolence, and Confucius said, "Renunciation and revulsion is benevolence", and then pointed out the specific practice of benevolence, "see no evil, hear no evil, speak no evil, and act no evil". Special emphasis is placed on meeting the requirements of propriety. The so-called "propriety" refers to the requirements of the national system and the norms of the existence of ethics. The behavior in line with "courtesy" means the behavior in line with the interests of the state and the collective. "Abnegation of self and return to courtesy" is to ask individual interests to compromise to collective interests, individual obedience to the collective. Mencius also emphasized the importance of team spirit, saying, "Favorable conditions are inferior to favorable conditions, and favorable conditions are inferior to harmony." Confucian culture takes family as the most basic culture, which is also the embodiment of team spirit. Chinese traditional culture attaches more importance to harmonious coexistence, emphasizing harmonious coexistence between people and nature and between people. These deeply influenced the creation of ancient Chinese literature, and the classic characters are all the results of team spirit. A Journey to the West is also about teamwork.

5.CONCLUSION

To sum up, Confucian culture is an important part of Chinese traditional culture and the foundation of traditional culture. Literary creation is based on culture, and it is also the creation and carrier of culture. In the context of Confucian culture, the ancient literary creation embodies the connotation of Confucian culture, whether it is subject matter, character creation, ideological implication or genre form. In-depth study of the cultural connotation of literary works under the influence of Confucian culture is conducive to today's literary creation and cultural construction.

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Discussion On the Path of Control Engineering Basic Teaching Reform Under the New Engineering Background

Wujun Zeng
College of Mechanical Engineering, Hunan University of Arts and Science, Wuling District Changde, Hunan 415000, China

Abstract: In order to make the control engineering basic teaching reform strategy more perfect, this paper first expounds the main content of the control engineering basic teaching reform under the new engineering background. Secondly, the problems existing in the basic teaching reform of control engineering under the background of new engineering are studied, such as single teaching content, insufficient comprehensive quality of teachers, low enthusiasm of students in class and cognitive deviation of teaching evaluation. Finally, the optimization strategy is formulated based on relevant working experience.

Key Words: New Engineering; Control Engineering; The Teaching Reform

1. INTRODUCTION

Basic engineering teaching is the key link for students to go to the society through school, and it is also the main step to apply the theoretical knowledge learned in school to practice. With the continuous development and progress of The Times, the demand for social talents is gradually increasing. The basic teaching of control engineering plays a key role in the process of social development by cultivating talents and qualities in colleges and universities. In order to improve the basic teaching of control engineering efficiently, it is necessary to carry out deep reform in teaching content, curriculum setting, teaching means and methods.

2. THE MAIN CONTENTS OF CONTROL ENGINEERING BASIC TEACHING REFORM UNDER THE NEW ENGINEERING BACKGROUND

"New engineering background" is mainly based on the strategic action of building new industries and scientific and technological revolution. Industry, Internet and intelligent technology are the core technologies, including cloud computing, big data, virtual reality, blockchain and intelligent science [1]. Under the background of new engineering, the basic teaching of control engineering is based on technology and theoretical knowledge, and the main learning method is through teaching materials and teachers' teaching.

3. PROBLEMS EXISTING IN BASIC TEACHING OF CONTROL ENGINEERING UNDER THE BACKGROUND OF NEW ENGINEERING

3.1 The teaching content is single

Due to the limited classroom time of control engineering basic teaching, there are too many teaching contents in the textbook, so it is impossible to teach them all in the prescribed time. Some textbooks contain too little content for students to learn comprehensively. The requirements of teaching materials are too high, and complex variable functions are used in basic engineering teaching, but the content of teaching materials is insufficient. Students don't get the full picture. Teaching materials require students to have knowledge in series, linear algebra, advanced mathematics, analog electronic technology, mechanical technology and other aspects [2], because the knowledge is too profound, students will be afraid. Theoretical knowledge is more than practical experience, and the teaching materials focus on theoretical knowledge, but lack of practical application guidance of control engineering. Textbook exercises combined with the answer to write, the answer is not detailed. The students lack of thinking about the problem, and their thinking of solving the problem is not clear. They cannot fully understand the content of the problem by relying too much on analysis. This results in poor learning quality, low teaching efficiency and high learning difficulty.

3.2 The comprehensive literacy of teachers is insufficient

Teachers lack professional competence, do not fully understand the basic knowledge of control engineering, and do not have professional teaching ability and strong sense of responsibility to carry out knowledge teaching in order to complete classroom teaching. Teaching is knowledge skills, preaching ability is not up to standard, the lecture is in front of the screen, books, desks and other reading materials, teaching knowledge emotional rendering power is not enough to improve students' learning enthusiasm. The teachers lack engineering application ability and scientific research experience, leading to the inability to list engineering examples and insufficient research topics.

3.3 Students' enthusiasm in class

The development of classroom is the process of teachers and students imparting and receiving knowledge. However, the education method of controlling engineering foundation is based on books and teaching materials, and students are too mechanical and passive to listen to lectures and recite lessons. Students' lack of enthusiasm in class results in their unwillingness to accept knowledge related to control engineering.

3.4 Cognitive deviation in teaching evaluation

The traditional teaching evaluation method is used to understand students' learning status of control engineering through written examination. Learning feedback is less, unilateral screening according to the score level can not comprehensively diagnose students' learning problems. And affect the enthusiasm of teaching teachers. Can't train the students' brain ability.

4. FEASIBLE PATH OF CONTROLLING BASIC ENGINEERING TEACHING REFORM UNDER THE NEW ENGINEERING BACKGROUND

4.1 Diversified teaching content

The content of teaching materials should be arranged reasonably, and the teacher should complete lesson preparation before class. In the course of teaching combined with the class, the division of excessive content of books and textbooks, students only need to learn marked areas. For textbooks with little content, teachers teach another part of the content, and students take notes in class.

Continuous classroom teaching method can be carried out, and the knowledge that students have not learned can be taught by alternative method. The content of complex variable function not mentioned in the textbook will be taught by teachers independently. Using old knowledge to replace new knowledge to reduce the difficulty of learning trigonometric function knowledge can be used as a substitute for higher teaching knowledge. Considering the teaching content in many aspects, we should consider the content of teaching materials and the direction of control engineering in combination with the reality. Guide students to use theoretical knowledge in practice, more effectively enhance students' mastery. Teachers should increase examples in teaching. Leave homework before the end of class, let the students think about the answer actively, observe whether the students can complete the project and master the knowledge proficiency without parsing. Solve the problem of relying too much on textbook analysis, and explain the problem in detail in class, so that students can accept the idea more clearly. In many ways, the difficulty of learning is reduced, the quality of learning is improved and the teaching efficiency is improved. Considering in many aspects for students, the teaching materials, teaching programs and teaching contents should be improved based on the actual learning of relevant professional teaching programs. Carry out new classroom knowledge teaching, such as the characteristics and working principle of dampers, the evolution of complex function knowledge, electrical knowledge, basic machinery, inductance and capacitance teaching, etc. Increase students' interest in learning and pay attention to imparting new knowledge.

4.2 Cultivate teachers' comprehensive quality

Teachers should make full preparations before teaching and use skills to complete the basic teaching of control engineering. Organize regular training for teachers to enhance their professional level and fully understand the teaching materials. Pay attention to the art of classroom teaching when teaching, can not read the way of teaching, should attract students' attention to emotional edification. The classroom should be interactive, with questions and answers, to drive the desire to learn knowledge and provide teaching effects. Improve their own scientific literacy, pay attention to scientific research and engineering practice application ability, have rich scientific research programs and engineering experience. We should not use engineering examples repeatedly to enrich the teaching content and improve the teaching effect comprehensively.

Big classroom teachers should regularly carry out comprehensive quality training, on the basis of the master control engineering theory knowledge, improve their practical and physical, understand the debugging skills, engineering design, circuit structures, electrical, control components, mechanical knowledge, such as combination in teaching concept, with rich professional knowledge to guide students to learn.

4.3 Carry out multimedia teaching

In order to improve the teaching effect, the teaching method of multimedia control engineering should attract students' attention. Combine engineering knowledge with examples, and let students master the role of control engineering in life through video playback. Teachers pay attention to teaching skills when preparing lessons and arrange the use of multimedia reasonably according to the requirements of class hours. Combined with the production experience, practice, scientific research and other aspects of the project, the use of computer multimedia technology to vividly display the course content. Let students intuitively understand and master the basic concepts of control engineering, enhance the teaching effect.

4.4 Establish scientific evaluation objectives

Under the background of new engineering, basic teaching of control engineering is carried out. Combined with book knowledge to carry out group teaching assessment model, students in the form of group discussion. The teacher sets up the engineering inquiry class to answer questions in groups. Through establishing scientific evaluation methods, correcting students' learning attitude, enhancing students' enthusiasm and interest in learning control engineering, effective research on basic teaching reform of control engineering is carried out.

5.CONCLUSION

To sum up, it is particularly important to control the reform of basic engineering teaching under the new engineering background. In order to ensure students' enthusiasm in the learning process, it is necessary to optimize and control the engineering teaching mode, change the traditional teaching method, and carry out multimedia classroom, so that students can finish the course independently to ensure the correct application of theoretical knowledge. Hopefully, it will be helpful to the teaching reform of relevant departments.

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Research On Precise Employment Data Based on Data Mining

Xiaoxiao Chen, Chen Fang
Hunan University of Arts and Sciences, Changde 415000, China

Abstract: This paper mainly discusses the application of data mining technology in the employment of college students, introduces how to use data mining technology to guide the employment of colleges and universities, in order to provide accurate employment services, provide systematic and scientific decision-making guidance for the employment management of colleges and universities, and help students find suitable jobs.
Key words: Data mining; Employment of college students; College Employment Guidance

1. CURRENT SITUATION OF COLLEGE EMPLOYMENT GUIDANCE

As the enrollment of higher education increases year by year, the number of graduates also increases, and the employment pressure faced by graduates also gradually increases. Therefore, it is particularly important to find factors that affect the employment of graduates and make them better employed. In the era of big data, data information has been all over the Internet, college students employment guidance work has a greater space for development. How to adopt the suitable technology, the university employment data information for scientific treatment, to extract the useful knowledge, rules and unearth hidden behind these data with the law of value and knowledge, to provide the system of colleges and universities employment instruction work, scientific decision-making guidance, university employment management work is facing the challenges and requirements.

2. DATA MINING TECHNOLOGY

Data mining is a high-level active automatic discovery method, also known as knowledge discovery. It is a process of extracting correct, useful, unknown and comprehensive information from data and using it to make decisions. With the development of information technology, business operations in all walks of life are developing towards process automation, and data mining is more widely used. Detecting telephone fraud, IBM Advanced Scoutanalyzed NBA game statistics, Teaching assessment and Insurance Evaluation, Trafficcontrol, Astronomy, and Detecting inappropriate medical treatment are all closely related. Association rule is a common mature technology in data mining applications. It is an algorithm widely used in rule discovery and transaction analysis. It refers to mining valuable knowledge describing the relationship between data items from a large amount of data to help people make decisions.

3. USE THE IMPROVED APRIORI ALGORITHM TO ACHIEVE ACCURATE EMPLOYMENT GUIDANCE SERVICE

The improved Apriori algorithm is used to analyze the curriculum scores and employment information data of nearly five graduates in school, dig out the classification rules contained in the data, summarize the employment needs of students, provide reference advice for employment guidance teachers, and further understand the deep employment needs of students.

3.1 Improvement of Apriori algorithm

The original Apriori algorithm was optimized from two aspects: the calculation process of the support degree of candidate item set and the reduction of the size of candidate item set.

3.1.1 Calculation process of support of candidate project set

In the whole transaction database, if you want to obtain a set of transaction items, you can decompose the transaction item into a single element item, and the result of the intersection of the set of single element items is. According to this principle, the counting of Ck does not need to scan the database frequently any more. Instead, according to the rule that the set of candidate item sets can be decomposed into the intersection of its item set elements in the database, the generated candidate item set C1 is used to derive the counting of Ck. In this way, in the process of calculating the count of support, only scan the database once, and the time cost will be lower than the original algorithm.

3.1.2Reduce the size of the candidate project set

After frequent K-1 item sets were generated, the whole candidate set was checked and pruned to determine whether the number of item sets contained by LK-1 was smaller than the dimension of item sets. If less than, the k item candidate set cannot be generated, and the algorithm can be terminated. When item set Ii and Ij in candidate set LK-1 are connected to generate X, each item set element of X is also checked. If the number of item set elements is smaller than the dimension of candidate set, item set elements will not appear in the generated K-dimension candidate item set, and can be deleted to reduce the size of candidate set.

Through the optimization of the above two aspects, a complete improvement scheme based on support counting work and candidate item set rule optimization can be generated, thus greatly improving the efficiency of the algorithm.

3.2 Data preprocessing

As for the historical employment data of college graduates, serious errors in collection and recording will lead to the loss of data. The employment data of graduates in the past five years are selected to carry out data cleaning by selecting scientific, safe and suitable attribute data for data mining applications. Repeat, missing value and error value are processed. If there are records of missing value of multiple attributes, they are directly deleted from the sample. On the premise of not affecting the quality of data mining results, the integrity of the original data should be kept as far as possible. After data cleaning, some original attributes are generated according to needs, and the data is converted into a description form suitable for data mining through generalization and attribute discretization. For example, gender 1 represents male students and 2 represents female students. Gpa: C1 means excellent, C2 means good, C3 means qualified, AND C4 means to be supplemented; Unit nature A1 represents civil servants, A2 represents public institutions, and A3 represents enterprises.

3.3 Data mining applications

After data pretreatment, gender, major, education level, graduation destination, unit nature, job category and gpa were selected as training attributes to carry out employment demand correlation mining. Nineteen thousand two hundred records of case information, using the classic association rules Apriori algorithm and improved Apriori algorithm, by setting different number of transactions, different support, different number of projects, statistics of the two algorithms and the number of strong association rules generated, comparative analysis of the performance and efficiency of the algorithm. The mining results show the difference of execution time between the two algorithms when the same minimum support is used to compare different transaction records. From the experimental results, the improved Apriori algorithm achieved the expected goal, compared with similar algorithms, the modified algorithm has the characteristics of accurate mining results, fast speed, small amount of calculation, short time, high space utilization. At the same time, it also reflects the relationship between the minimum support and time of these two algorithms: the minimum support is the highest, the more time is needed; For different minimum support, the improved Apriori algorithm takes less time than the classical Apriori algorithm.

Based on the above analysis and the results of association rule mining, the following conclusions are drawn:

3.3.1 Graduates with good professional performance in school are employed in IT industry, which to some extent indicates that the professional courses offered now are more reasonable.

3.3.2 Graduates with average professional performance but strong comprehensive quality prefer to work in business and service industry.

3.3.3 Graduates with good academic performance prefer to upgrade to higher level. Meanwhile, most of the graduates who successfully upgrade to higher level achieve good academic performance at school.

4. CONCLUSION

Data mining technology is used to analyze the massive data of past graduates in order to mine employment rules, provide valuable information for college employment guidance work to provide decision-making basis, guide students to correct self-cognition, determine appropriate employment goals, further improve the employment rate, improve the current training mechanism.

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Chaoshan Diet Folk Custom Tourism Development

Ning Chen, Hongling Lin
Zhanjiang University of Science and Technology, Department of Tourism Management, Guangdong, Zhanjiang 524094, China

Abstract: Chaoshan has a long history and culture, its diet folk custom is more characteristic, is also an important tourism resources, should provide necessary support and guarantee for the development of chaoshan tourism. Therefore, starting from the development status of chaoshan diet folk tourism, this paper further analyzes and explores the development approaches of Chaoshan diet folk tourism, in order to provide reference for the development of Chaoshan diet folk tourism.
Key Words: Chaoshan; Diet Folk Customs; Tourism Development

1. INTRODUCTION

The development of economy drives the continuous prosperity of tourism industry, catering tourism has become a new situation in recent years. Chaoshan has a long history and food culture, and the development of its food folk customs is of great significance to the development of tourism in Chaoshan area. Therefore, in-depth exploration of chaoshan food and folk culture, to create chaoshan folk food brand, and then constantly promote the development of food and tourism in Chaoshan area.

2. DEVELOPMENT STATUS OF CHAOSHAN DIET FOLK TOURISM

At the present stage, Chaoshan is faced with the following problems in the development of catering folk tourism: First, the local dialect is heavy, and the language is difficult to understand and exclusive. Chaozhou dialect is still used as the daily communication language in chaoshan area. As one of the oldest and most special languages, chaozhou dialect is undeniable for its linguistic charm. However, due to its particularity, foreign tourists cannot understand it, and some Chaoshan people also cannot understand Putonghua, thus resulting in language communication barriers. At the same time, restricted by traditional ideas, chaoshan area also has a certain exclusion phenomenon, which makes chaoshan culture unable to better integrate and communicate with the outside world, resulting in a strong lag in the development of chaoshan diet folk tourism. Second, the propaganda of local diet folk tourism is insufficient, resulting in less understanding of Chaoshan diet. Chaoshan food folk culture resources are relatively rich, chaozhou cuisine is famous all over the country, is also one of the more high-end cuisine. Chaoshan not only chaoshan beef balls, there are ox mixed kway, etc. More chaoshan shrimp and crab sparerib casserole congee, Chaoshan fish rice and sausage powder and many other characteristics of food and snacks. Although Chaoshan is rich in food resources and folk customs resources, the lack of publicity and publicity scope has caused many problems in the development of local food folk tourism, and most tourists do not know the local characteristics and cuisine. Third, economic development is backward and related tourism facilities are not perfect. Chaoshan is located at the junction of Guangdong and Fujian, belonging to the southeast coastal area. Although the geographical position is superior, the economic development of Chaoshan area is still relatively backward, resulting in the local tourism facilities are not perfect, can not meet the actual needs of tourists, become the resistance of tourism development. After field investigation and research, it is concluded that the traffic situation in Chaoshan area is poor, the road is congested and the way of travel is single, there are also unclear road signs, poor health conditions and other problems. What's more, the tourist attractions are scattered, poorly connected and lack corresponding means of transportation. As a result, tourists are not willing to spend time or money, which has a negative impact on the development of local tourism.

3. CHAOSHAN DIET FOLK TOURISM DEVELOPMENT APPROACH

3.1 Perfect supporting facilities and improve tourism visibility

In order to enhance the acceptance capacity of tourists in Chaoshan area and attract more tourists and consumers with distinctive delicacies and folk customs, first of all, relevant responsible departments should strengthen the investment of funds, government departments should give strong support and financial subsidy policies, and improve the construction of tourism infrastructure in Chaoshan area. Improve the transportation environment, improve the transportation capacity, make it more convenient, strengthen tourism health services, optimize related supporting facilities. In addition, attention should be paid to the convenience of transportation between scenic spots, from the perspective of tourists and consumers, to provide them with travel and sightseeing convenience, through adding traffic, improving roads and other ways to enrich the travel experience of tourists. There are both overseas Chinese and mainland compatriots in Chaoshan area, and a large number of successful people are keen on the development and construction of their hometown. Therefore, when carrying out tourism development and construction, the government and other relevant departments should strengthen communication with overseas Chinese and compatriots, hold relevant activities and tourism and cultural festivals to arouse the enthusiasm of overseas Chinese and compatriots and make them more willing to devote themselves to the development and construction of their hometown. We should actively establish the cultural image of Chaoshan tourism and create the folk tourism brand, so as to continuously improve the popularity of Chaoshan tourism [1].

3.2 Excavate folk culture and create tourist name cards

Tourism as an activity to satisfy the material spirit, culture makes its core. High-quality culture plays an important role in improving the tourism experience and makes tourism more vibrant. In the process of developing chaoshan folk tourism, culture can be integrated into it. Folklore diet is certainly the characteristic of Chaoshan, but the purpose of tourists' tourism is not only to taste delicious food. As tourism developers, they should strive to provide diversified needs for tourists and consumers and expand the range of needs for tourists to choose. The process of integrating the characteristic folk food with the time-honored culture and local customs in Chaoshan is also the process of integrating tourists and consumers into Chaoshan. The aesthetic level of tourists can be improved gradually by visiting beautiful scenery, savoring delicious food and perceiving culture, and the knowledge can be increased and the harvest can be gained in many aspects. In addition, colorful tourism projects can help attract more tourists and consumers, and provide new ideas and new thinking for chaoshan's tourism development, so that Chaoshan can inherit the local excellent tourism culture while developing characteristic folk culture. As tourists and consumers, they pay more attention to the tour of the tourist landscape and experience more local customs and customs on the way of travel. Therefore, more culture is integrated into the food, which helps to meet the diversified needs of tourists and consumers. While fully excavating chaoshan cuisine, we should actively make use of local characteristics and advantages to play a leading role in creating a food culture name card to promote the economic development and the improvement of tourism benefits in Chaoshan [2].

3.3 Expand communication power and improve tourism economy

In order to improve the cultural applicability of Chaoshan dialect, the government, universities and relevant mainstream media should strengthen cooperation and communication, and enrich the content and characteristics of Chaoshan dialect by constructing diversified inheritance systems and modes. Make tourists have a deeper understanding of chaoshan diet, and have interest, help chaoshan diet folk tourism culture development. As a folk diet, the tourism industry continues to improve the degree of integration while expanding and developing, so that it has been sublimated. Shantou city is an excellent tourist city in China, and its tourism industry has become an important component of local economic development and development characteristics, so it has a strong reference significance. In order to improve chaoshan folk diet culture, it is necessary to design and develop tourism products in line with local development and promote the development and prosperity of folk diet. Chaoshan cuisine has become the most characteristic tourism projects, coupled with the development of tourist attractions, constantly enrich the tourism content, extend the tourism routes of tourists and consumers, actively develop the tourism market, and constantly promote the development of Chaoshan folk cuisine culture. Create a good tourism atmosphere, improve the local economic development benefits.

4. CONCLUSION

All in all, chaoshan folk diet has the characteristics of diversification and richness, which is also an important embodiment of Chaoshan culture. Its rich and profound cultural connotation is also an important factor to develop tourism projects. However, there are many problems in the development of chaoshan folk cuisine. Therefore, it is necessary to pay attention to the development of related tourism projects and products, constantly drive the local and even regional economic development, enrich the cultural connotation of tourism, extend the tourism industry chain, and promote the cultural and economic development of Chaoshan area. Then continuously improve the economic and social benefits.

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Analysis On the Integration of Chinese Traditional Virtue and Middle School Morality and Rule of Law Classroom Teaching

Lingxia Du
Middle school of Taishan College, Tai'an 271000, Shandong, China

Abstract: The Traditional virtues of the Chinese nation are the social moral standards condensed from the long history and culture of the Chinese nation for five thousand years and are an important part of the splendid history and culture of the Chinese nation for several thousand years. In the teaching process of morality and rule of law in junior middle school, traditional Chinese virtues are an indispensable part of knowledge. The integration of this part of knowledge into the classroom can make students consciously inherit and carry forward the traditional virtues of the Chinese nation in the learning process and constantly improve their comprehensive quality.
Key Words: Chinese Traditional Virtues; Morality And The Rule Of Law; Cultural Confidence

1.INTRODUCTION

In today's world, culture has increasingly become an important source of national cohesion and creativity. As the main channel of school moral education, the moral education course must integrate the excellent traditional Chinese culture into the teaching of moral education, occupy the main position of students' ideological and moral construction with the excellent traditional culture, cultivate students' patriotism and collectivism spirit, enhance national pride and self-confidence, and enhance cultural self-confidence. And there are many ways in which traditional virtues can be incorporated into the classroom:

2. REVIEW HISTORY AND ENHANCE NATIONAL CULTURAL IDENTITY AND SENSE OF MISSION

The traditional Culture of the Chinese nation is extensive and profound, and has a long history. In the rings of history, there are many classic celebrity deeds handed down, and they are full of meanings. Teachers can according to this, morality and the rule of law in the junior high school class situation, will have the interesting story of celebrity as a teaching material into the classroom, can enrich students' knowledge, and can let students interested in morality and the rule of law content, attract attention, deepen the impression of the student, promote classroom learning efficiency.

3. COMBINE EXCELLENT TRADITIONAL CULTURE AND LET STUDENTS UNDERSTAND BASIC CONCEPTS

Family virtues, for example, "piety", "respect teachers", "respect elders" these moral term. Students familiar, but when the student please explain what is "filial piety", most of the students stay on to obey their parents, to listen to their parents this level, as to what is "filial piety", few students can explain, in filial piety, Many students were ashamed when they were asked to reflect on themselves by introducing "Di Zi GUI," or "Filial Piety chapter." This kind of touch can achieve the effect of "silence speaks louder than silence".

4. DIG DEEPLY INTO TEACHING MATERIALS AND INFILTRATE TRADITIONAL VIRTUES

Teaching materials are the basis and premise of teachers' teaching and the main source and auxiliary tools of teaching activities. As an important position of moral education, morality and rule of law in junior middle school contain rich moral resources, so students should have a thorough understanding of the specific content of the teaching material, so that they can better understand the true meaning of virtue and consciously inherit the fine traditional virtues of the Chinese nation. Taking patriotism as an example, in the course of "Love China", the "spiritual dialogue" in the textbook can be used to realize the collision between teaching materials and students' hearts: On June 18, 2012, the G20 Summit opened in Los Cabos, Mexico. In the group photo, the organizers used national flags to mark the positions of the leaders. Group photo finished, the leaders dispersed, the foot of the national flag was trample on. Chinese President Hu Jintao bent down to pick up the flag sticker and carefully put it away. This scene aroused people's hot discussion and reflection.

5. PAY ATTENTION TO CURRENT EVENTS AROUND YOU, TIMELY GUIDANCE, RATIONAL THINKING

Take patriotism as an example. On October 5, 2019, The improper words and deeds of Daryl Morey, general manager of The Houston Rockets, set off Chinese football fans. In response to this incident, I asked the students who love basketball in class: Do you still love basketball as before? Will you follow the NBA and watch related games? One stone aroused thousands of waves, the class love basketball children instantly formed two distinct camps, one side expressed a firm boycott, the other side said they could not put their love star and NBA. In view of this debate, we give timely guidance: Morey's words and deeds grossly interfere in China's internal affairs, touched the bottom line of China's value, which we resolutely reject! However, it is worth reflecting on the "patriotic" behavior of indiscriminately boycotting the entire NBA because it seems to be more passionate than rational. If someone is holding the sword of patriotism and wanton moral kidnapping, this form of "patriotism" is hypocritical, blind and irrational.

6. LOOK PAST AND PRESENT, AND FEEL THE POWER OF AN EXAMPLE

Class in "love" in the eaves, the editor has arranged a ancient (zengzi - in order to take good care of the parents' body, mindful of the parents' eating habits) a today (a mother's love without borders - "outbreak" mother yu-rong Chen) of two typical character story, let the students connect to pure to the deep love of parents at the same time, don't forget to remember the parents upbringings. Chinese traditional virtues and school moral education are perfectly integrated in the class of morality and rule of law.

7. DEEPEN STUDENTS' UNDERSTANDING OF TRADITIONAL VIRTUES BY CONNECTING WITH REAL LIFE

Take honesty as an example, it is difficult for students to have a deep sense of identity in the literal meaning, and it is easy for students to have recognition and acceptance of honesty and trustworthiness by connecting with reality in life, so as to achieve the ideal educational purpose. For example, when teaching "Honest man forever", he guided students to explore according to what happened around them. Some students dozed off in class, but when the teacher reminded him, he said he didn't sleep. When I checked the homework, I found that the homework content and result process of the two students were the same, even the mistakes were the same. When the teacher asked, the student who plagiarized said no. Although the teacher did not punish them further, the quality of honesty and trustworthiness of these students was lost. What is more serious is that once these students formed the habit of lying, they would gradually lose friends and even violate the law because of dishonest behavior. Through this in-depth study, students can better understand the true meaning of honesty and trustworthiness, enhance the sense of integrity.

In short, has a long history in the traditional virtues of the Chinese nation, it contains excellent national quality, fine spirit, lofty national integrity, noble ethnic feelings, good manners, we need to constantly to explore, to dig, to seek a better education ways and methods, train and bring up a generation to adapt to the all-round development of high-quality talents in modern society.

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Research on the Construction of Regional Characteristic Economy in Shandong Province-Taking Yiheyuan Pastoral Complex as an example

Qian Xing
Silla University, Busan, South Korea

Abstract: The 19th National Congress of the Communist Party of China put the rural revitalization strategy as a national strategy on the important agenda of the party and the government's work, and clarified the goals and tasks for specific rural revitalization actions. On March 8, 2018, the General Secretary participated in the deliberation of the Shandong delegation of the National People's Congress and proposed to "create a model of Qilu for rural revitalization", which is a glorious mission given to Shandong. In this context, for many years, the Shandong Provincial Government, Zibo City Government, and Yiyuan County Government have fully supported private enterprises to actively participate in rural revitalization, and strive to build the Yiheyuan pastoral complex to explore ways, create experience, and model for rural revitalization.

Keywords: Regional Economy; Qilu Model; Yiheyuan; Pastoral Complex

1. RESEARCH CONTENT, RESEARCH PURPOSE AND SIGNIFICANCE

1.1 Research content

Yiheyuan Pastoral Complex The project area is located in Lucun Town, Yiyuan County, involving 7 administrative villages including Longziyu Village, Liujiazhuang Village, Jijiayu Village, Liujiapo Village, Lujiaoshan Village, Beixujiazhuang Village, and Xixujiazhuang Village. It is planned to invest 600 million yuan, with a total area of 32,000 mu, including 18,700 mu of high-standard farmland, which is the largest pastoral complex in Yiyuan. The research content will analyze the overall structure, innovation level and application value of the pastoral complex from the cultural, talent, and industrial fields.

1.2 Research purpose and significance

Yiheyuan Pastoral Complex was awarded the first place in Zibo City as a pilot project for the construction of pastoral complexes in Shandong Province. After years of development, it has achieved initial results. Therefore, it has the research value of Shandong Province's regional characteristics and economic representative.

Yiheyuan Rural Complex, including Longziyu Village, of the seven villages in Lucun Township at the source of Yihe River before 2018, five of them were provincial-level poor villages. The three-level party committees and governments of provinces, cities and counties have worked hard to use the water resources and ecological advantages of the Yi River to develop into a cultural, smart, leisure, green and low-carbon environmentally friendly village. Therefore, this is also the study of the sustainable new rural economic model of China's rural modernization, new urbanization, and overall social development.

2. RESEARCH FORM AND IMPORTANT POINTS

2.1 Research on the cultural field of Yiheyuan Pastoral Complex

The Yiheyuan Pastoral Complex, with Longziyu Village as its core, first put forward the concept of "art revitalizing the countryside" in China, and won the award of Fukutake Soichiro (initiator of Naoshima Art Center in Japan) and Paul Andrew (designer of National Grand Theater of China) , Beichuan Fulang (founder of Dadi Art) and other world-renowned artists. Thai artist Navin Rawanchaikul, French artist Lionel ESTÈVE, and Chinese artist Pan Yizhou will also come to create and integrate modern art into the countryside.

With the deepening of art and culture, more and more artists come here, such as Liu Yutang Literature Museum, Li Huaijie Art Museum, Paul and Nadi House, Yiyanqi Art Museum, Rural Academy, Art Homestay, "Home Project", etc. A series of cultural products take root in the countryside and serve the villagers.

The revitalization of the countryside by art is not only the beautification of the environment, but also the enhancement of the cultural heritage of rural tourism. CCTV's "Happy and Happy" and "My Beautiful Country" are recorded here. Deepen cooperation with Beijing Hanshe Cultural Tourism Group, entrust it with full operation, and introduce Jiaxiang College, equestrianism, camp education, international fishing and other business sectors, which greatly facilitates the depth of rural cultural tourism experience for tourists from all over the country.

2.2 Research on the talent field of Yiheyuan pastoral complex

With the acceleration of the pace of rural construction, how to have a high-quality professional rural revitalization team that understands agriculture, loves the countryside, and loves farmers has become a major problem encountered in development.

On December 6, 2020, Shandong Taohuadao Art Rural Culture Tourism Development Co., Ltd. and Hongtai Fund jointly initiated the establishment of the Rural Revitalization College of Shandong University of Finance and Economics, and moved the university into the countryside.

The college actively promotes the implementation of the strategy of in-depth service for rural revitalization by universities, and builds universities on the front line of rural revitalization. Not only can we import foreign talents, but also cultivate local talents. Committed to the training and education of rural revitalization talents in Shandong Province and even the whole country, integrating production, teaching, research, technology education, integration of industry and education, and technology integration, promoting the construction of new liberal arts in schools and the cultivation and innovation of compound new financial talents, and creating a high-end think tank platform for rural revitalization .

2.3 Research on the Industrial Field of Yiheyuan Pastoral Complex

In terms of industrial operation, platforms such as modern agricultural industrial parks, agricultural science and technology parks, rural entrepreneurship and innovation parks, and science and technology demonstration villages will be built. In-depth cooperation with Shandong University of Finance, Qingdao Agricultural University, Shandong Youth College of Political Science and other universities to implement rural practical talent training programs, bringing university professors and scholars to the fields, teaching villagers new techniques in fruit and vegetable management, and training local areas with advanced new techniques "Soil experts" make knowledge more down-to-earth.

Using the Yiheyuan pastoral complex as a platform, build 32,000 mu of high-standard farmland, build farmland water, electricity, and road infrastructure to provide guarantees for agricultural electricity, water, and transportation in the project area, and attract social capital and new business entities to the area Investing in business, radiating to promote the high-quality development of agriculture in the area.

Through the "Internet + modern agriculture", e-commerce will enter the rural areas and informatization wings will be added to the revitalization of the rural areas. Continuously optimize the industrial structure of the park. Based on traditional industries such as peach and millet, modern agricultural parks such as Huasheng Fruit, Jingdong Farm, and China-Israel Fruit Industry have been developed, covering an area of more than 3,000 acres. The Huiquan River mushroom breeding project, the Yuanhe edible mushroom mushroom stick intelligent cultivation project, and the Kaiyuan agricultural dried fruit and vegetable project have been introduced.

3. THE DEGREE OF INNOVATION AND ITS APPLICATION VALUE

Promoting the construction of smart districts, and fully launching the district's digital agricultural and rural construction. Strengthen strategic cooperation with scientific research institutions, leading companies, and brand companies, and promote key projects such as Yuanhe Edible Mushroom Stick Intelligent Cultivation Base, Huasheng Fruit Cowo Cloud Digital Fruit Industry, Luzhong High-tech Modern Agriculture Demonstration Park, and Smart Rural Governance Platform Construction, to realize the digitalization and intelligentization of agricultural production and rural governance, and build the area into a "digital area and smart area".

Its application value is also outstanding, such as Liujiapo Village, which is a key poverty-stricken village at the provincial level. There are only more than 90 households left in the village, all of which are elderly, lack of labor, and the per capita income of the villagers is only four to five thousand yuan. After the project is launched, improve the infrastructure, build five-meter-wide asphalt roads in the village, drill deep wells to repair pools, construct purified water implementation, connect water and electricity, and improve the living conditions of the people; lead the development of tourism through land transfer, house transfer, greening transformation, etc. Optimize the village environment, transform cultural and tourism facilities such as homestay art museums, and increase village tourism income; implement more than 400 acres of fertile land transformation, and through investment cooperation and other channels, experiment planting edible lilies, sweet potatoes, grapes and other specialty agricultural products. A series of projects including the establishment of the Huiquan River mushroom breeding base and the development of the mushroom industry have not only improved the village living environment, but the per capita income of Liujiapo villagers has exceeded 20,000 yuan.

4.CONCLUSION

The Yiheyuan countryside is comprehensively embodied in the development of Longziyu Village as a national 3A-level tourist attraction that integrates art research, rural tourism, leisure picking, and wild luxury homestays. It has been linked to host the 27th Peach Blossom Festival and has become the surrounding area. The annual number of tourists is more than 150,000, and the occupancy rate of homestays reaches 80%. It drives 300 villagers to work, and can realize an annual income of more than 90 million yuan, which will drive the project area and surrounding people to increase their annual income by 12,000 yuan per capita.

Yiheyuan Rural Art Town and Taohua Island 3A-level tourist attraction were selected as "National Cultural Tourism Optimal Investment and Financing Project", "Shandong Province New and Old Kinetic Energy Conversion Optimal Project", and was named "Shandong Province Rural Revitalization Demonstration Zone" and "Shandong Province Honorary titles such as "Tourism Characteristic Village" and "Shandong Civilized Village". In the future, Yiheyuan will continue to use art to activate the countryside, vigorously promote the integrated development of primary, secondary and tertiary industries, create a model "Yiyuan characteristic plate" for rural revitalization, and promote a new situation of integrated development of "research, learning, and tourism".

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Research On Computer Information Processing Technology Based on Big Data Analysis

Jie Chen
Jiangsu Vocational Institute of Commerce, Nanjing, Jiangsu, China

Abstract: With the advancement of science and technology, the application of computer information technology in various fields of society has greatly promoted the development of my country's economy, has also facilitated people's production and life, and improved people's life experience and work efficiency. The computer's information processing capabilities can filter, classify, and summarize data in the network system, allowing people to search for the required information more quickly. With the development of network technology, the era of big data has arrived, which also affects computer information. Processing technology brings a greater test. The article introduces the concept of big data and computer information processing technology, and analyzes the problems of computer information processing technology in the context of big data, lists the implementation measures of computer information processing technology based on big data analysis, and further promotes the development of computer information technology develop.
Keywords: Big Data; Computer; Information Processing

1.INTRODUCTION

At present, the rapid development of network information has also prompted the arrival of the era of big data. In the context of the increasing economic attributes of data, how to use computer information processing systems to distinguish and filter data with high quality and high economic value has become today's computer information The key to processing technology. At the same time, strengthening computer information technology's ability to process information and increasing the storage capacity of information data is also an important part of the development of computer information technology. This requirement is not only based on the requirements of the big data background, but also the needs of modern social and economic development. It has also become an important technical basis for my country's military development. Therefore, the article provides a detailed explanation based on the above content.

2. THE CONCEPT OF BIG DATA AND COMPUTER INFORMATION PROCESSING TECHNOLOGY

In the development of enterprises, obtaining industry information has become an important basis for corporate decision-making. Big data can also provide companies with rich industry information. However, the amount of this information is huge, and it is impossible to screen and count manually, and companies cannot obtain real and effective information from it. Information, which requires a powerful automated information processing technology to filter and integrate massive amounts of data information to provide enterprises with accurate data information and improve the economic benefits of enterprises. This is also the key to computer information processing technology under big data. The advantage lies in [1].

Big data is widely used in social industries and exists in all areas of the industry. In the development of enterprises, big data can provide the latest data and development trends of the industry, can provide references for enterprise decision-making, and possess certain economic attributes. In the process of development, the industry can not only release data information, but also benefit from data information, which makes big data an important data information medium for economic development. In the process of social development, many companies have developed based on the background of big data, such as online shopping and car navigation systems.

3. THE STATUS QUO OF COMPUTER INFORMATION PROCESSING TECHNOLOGY BASED ON BIG DATA ANALYSIS

3.1 The status quo of computer information processing technology

In the context of big data analysis, the amount of Internet information has increased dramatically, and it has also shown a trend of diversification and complexity. The existing computer information processing capabilities cannot meet the needs of network information development, and backward computer equipment cannot guarantee information analysis. Efficiency, the backwardness of software technology reduces the accuracy of information analysis and reduces the comprehensive processing capacity of data information [2]. This phenomenon is mainly: the timeliness of computer processing data information is poor, and the accuracy of computer processing data information is not enough, resulting in the processing of data information that cannot meet the needs of economic development.

3.2 Current status of computer information processing information

The lack of protection measures for personal information. In the context of big data, information and data show complex and diverse changes, which also makes a large amount of personal privacy information in the information, which can be given certain economic value through the processing of computer information technology. The economic attributes of information are enhanced. Therefore, in the context of big data, the protection of personal information has become a key issue in the development of computer information processing technology.

At present, computer information processing technology cannot distinguish the value attribute of information in practical applications, and there is no good information protection method. Some companies and individuals do not have a strong awareness of information protection, and there are no corresponding measures in the protection of data information, which leads to the leakage of personal information and customer information, which seriously affects the company's reputation and threatens the information security of customers. While enjoying the convenience of big data information, people also ignore the protection of information and data. This has made information and data leakage incidents common in recent years, causing people to worry about the security of their own information and data.

In addition, the commercial behavior of information data has also emerged with the development of big data. Many criminals aggregate the personal information left by people on the Internet and conduct illegal transactions of information, making information data fall into the hands of different groups of people. This is one of the reasons why people often receive advertising calls and telecommunications fraud. Seriously affect people's normal life and cause people's property losses.

4. APPLICATION STRATEGY OF COMPUTER INFORMATION PROCESSING TECHNOLOGY BASED ON BIG DATA ANALYSIS

4.1 Optimize hardware equipment and improve information processing capabilities

In the context of the development of big data, existing computer equipment has insufficient computing power to improve information processing capabilities. This requires updating computer hardware equipment and improving software functions to satisfy the computer's analysis of big data. In terms of updating computer hardware, the purpose is to improve the computing power of computer equipment for information and data, and use the advantages of cloud computing to increase storage capacity and reduce the time for the computer to process information. However, this cloud storage method also increases personal information. The risk of leakage requires cloud storage operations on the basis of implementing information protection measures [3].

4.2 Strengthen information protection and build a safe and stable data information system

In the development of network information, information data also has corresponding economic value, which also puts forward higher requirements for information protection. Data depends on the timeliness of information to generate value. Once information is shared, data is lost. The original economic attributes are also the value of business information. In order to ensure the economic value of information and data, it is necessary to take measures to protect the information and safeguard the economic interests of the company or enterprise. In the development of enterprises, the protection of information and data is often carried out from two aspects.

4.2.1 In the development of the enterprise, strengthen the information protection awareness of the employees of the enterprise, increase the protection measures for the information and data, and ensure the controllability of the people contacting the information and data by setting keys for the information and data, and when necessary Sign confidentiality agreements with employees to effectively safeguard the interests of the company.

4.2.2 By introducing a safe and stable office system, strengthen the protection of information, set up a corresponding firewall in the office system to avoid data leakage caused by hacker attacks, increase the monitoring system, and ensure that the use of data and information is rule-based.

4.3 Cultivate professional talents and establish a talent reserve resource pool

While strengthening the protection of information and data, enterprises should also pay attention to the cultivation of professional talents, because once the information protection measures of the enterprise fail, they need professional and technical personnel to repair. Therefore, professional and technical personnel play an active role in the enterprise's information protection. . At the same time, strengthen the technical training of relevant personnel, combine the actual work, enhance the professional skills of technical personnel, and establish a perfect talent reserve resource pool for the enterprise.

5.CONCLUSION

In summary, big data is a product of network information technology, and computer information processing technology plays a positive role in the development of society. The original computer information processing technology has a slight deficiency in the development, which requires continuous optimization of hardware and Software facilities, enhance the information processing capabilities of computers, and at the same time strengthen the ability to protect information and data, apply a variety of protective measures to ensure the privacy of personal information, and further promote the stable development of social economy.

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On The Interaction of School Sports and Community Sports

Xi Chen[1*], Ao Yu[2]
[1]Taiyuan university of technology, Shanxi, Taiyuan 030024, China;
[2]Woosuk University, Jeollabuk-do, Korea
[*]Corresponding Author.

Abstract: Under the promotion of my country's national fitness policy, education departments in various regions have gradually paid attention to physical education and formed a corresponding relationship with community sports. However, the interaction between the two requires in-depth analysis by relevant scholars. This article first expounds the current situation of community sports and school sports, as well as the possibility of combining school sports and community sports, and then discusses the combination of school sports and community sports, and puts forward personal opinions.
Keywords: School Sports; Community Sports; Interaction

1.INTRODUCTION

Under the background of accelerating the process of urbanization, the people of our country gradually began to pay attention to their health after the general improvement of their material living standards, and their awareness of entertainment has been strengthened, especially as the demand for community sports has increased. However, in many areas, community sports facilities, equipment and resources have shown shortcomings, which to a large extent seriously hinder the development of community sports. However, the school receives the support of the government and the education department because it has human, material resources and resource funds. Aspect support. There is a certain contradiction between the two. How to interact is the inevitable path for the development of community and school sports.

2. THE STATUS QUO OF COMMUNITY SPORTS

Since the reform and opening up, China's sports reforms have gradually deepened, and the people's awareness of participating in sports has been further strengthened. More and more people can accept spending money to buy health and consciously take physical exercises. Community sports have gradually broken through traditional management. System, and realized the pattern of segmentation and block-based. There are about six characteristics of current community sports, including the basic organization of the form, the aging of the participants, the autonomy of organization and management and the combination of administration, the main activity in the morning and evening, and the integration of the content of the activity and the standardization of the activity site. Nowadays, the number of people participating in sports in China is increasing. People around them are gradually joining as their own needs increase. This makes community sports play an important role in urban development and construction, but the human and material resources in sports The shortcomings of capital culture and capital culture have become increasingly prominent. These sports are extremely lack of scientific guidance. According to relevant statistics, it is found that both community sports managers and instructors are too old, there are more women than men and they are not well-educated. There are basically no national and first-level instructors, second-level and third-level instructors. This also shows that the number of professional instructors in community sports is insufficient. Most of them have not received professional training and obtained certificates. Also, when people participate in physical exercise, the method is not correct, and the venue is often insufficient, which is the leading factor restricting physical exercise and participation. Just like the community sports facilities in some areas only occupy a small part of the venue, and they are relatively simple. There are even no places dedicated to sports training [1].

3. CURRENT STATUS OF SCHOOL SPORTS

At present, all stages of education in our country attach great importance to physical education, and with the assistance of the government and education departments, perfect sports facilities have been established and equipped with professional teachers, tools and equipment. In particular, all colleges and universities have accumulated over the years and other aspects are relatively complete, indoor and outdoor training venues and professional instructors, such as basketball courts, football courts and volleyball courts are becoming more and more perfect, and even qualified schools will also set up swimming pools and gymnasiums. And so on, can basically meet the needs of students in all aspects of physical exercise. According to statistics, it is found that many colleges and universities, except for the use of college students, are also shelved during weekends or winter and summer vacations, and few are open to the outside world.

4. ANALYSIS OF THE POSSIBILITY OF COMBINING SCHOOL SPORTS AND COMMUNITY SPORTS

Sports in schools and communities are inevitable conditions for the healthy development of the whole people in our country. The two have a certain connection. Analyzing from a theoretical perspective, community sports and school sports are both part of the national fitness. The community is like a kind of school sports. extend. In terms of time, community sports are mainly in the school's non-teaching stage, because students and some community members have different exercise time and habits, just like students basically participate in Monday to Friday, while sports projects in the community are all different. In the morning or in the evening, if the school can scientifically allocate the exercise time in the community, and complement each other's resources to achieve sharing, this can promote the integration of the two. In terms of space, community sports and fitness activities are relatively fixed, and the scope of activities is usually not large. They are basically open in residential areas. The school is mainly based in the city, so the combination of the two provides favorable conditions. Based on the analysis of resource sharing and the development of the sports industry, school sports venues in some areas will be rented out. For example, in addition to renting school sports venues to community sports during class, this is the integration of the two. The most common Sports events or sports performances carried out in a certain area, including corporate governments or other social units, may be used. There are also talents. Sports professional instructors in some schools will take advantage of their own holidays to go to community sports venues. Give guidance to the people. In addition, the school has a good cultural atmosphere and enriches the folk customs of community sports. Therefore, the process of combining the two is not limited to the above aspects. The culture can also integrate and promote each other through communication and interaction. With the development of spiritual civilization in the region, if students can participate in community sports, their national cultural concepts and sense of national identity will be further improved [2].

5. EFFECTIVE MEASURES TO COMBINE SCHOOL SPORTS WITH COMMUNITY SPORTS

At this stage, we must give full play to the respective advantages and functions of community sports and school sports, promote good interaction between the two parties, realize mutual official resources, change the independent sports status of schools and communities in the past, and regard schools as a part of the social system. Further achieve integration. Related events can be carried out, students and teachers participate in socially organized sports competitions, with schools in the community as the main body and the community assisting in the work to build a distinctive club, and the members can build projects according to their own interests. Professional teachers who go to school should actively go to the community, use their teacher ethics to train college students, and at the same time provide physical exercise guidance to the elderly in the community, so as to make up for the lack of domestic community sports instructors. Nowadays, some ordinary colleges and universities have sufficient teacher power. Among them, college students can obtain a lot of sports knowledge from teachers. After graduation, they also have to assume the responsibility of community service, and the knowledge they have mastered can be used in community sports. Professional teachers should be encouraged to participate in community sports during holidays and holidays. Some residents in the community have special skills. These belong to a kind of folk customs and culture. When students and teachers participate, they can also get their feelings. Schools should open their doors. For example, sports venues and various facilities should be open to the public during holidays when students are not in class. They are divided into paid and unpaid. You can choose freely according to the actual situation, but you must sign a good agreement for the community organization department and the person in charge to sign. If the sports facilities in the school are damaged, they should be compe

6. CONCLUSION

To sum up, in the context of national health, the integration of school and community sports is an inevitable trend, but it also requires relevant workers to find connections and outstanding problems, and effectively solve and optimize them to provide for the development of sports in my country. power. I hope that the content of this article can be used as a reference for people engaged in sports work.

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The Construction of Normal Majors in Colleges and Universities Under the Background of Professional Certification

Chunping Guo, Desheng Feng
Hezhou University, Hezhou, Guangxi 542899, China

Abstract: With the development and progress of society, the certification requirements of teachers' major in colleges and universities are becoming higher and higher. The professional certification of teachers in colleges and universities conforms to the trend of The Times and is also an important performance of improving the quality and ability of teachers in China. In the process of practice, the construction of teachers' specialty in colleges and universities has achieved good results, but there are also some problems, such as the contradiction between the physical constitution of specialty and the integration of double specialty, and the correlation between the national examination and the lost value of teachers' specialty. In view of this, the author of this paper will be from the background of professional certification in the context of the construction of teachers in colleges and universities the problems and the specific measures of the construction of teachers in colleges and universities under the background of professional certification to carry out a specific exposition of these two aspects.
Key Words: Professional Certification; Colleges And Universities; Normal Major; The Construction And Understanding

1. PROBLEMS IN THE CONSTRUCTION OF NORMAL MAJORS IN COLLEGES AND UNIVERSITIES UNDER THE BACKGROUND OF PROFESSIONAL CERTIFICATION

1.1 Contradiction between the materialized constitution of specialty and the integration of dual specialty

For a long time, the training of pre-service teachers in China mainly relies on the leadership of the government. In the process of professional setting, it mainly relies on the form of declaration, audit and acceptance. This kind of government-led bidding mode will make colleges and universities form a fixed mode in the process of talent training. To let the students in our study is like an item on the production line, this model is also referred to as "professional curriculum" pattern, this pattern is mainly in the process of the use of specific performance in the professional, professional, course this logic model, mainly for students based on the teachers' professional quality, the cultivation of knowledge. In this mode, normal university students mainly keep the consistency with teachers' profession in the process of development. However, it has low requirements for the personalized development of normal university students and can not give play to the school's professional characteristics. In the long run, there will be a sameness phenomenon [1].

Compared with other majors, normal majors are slightly different. One of the most prominent is the dual specialty between discipline and education. In this process, it is not only necessary to have the identity of a student, but also to have the professional ability of a teacher in the future, which is different from other professional learning in the society, such as lawyers, architects, accounting and other majors will have a certain degree of independence, but normal students need to have both. Normal students are also teachers in the future. In this process, they not only need to learn professional course knowledge, but also need to learn to be "teachers". The theme of learning is relatively complex. In addition, the teaching environment involved in the interaction between teachers and students as an important part of teaching in this process is uncertain, so it also affects the professional level of teachers. In the daily teaching process, teachers need to constantly improve their own teaching methods and methods, and constantly solve specific problems in specific situations. Teachers also need to constantly conduct self-examination and comprehensive comparison, and conduct in-depth research on the four aspects of subject content, teaching methods, students' reality and learning situation. Make knowledge "live" when explaining to students. However, in the system of professional materialization, teachers, facilities and funds involved in the process of teaching need to be solved, which is an important reason for the "dual specialty" integration of teachers' majors [2].

1.2 The correlation between the National examination and the loss of the value of teachers

For a long time, teachers of basic education in China are mainly trained by professional independent normal colleges, and the basic identification of pre-service teachers is mainly determined by their academic qualifications. That is to say, normal university students can teach and obtain teacher certificates as long as they have obtained relevant academic qualifications. However, teachers who have been in this mode for a long time can no longer better meet the teaching requirements under the new situation. Therefore, in 2015, China has begun to carry out the comprehensive implementation of the "national examination" system, I only hope that through this form can let our teacher team to optimize, improve the threshold of teachers, so that teachers in the future society will become more and more valuable occupation. However, in the actual application process, due to a lot of complicated factors, the "national examination" system in today's society has not achieved the original intention of establishing the "national examination" system at that time, and the teacher's ability has been gradually weakened. Insufficient attention has been paid to the interaction between theory and practice and the promotion of professional progress of normal university students, and the status of the normal university has become precarious due to the passing rate of the national examination, all of which affect the development and progress of the normal university [3].

2. SPECIFIC MEASURES FOR THE CONSTRUCTION OF NORMAL MAJORS IN COLLEGES AND UNIVERSITIES UNDER THE BACKGROUND OF PROFESSIONAL CERTIFICATION

2.1 Dematerialization of majors

"Specialty" under the paradigm of "curriculum combination specialty" is mainly manifested in the integration of knowledge and ability, and the orientation of this specialty will directly affect the concept of output orientation. The professional development should meet the needs of The Times. On the one hand, with the development and progress of the society, preschool education, primary school and middle school teaching in normal majors are developing at a relatively fast speed in all aspects. On the other hand, the normal university students recruited by each school have an important influence on their final employment direction. Therefore, the curriculum combination of colleges and universities under the paradigm of "curriculum combination specialty" should become more diverse, so as to meet the requirements of modern social development. At the same time, teachers of normal major in colleges and universities should make a comprehensive analysis of the professional development vision and timely carry out teaching reform. In the process of teaching, teachers should form a whole, and each other can form a benign magnetic field. They are no longer passive education managers, so as to improve the quality of teaching.

2.2 Subject materialization

Due to the characteristic of double majors, in the process of teaching, in order to better cultivate teachers of related majors, the teaching of normal majors should be combined with multiple teaching subjects to carry out specific teaching research. So that school can in daily teaching in the process of building the specialized subject to explore research group, ensures better service in the normal class students, better teaching, make the teaching can be done in the true sense into effect, improve the teaching quality and guarantee the efficiency of teaching, for professional certification in China under the background of the construction of professional of teachers to share, More teachers can participate in it to realize the unification of teaching and learning [4].

3. CONCLUSION:

In the context of teacher certification, colleges and universities should be student-centered and output-oriented in the process of development, and can continue to improve in the process of development, so as to promote the comprehensive development of teacher certification in the process of development. In the process of development, it is necessary to make the specialty materialized, and build the normal specialty according to the model of curriculum group and specialty. Secondly, it is necessary to make the subject materialized so as to build the normal specialty group. At the same time, it is also necessary to achieve curriculum modularization, according to the different ability to build different teaching modules. Last but not least, the academic teaching is to set up professional teaching teams in schools according to the requirements of teachers in the teaching process. Only in this way can we keep pace with The Times and not be eliminated in the process of development, so that China's education and teaching cause will develop more vigorously.

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The Closer Japan-India Defense Partnership: A Case Study of the Second Abe Administration's Japan-India Defense Diplomacy

Zizhang He
Graduate School of International Cooperation, Kyorin University, Japan

Abstract: Since the second Abe administration, security relations between Japan and India have been strengthened. Currently, the security relations between the two countries are improving from bilateral relations to multilateral relations, and the military cooperation between the two countries is deepening. This article clarified the characteristics of each process by analyzing the three processes by which Japan and India promoted relations in the field of security. It also clarified the background and issues for promoting security relations between Japan and India.
Keyword: Japan-India Security Relationship; Second Abe Administration; Japan Diplomacy; Military Cooperation

1.INTRODUCTION

In recent years, Japan-India security cooperation has been developing. The leaders of both countries visit the other country alternately every year to hold regular discussions on administrative vice-ministerial-level meetings, foreign affairs and defense ministerial-level talks, maritime policy, space policy, counterterrorism measures, and so on. The closeness of security relations between Japan and India began gradually in the 2000s. India conducted a nuclear test in 1998, and Japan strongly opposed this and imposed strict sanctions on India. In August 2000, Prime Minister Yoshiro Mori visited India as sanctions continued and began rebuilding Japan-India relations. Then, in 2005, Prime Minister Atal Bihari Vajpayee visited Japan and announced with Prime Minister Junichiro Koizumi that both of countries would conclude a "global partnership" to "contribute to the stability and prosperity of Asia and the world in the 21st century." In 2006, Prime Minister Shinzo Abe announced the conclusion of a "strategic global partnership" with Prime Minister Manmohan Singh. Then, in 2008, Prime Minister Taro Aso and Prime Minister Manmohan Singh announced the "Joint Declaration on Security Cooperation," and Japan-India security cooperation began to deepen. From this background, it can be seen that Japan-India security cooperation has established an action plan and steadily deepened it since 2000.

In particular, the two countries further promoted security cooperation within the long-term administration of the second Abe administration, which was born at the end of 2012. Since 2013, the two governments have been able to proactively hold meetings with leaders and related ministers to deepen security cooperation, and have achieved great diplomatic results. Among them, Prime Minister Abe fused the "Free and Open Indo-Pacific Strategy" that includes ocean security cooperation and infrastructure development with the "Indo-Pacific Strategy" advocated by the US Trump administration and included India in it. , Expanded the scope of Japan-India security cooperation and developed from bilateral relations to multilateral relations.

Yet, Japan-India security relations did not become closer during the second Abe administration, and there were various arrangements. This article clarifies the characteristics of the process of closer Japan-India security relations from 2013 to 2020 and hopes to deepen the understanding of Japan-India security relations. I would also like to clarify the background of the closer defense diplomacy between Japan and India and the challenges that Japan and India will face in promoting security cooperation in the future.

2.CHARACTERISTICS OF CLOSER JAPAN-INDIA SECURITY COOPERATION UNDER THE SECOND ABE ADMINISTRATION

The security relations between Japan and India under the second Abe administration, which ran from 2013 to 2020, have deepened since the 2000s. This paper argues that there were three major features that contributed to deepening the security relationship between the two countries. The first occurred between 2013 and 2014, the second occurred in 2016, and the third took place between 2017 and 2020. The characteristics of each period will be discussed in detail below.

The first feature appears from 2013 to 2014, specifically the deepening of Japan-India defense relations and the cautious attitude of India towards China. In May 2013, Prime Minister Abe and Prime Minister Manmohan Singh agreed to strengthen their security alliances with the rise of the Chinese Navy in mind and decided to hold regular naval military exercises to strengthen their security relation. [1] Then, in January 2014, Defense Minister Onodera met with Defense Minister Antony in New Delhi, where he visited, and agreed to promote cooperation and exchanges between the Self-Defense Forces and the Indian Army over land, sea, and air. [2] Thus, it can be said that the leaders and defense ministers of both countries have been able to build good relations over the last two years.

Military exchanges between the two countries have also been held every year for the past two years. In December 2013, the Maritime Self-Defense Force and the Indian Navy conducted the first joint training mission in the Indian Ocean off Chennai, southern India. Then, in July 2014, Japan was invited to the US-India military exercise

"Malabar 14" and participated in it despite protests from China. In military exercises, in addition to anti-submarine warfare, anti-surface warfare, and anti-air warfare, on-site inspections and search and rescue training were conducted to strengthen military cooperation between Japan, the United States, and India. [3] Since this military exercise was carried out, Japan-India security cooperation has expanded from bilateral to trilateral relations incorporating the United States.

However, when Japan-India security relations develop, an event occurs that causes the bilateral relations to recede. As of August 2014, both Japan and India had agreed to raise the level of foreign defense minister-level talks to ministerial talks, but India decided to postpone the agreement since India wanted to avoid stimulating China. [4] From this, it can be said that Japan and India were able to develop security relations to some extent in 2013 and 2014, but did not reach a closer relationship. Behind this is the intention of the Japanese government to restrain China's advance into the ocean, but there is also the intention of the Indian government not to provoke China, revealing a contradiction in the cooperation of the Japanese and Indian governments.

It appears from 2015 to 2016, specifically, that Japan-India defense dialogue is becoming more frequent and more countries are included in Japan-India security relations. In addition, the scale and quality of military exercises between the two countries have improved, and the content of joint training has increased. In April 2015, the Japanese and Indian governments held a Foreign Defense minister-level dialogue in New Delhi. By confirming that a future Deputy Secretary-level dialogue will be held every year during this dialogue, the defense dialogue between Japan and India will be held more frequently than before. Japan participated in the US-India military exercise "Malabar 15" held in October 2015 and is now an official member for the first time. [5] And until now, Japan, considering China's protests, only participated in the exercises in the waters near Japan, but this time it was decided to participate in Pengal Bay, so the scope of Japan-US-India military exercises was expanded. In November of the same year, Prime Minister Abe met with Prime Minister Modi, shared concerns about China's advance into the ocean, and agreed to promote maritime security cooperation between Japan, India, and the United States. As part of this, it was agreed that the Maritime Self-Defense Force would regularly participate in the joint training "Malabar" of the US-Indian Navy in the Indian Ocean. [6] The Japanese and Indian governments have improved mutual security relations.

Since 2016, Japan and India have not only participated in "Malabar 16" military exercises in June with the United States, but also in October, Japan, India, and Indonesia's three maritime security agencies joined forces to guard maritime security in the region.[7] Indonesia's participation can be said to have made the Japan-India security framework a more multilateral framework with the addition of countries other than the United States. Furthermore, unlike the conventional strengthening of cooperation by the military, this maritime security training was to confirm the cooperation of the Japan Coast Guard, so by deepening the Japan-India security relations from various directions, the quality of the relations between the two countries will be improved.

The third feature will appear from 2017 to 2020, specifically, strengthening Japan-India security cooperation, promoting the “multinationalization” of the Japan-India security framework, and diversifying Japan-India security cooperation. Regarding the strengthening of Japan-India security cooperation, in April 2017, in addition to the Japan-India Navy joint training so far, the Ground Self-Defense Force and the Air Self-Defense Force began studying joint training with the Indian Army and Air Force. In October 2018, a joint training exercise was held between the Japan Ground Self-Defense Force and the Indian Army for the first time. [8]Following the joint training of ground forces, it was decided that joint training between the Japan Air Self-Defense Force and the Indian Air Force would also be conducted at the Agra Air Force Base in India. [9] The start of joint training by the land and air forces means that Japan-India security cooperation has been further strengthened. In addition to military cooperation, Japan and India have further strengthened mutual security-related cooperation at the government level. In October 2018, Prime Minister Abe met with Prime Minister Modi at their official residence and agreed to hold the Foreign Defense Ministerial Conference (2-plus-2) for the first time. [10] The 2-plus-2 talks failed in 2014, but were put on hold due to tenacious negotiations between the two governments. At the first talks held in November 2019, the two ministers agreed to hold fighter training for the Japan Air Self-Defense Force and the Indian Air Force in Japan and agreed to strategically deepen security cooperation. Through these 2-plus-2 talks, the Japanese and Indian governments were able to show the international community the close relationship between the two countries in the field of security.

Concerning promoting the “multinationalization” of the Japan-India security framework, more and more countries have been working together with Japan and India to ensure the security of the Indo-Pacific region from 2017 onwards. For example, in October 2017, US Secretary of State Rex Tillerson of the Trump administration gave a lecture on US policy toward India in Washington, while emphasizing cooperation with Japan and India to restrain China's strengthening of its marine expansion. While he also expressed his intention to increase the number of countries participating in the joint maritime exercise "Malabar" with Japan, the United States, and India within a few years, it became clear that he was keeping countries such as Australia in mind. [11] In August 2020, it became clear that senior security officials from Japan, the United States, India, and Australia would hold a meeting aimed at strengthening unilateral progress in the region, particularly against the backdrop of military power in the region. It was to confirm the security cooperation with China. [12]

In addition to the United States and Australia, in October 2018 and May 2019, Japan and India, along with the

Philippines and Sri Lanka, appealed for strengthening security cooperation with these countries through joint naval exercises and search and rescue training, respectively. By 2013, the security framework, which consisted mainly of Japan and India, had become increasingly more multinational with the participation of countries such as Australia as well as the United States.

The diversification of Japan-India security cooperation was also promoted by the two governments. From 2013 to 2016, the Japanese and Indian governments mainly used land, sea, and air military exercises and various training exercises, as well as ministerial-class talks, as a means of strengthening mutual security cooperation. In 2017, the two countries developed two new cooperation methods, strengthening these cooperation methods and strengthening their cooperation methods.

The first is the start of discussions on the Acquisition and Cross-Servicing Agreement (ACSA) between Japan and India. Defense Minister Onodera, who is visiting India in August 2018, confirmed further strengthening of cooperation during a meeting with Defense Minister Sitaraman and agreed on a mutual provision of goods and services between the Self-Defense Forces and the Indian Army. [13] The start of the talks so far has been different from the joint military exercises but it deals with the details of military cooperation, which shows that Japan-India cooperation in the field of security has become more fragmented.

The second is the development of defense equipment by the Japanese and Indian governments. At the 4th Defense Equipment and Technical Cooperation Office Level Conference (JWG-DETC) held in Delhi in July 2018, discussions progressed between the two countries to identify specific areas of cooperation. Then, in August of the same year, joint research in the field of unmanned landing vehicles (UGV) / robotics was started as the first cooperation project between the two countries between the Acquisition, Technology and Logistics Agency of Japan and the Defense Research and Development Organization (DRDO) of India. [13] It can be said that defense technical cooperation in the field of Japan-India security has been deepened. As a result, Japan-India cooperation on both sides has diversified the partnership between Japan and India in the field of security.

As mentioned above, we have clarified how Japan and India have promoted cooperation in the field of security for the period from 2013 to 2020. From the analysis results, it can be said that the current Japan-India security relationship is no longer a bilateral relationship, but a multilateral relationship involving various countries. In addition, the two countries are not only promoting multilateral cooperation in the field of security but also striving to diversify the areas of cooperation between the two countries. As this cooperative relationship progresses, it can be expected that the Japan-India security relationship will become even stronger. Below, I will analyze not only the factors that have rapidly deepened Japan-India security relations in recent years but also their issues.

3.FACTORS THAT DEEPENED JAPAN-INDIA SECURITY RELATIONS AND ISSUES RELATED TO JAPAN-INDIA SECURITY

First, China's foreign actions in recent years have been the main factor behind the deepening of Japan-India security relations. From the perspective of Japan and India, China's advance into the ocean, which has become prominent since the 2000s, has become a threat to both countries. For example, between 2000 and 2015, the United States built and deployed 13 new submarines. During this period, China built and deployed 42 ships, including two destroyers. This means that America's overwhelming military dominance has been shaken more than ever. [15]

The Indian side has also begun to recognize the importance of gradually deepening security relations with countries such as Japan and the United States in response to the recent strengthening of China's national power. In a 2014 survey conducted by the Pew Research Center in India, about half of the countries India would ally with were the United States, 29% were Russia, and 26% were Japan. [16] Due to the influence of these voices in India, Japan-India security relations have been strengthened.

Second, the task for Japan-India security relations in the future is to prevent China from becoming a full-fledged rival. Certainly, China's military buildup poses a threat to both Japan and India, but if Japan-India security relations show a clear intention to establish a siege against China, it will lead to a confrontation with China and the Indo-Pacific region that will lead to a confrontation with China and jeopardize the security and prosperity of the region. Therefore, Japan and India should actively seek to have a security dialogue with China and reduce the degree of threat awareness within China. Another issue in Japan-India security relations is that the security strategies of both countries are inconsistent. In particular, the threat perceptions of China, which contribute to the promotion of defense and security cooperation between Japan and India, and the strategies to deal with them are not always uniform. India, which adheres to strategic autonomy, does not rule out building close ties with specific nations but has a non-aligned tradition of leaving room for India to make its own decisions. Thus, regarding security relations, it seems that Japan and India have been moving toward a quasi-alliance in recent years, but when a situation occurs in which India's national interests are not significantly affected, Japan would be hard pressed to obtain cooperation from India. "This difference in strategy will continue to pose a major challenge to Japan-India security relations."

4.CONCLUSION

This article analyzed how Japan-India security relations from 2013 to 2020 have rapidly approached and developed. From the analysis results, it became clear that Japan and India gradually strengthened their cooperation in mutual security through three stages. The current Japan-India security framework has become a multilateral framework, and the two countries not only deepen exchanges between units through annual military exercises, but also deepen cooperation in terms of technical cooperation and defense equipment development. Behind such close Japan-India security relations are concerns over China's rapidly rising military and economic power in recent years. However, simply recognizing China as a threat and countering it will not last in the long run and may lead to a regional arms race. In this regard, how Japan and India develop stronger diplomatic relations with China will be important in determining regional security.

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A Study on The Role of Ideological and Political Courses in Colleges and Universities as The Main Position Of Patriotic Education In The New Era

Yanhua Hu
Zunyi Medical University, Zunyi, Guizhou, 563000, China

Abstract: The ideological and political theory courses in colleges and universities are the main front of patriotism education, and bear the important mission of cultivating students. It is necessary to integrate patriotism education into the teaching of ideological and political courses in an all-round way.To grasp the changes of the subject, object, content and carrier of patriotism education in the new era, to explore the measures for college ideological and political courses which play the role of the main position of patriotic education today, is aiming to cultivate qualified talents in the new era and to realize the great rejuvenation of the Chinese nation in the further way. Ideological and political courses in colleges and universities must do everything possible to play the role of the main position of patriotism education, to shoulder the responsibility and mission of educating talents for China.

Keywords: Ideological And Political Courses In Colleges And Universities; The Main Position Of Patriotism In The New Era; Measures

1.INTRODUCTION

During the 29th collective study session of the Political Bureau of the 18th CPC Central Committee, General Secretary Xi JP emphasized that patriotism education must be taken as an eternal theme, people should vividly spread the spirit of patriotism and sing the main theme of patriotism. Socialism with Chinese characteristics enters a new era. In the era, in order to vigorously promote the spirit of patriotism, the Central Committee of the Communist Party of China and the State Council have issued the *Outline for the Implementation of Patriotism Education in the New Er*a(hereinafter referred to as the *Outline*). Ideological and political courses in colleges and universities are the main position of patriotic education and bear the important mission of cultivating students. It is necessary to integrate patriotism education into the teaching of ideological and political courses in an all-round way, and to explain to students clearly the essential connotation of patriotism in the new era, and to interpreter why we should bear the spirit of patriotism and how to obtain it in order to stimulate students' great enthusiasm for the party, the country, and the socialism.

2. A NECESSITY PROBE INTO THE MAIN ROLE OF PATRIOTISM EDUCATION WHICH PLAYED BY IDEOLOGICAL AND POLITICAL COURSES IN COLLEGES AND UNIVERSITIES IN THE NEW ERA

2.1 Ideological and political courses in colleges and universities are the main front for systematically developing patriotic education in the new era

There have the same educational goals, educational contents and educational objects between the Ideological and Political Courses in Colleges and Universities and the Patriotism Education in the new era. The aim of the teaching of ideological and political courses in colleges and universities is *under the leadership of the party, guided by Xi's thoughts on socialism with Chinese characteristics in the new era, to train generations of socialist builders and successors, and create new generations who are responsible for national rejuvenation*, which same as the goal of The Patriotic Education. The teaching of ideological and political courses focus on the main courses-putting political identification, family and country feelings, moral cultivation, awareness of the rule of law, and cultural literacy as the important contents, taking the feeling of loving the party, the country, the socialism with Chinese characteristic, the people and the collective as the main courses, making the same feeling for the country, for the party and for the socialism with Chinese characteristic, and operating systematic theory education of Marxism, which adhere to The Patriotic Education's-insists on arming the whole party and educating the people with Xi's new era socialist thoughts with Chinese characteristics, and development the education of socialism with Chinese characteristics and Chinese dream in-depth way. "The target of the ideological and political course teaching is that patriotism education in the new era should be for all people and focus on young people",[1] which is clearly stated in the *Outline.*The educational goals, educational contents, and audiences of ideological and political courses in colleges and universities are consistent with those of patriotism education in the new era. The core content of ideological and political education in colleges and universities is patriotism education, which determined it must be the mainstay for systematically developing patriotic education in the new era. The position of it is a treasured ground for patriotic education.

2.2 Inherent requirements for inheriting excellent culture and promoting national spirit

Ideological and political courses in colleges and universities shoulder the responsibility and mission of inheriting excellent traditional culture and promoting national spirit. Patriotism is the core of the Chinese national spirit. The patriotism education of ideological and political education in colleges and universities in the new era is an inherent requirement for inheriting excellent culture and promoting the national spirit. Ideological and political courses in colleges and universities ,where carry out patriotism education in the new era, to help students to build the foundation of traditional culture, to strengthen their national spirit. To pay attention to cultivating college students' national consciousness, so they have a sense of mission for the prosperity of the country, and love the country and the nation, which can strengthen their own sense of identity for the civilization, customs, and to form a unified core value finally.Making them are proud of being a descendant of Yan-Huang, are proud of the five thousand years of civilization in his country, and they actively knowing, learning, practicing, and spreading 5000 years of Chinese civilization. To cultivate college students who are full of national spirit and patriotism, we must convince them that our Chinese nation has the determination to restore the old on the basis of self-reliance, and the ability to stand on its own among the nations of the world, guiding them to be a new youth with ambition, backbone and confidence.

3. ANALYSIS OF THE PREDICAMENT OF IDEOLOGICAL AND POLITICAL COURSES IN COLLEGES AND UNIVERSITIES TO PLAY THE MAIN ROLE OF PATRIOTISM EDUCATION IN THE NEW ERA

3.1 Insufficient attention is paid to the role of the main position of ideological and political courses in colleges and universities, and the penetration of patriotism education is not enough

General Secretary Xi JP said during an investigation in Anhui in 2016: Revolutionary traditional education should start from the children, both focusing on the instillation of knowledge and strengthening the cultivation of emotions, so that the red gene can penetrate the blood and the heart. Ideological and political courses in colleges and universities not only must be taught Knowledge and pay attention to academic rationality, but also focus on patriotism education. At present, ideological and political courses in colleges and universities still have insufficient penetration of patriotism education. In the process of teaching courses, some teachers only complete the textbook knowledge for the purpose of teaching, and fail to penetrate patriotism education well. Ideological and political courses in colleges and universities effectively penetrate the patriotism education in the new era, with clear-cut lectures on the essential connotation of patriotism, why and how to patriotism, involving the fundamental issues of curriculum education, and it is the practice of patriotism education in the new era

3.2The wave of globalization has weakened the patriotism and national identity of college students

With the intensification of the wave of globalization, college students' sense of national identity and patriotism have been negatively affected. University time is an important period for college students to shape their outlook on life, world outlook, and values. It is also a period of unrestrained thinking, pursuit of ideals, and freedom. However, due to insufficient life and social experience, they are easily affected by external factors. Various diverse cultures are integrated with Chinese culture.Some Western countries and scholars spread Westernized values under the guise of democracy and freedom. The patriotism and national identity of college students have weakened, and some students worshiping foreign and foreigners, but ignoring the national spirit and traditional culture of the their own country. Some of them can tell the constellation and hobbies of a popular star, but knows little about the country's historical figures, scientists and people who have made outstanding contributions to the country. As the saying goes, people who have no spirit will not stand, and a country will not be strong if there is no spirit. If this situation continues, colleges and universities will face great difficulties in carrying out patriotic education in the new era.

3.3 Ideological and political courses in colleges and universities fail to effectively integrate excellent traditional culture into classroom teaching

Excellent traditional culture is an important content carrier of patriotism education. In the ivory tower of colleges and universities, the spirit of patriotism is stronger than that of society, but such spirit doesn't cultured by all students. Some bad habits in society always affect contemporary college students. Some students' outlook on life, world outlook and values are deeply influenced by it. China is a country of civilization and etiquette, and China's traditional culture has a long history. To be patriotic, we must love our excellent traditional culture. In the development of ideological and political courses in most colleges and universities, teachers pay more attention to teaching the knowledge of textbooks, while ignoring the integration of excellent traditional culture.

3.4Failure to accurately grasp the changes in patriotic education in the new era

Social existence determines social consciousness. In the new era, patriotism education's theme, education object, education content, and education environment are all undergoing tremendous changes. First of all, the *Outline* points out that patriotism education is education for all and emphasizes the diversity of education subjects, party committees and governments at all levels are responsible subjects, various social organizations are coordinating subjects, and the masses of people are social subjects. Second, the hierarchy of educational objects is obvious. With the change of the times, the object of education becomes more individualized. Third, the content of education is becoming more abundant. The content of patriotism education in the new era continues the high-quality content, incorporates high-quality educational elements that are full of times, and the educational content is becoming more and more abundant. Finally, the carrier of patriotism education in the new era is richer and is advancing with the times.

The patriotism education in the new era of ideological and political courses in colleges and universities needs to strengthen grasping these new changes, and the subsequent reforms of educational methods and educational content should be rich.

4. RESEARCH ON THE PATHS FOR COLLEGE IDEOLOGICAL AND POLITICAL COURSES TO PLAY THE MAIN ROLE OF PATRIOTISM EDUCATION IN THE NEW ERA

4.1Pay attention to the cultivation of talents and strengthen the construction of ideological and political teachers in colleges and universities

Teachers are the key to running ideological and political courses in colleges and universities. *The Regulations on the Construction of Ideological and Political Theory Teachers in Colleges and Universities in the New Era* (hereinafter referred to as the *Regulations*) issued by the Ministry of Education clearly stated that create a strong political force, deep feelings, new thinking, have a broad vision, strict self-discipline, and upright personality, full-time-based, professional-cum-part-time, sufficient, and high-quality college ideological and political teachers as the goal.

According to the *Regulations,* total number of full-time students in school, the full-time ideological and political course teacher positions shall be approved in strict accordance with the teacher-student ratio of not less than 1:350. However, some colleges and universities are facing new situations and new challenges, and the importance of ideological and political courses remains to be understood. The proportion of ideological and political teachers is not up to the prescribed ratio. There are a small number of full-time ideological and political teachers busy with administrative affairs. The full-time ideological and political teachers in the class have a heavy workload, a large amount of class hours, and limited energy. It is difficult for the teachers to display their initiative, enthusiasm and creativity. To solve this dilemma, the importance of ideological and political courses needs to be emphasized. According to the requirements of the *Regulations*, a team of full-time ideological and political teachers with sufficient numbers and good quality should be allocated in accordance with the requirements of the *Regulations* to establish a sound evaluation and encouragement. The mechanism, less administrative affairs, allows ideological and political teachers to return to teaching and scientific research themselves, pay attention to their own scientific beliefs, cultivate family and country feelings, strengthen theoretical learning, and cultivate exquisite ability, so that college ideological and political teachers will be brilliant. Only by fulfilling the fundamental task of ideological and political courses, establishing morality and fostering people, can the Marxist world outlook, outlook on life, and values could be better disseminated, and can better cultivate patriotic college students for the country. [2]

4.2 Enriching the content of education, focusing on integrating ideological and political courses into patriotic education in colleges and universities

"In the teaching of ideological and political courses in colleges and universities, the content of patriotism education is enriched, the teaching methods are innovated, the education of national conditions and the situation and policies are deepened, the national spirit and the spirit of the times are vigorously promoted, the history of the party, the history of the country, and the history of reform and opening up are extensively carried out. A high degree of unity with love for the party and love for socialism." [3]

The first is to correctly use historical materialism to pass on history. Patriotism is "the deepest feeling for our motherland that has been consolidated for thousands of years, and it is loyalty and love to our motherland." We must dig out the content of patriotism education contained in history, which has been continuous for thousands of years. Chinese civilization and cultural classics contain abundant patriotic education resources. Dong Cunrui, Liu Hulan and other vivid historical figures, Mao Zedong, Zhou Enlai and other older generations of proletarian revolutionaries, the September 18th Incident and the July 7th Incident were all heroic. The telling of facts is like a symbol of reality infecting students, allowing them to remember history and truly understand "reading for the rise of China".

The second is to respect the sense of the times. The content of ideological and political education in colleges and universities originates from the times and transcends the times. The long river of history is endless, the wheels of the times are moving forward, and the content of patriotism education in the new era is rich and colorful. First of all, we must adhere to the guidance of Xi JP Thoughts on Socialism with Chinese Characteristics for a New Era. Xi's Thoughts on Socialism with Chinese Characteristics for a New Era is the latest theoretical achievement of localization of Marxism in China. It inherits and continues the patriotic thought of the Chinese nation. It is also based on the times. It embodies the broad mind of tolerance, openness, and inclusiveness. It is an important theoretical source for advancing patriotic education. Secondly, combine with the current social hot spots to explore the content of patriotism education. "Human life is the most important human right". Zhong Nanshan, who interprets the mission and responsibilities of medical practitioners, "I don't think it is a retrograde, I think it is a charge." All of them are written about responsibility and unity, showing the indomitable history and spirit of fighting the epidemic of the Chinese nation. Medical staff fighting on the front line of the fight against the epidemic, ordinary heroes holding on to different positions, and fruitful scientists and engineers are all fresh educational content of ideological and political courses in colleges and universities. These positive cases are sincere , which enriches the content of patriotic education, has a sense of the times, and is more likely to resonate with the object of education.

4.3 Adhere to integrity and innovation, and innovate the educational carrier of patriotism in the new era of ideological and political courses in colleges and universities

Keep in close contact with the actual situation of college students, innovate the patriotic education carrier of the new era of ideological and political courses in colleges and universities, keep abreast of the changes of the times, and reform and innovate education forms, education technology, education methods, Educational carrier according to different majors and different grades. The first is to make good use of traditional rituals. Seize some commemorative celebrations, such as the school's weekly flag-raising ceremony, the flag-raising, national anthem, salute and other ceremonies can be used to carry out situational patriotism education. The second is to create a walking ideological and political classroom. There are many patriotism education bases in our country, we have created walking ideological and political classrooms in colleges and universities, and brought students to patriotism education bases in a planned and organized manner. For example, the freshmen of the Marxism School of Zunyi Normal University organizes to visit the Zunyi Conference site. Zunyi Medical university, or its secondary schools and student party branch will use the time nodes such as the enrollment of new students and Qingming Festival to organize students to visit the site of the Zunyi Conference, go to the Red Army Mountain to sweep the tombs of the martyrs, and visit the red education bases such as the Loushanguan Revolutionary Site, that's can inspire deeper patriotism among students. The third is to carry out a variety of patriotic education activities in the school, such as the red cultural recitation competition, painting exhibition to add luster to the motherland, and the singing competition for motherland. Fourth, pay attention to top-level design, and schools should pay attention to patriotism education. The design and the construction of the campus landscape, full consideration should be given to the creation of the atmosphere of patriotic education. "Patriotic education is not short-lived, but permanent. This requires attention to the dominant carrier in the choice of carrier. Combine with hidden carriers to achieve a clear-cut and subtle effect." [4] For example, the construction of campus patriotism education corridors, red cultural pavilions, traditional cultural stations, etc., with statues, pictures, stories, rituals, videos, etc. The form reproduces the patriotic legend, so that students are exposed to it, and subtly received patriotic education.

4.4 Promote excellent national culture and respond to the challenges of internationalization

China's history of continuous development for thousands of years has never been interrupted, and it has formed a unique, broad and profound value concept and civilization system, which is unique in the world. General Secretary Xi JP pointed out that "The Chinese nation has a long history and splendid culture of more than 5,000 years, and the Chinese civilization has continued to develop from ancient times to the present. Why can the Chinese nation survive and develop stubbornly in the long history of several years? A very important reason is that our nation has the same heritage of spiritual pursuits, spiritual characteristics, and spiritual connections." Carrying forward the excellent traditional culture, inspiring college students' cultural pride hidden in their hearts, allowing college students to love the country, the nation, and the Chinese culture, and consciously resist the international influences and challenges of dross theories and ideas under the wave of globalization.

4.5"Internet + ideological and political courses", patriotism education moves towards new online media

Teaching methods are the means and channels for cultivating patriotism. Which teaching method to use must be selected according to the characteristics of students, times and teaching content. According to the *Statistical Report on China's Internet Development Status* released by the *China Internet Network Information Center* (CNNIC).As of December 2020, the number of Internet users in our country has reached 989 million. Among the Internet users, students account for the most, accounting for 21.0%. The educational structure of Internet users among them, college degree, bachelor degree and above accounted for 19.8%. College students have become a group of people running with mobile phones. "Online surfing", "the "lost sheep" of the information society", "the "right brained people" in the age of picture reading have become new labels for college students. The times are changing, and the receptors are changing. The teaching methods of ideological and political courses in colleges and universities should also keep pace with the times. "Internet + ideological and political courses" is a new topic for ideological and political courses in colleges and universities. With the help of network media, the advantages of fast communication speed, rich resource sharing, and diversified forms are connected online. Next, let patriotism education move toward the new network media, and create a "cloud-based college ideological and political course." In classroom design, we can design some online discussion topics in a targeted manner, and make full use of short videos, webcasts, aerial classrooms and other new and lively forms of "cloud college ideological and political courses" to carry out patriotism education, so that "indoctrination" Education has become the education of "moisturizing things quietly".

4.6Design practical teaching links to enhance the timeliness of patriotism education

Ideological and political courses in colleges and universities pay attention to classroom theory teaching and patriotism education. It should also pay attention to practical teaching links. The theory and practice are combined to guide students to cultivate family and country feelings to enhance the timeliness of patriotism education. Ideological and political courses in colleges and universities teach students the knowledge of patriotism, and at the same time, they should also teach students how to look at, analyze and think about problems in a scientific way, and learn to combine theory with practice. According to the characteristics of the course, it can guide students to discover and think about social issues, design practical teaching links, and set up small projects by schools, departments or teaching and research sections, divide the teaching students into several research groups, and use vacation or spare time to carry out social research activities. Students can visit the patriotism education base, visit the old Red Army, design and shoot a red micro-film, which can promote the great achievements of poverty alleviation, and can keep up with the pace of rural revitalization...Use their own eyes and feet to measure the great rivers and mountains of the motherland, to feel the magnificence of the great motherland with heart, to stimulate the emotional resonance of the students, and let the students feel that they are Chinese and proud.

The strength of the country is due to people, and talents come from learning. In order to cultivate qualified talents in the new era and realize the great rejuvenation of the Chinese nation, ideological and political courses in colleges and universities must do everything possible to play the role of the main position of patriotic education and shoulder the responsibility and mission of cultivating talents for the country.

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Strategies To Promote the Integration of Emotion and Skill in Piano Performance in Higher Art Education

Jing Li
Guangxi Arts University, Nanning, Guangxi 530022, China

Abstract: Higher art education, as a higher education that cultivates students' artistic professional quality and enhances students' practical teaching ability, has a significant impact on students' future careers. In the current piano performance teaching, there is still a problem of inappropriate connection between the students' piano performance skills and emotional expression. Many students blindly pay attention to the learning of the theoretical knowledge and skills of piano performance, while ignoring the importance of emotional expression. Sex, leading to a great decline in the artistry in performance. This article aims to explore the strategy of promoting the integration of emotion and technique in piano performance in higher art education.
keywords: Higher Art Education; Piano Performance; Emotion; Skills

1.INTRODUCTION

Higher art education itself is aimed at the cultivation of students' artistic quality, and piano performance is an important content in art education. To achieve the purpose of art education to students, it is not only to cultivate piano performance skills, but also to pay attention to skills and emotions. The integration of expressions, the piano repertoire played in this way can play a moving role, thereby improving students' piano performance skills and providing assistance for future career development.

2. THE IMPORTANCE OF THE INTEGRATION OF EMOTION AND TECHNIQUE IN PIANO PERFORMANCE

In the process of piano performance, emotion and skill are indispensable. Throughout the famous pianists, they are all involved in the process of performance, integrating themselves with piano performance, which is also the goal of piano teaching. . First of all, piano performance skills are the prerequisite guarantee for performance. The training of piano skills generally includes coordination training and scale training. These all put forward higher requirements on the performance skills of piano players. If you lack the skills of piano performance, The probability of making mistakes during the performance will be greatly increased. Secondly, emotional expression is the sublimation of piano performance. Performance without emotion is like stagnant water, and it is difficult to arouse the inner resonance of the audience. Emotion is like the soul in piano performance. It is carried by the coat of skill, so it is played in piano. In, the training of emotion and skill is equally important [1]. In the piano performance of higher art education today, attention has been paid to the integration of students' emotions and skills. However, due to the abrupt change of the way or the failure to integrate with the students' actual learning, the students' piano practice The combination of emotion and skills is not smooth, which affects the learning effect of students. Therefore, the existing teaching methods must be reformed in order to promote the combination of emotion and skill in piano performance, and promote the further improvement of students' piano performance level.

3. STRATEGIES TO PROMOTE THE INTEGRATION OF EMOTION AND SKILL IN PIANO PERFORMANCE IN HIGHER ART EDUCATION

3.1 Transform teaching methods

In the traditional piano performance teaching of higher art education, the focus of teaching is to improve students' knowledge of music theory and performance skills, while neglecting the cultivation of students' performance emotions. Different piano music contains different thoughts and emotional expressions. These are all based on the different creative background and central ideas. If you want to improve the piano emotional expression of students, you must learn to establish associations with the piano. Before teaching, teachers can give a brief introduction to the creators of piano music and their creative background, especially the products under special backgrounds. They can make full use of multimedia and other teaching tools to create a concrete and actual situation for students. , Students can establish a connection with the piano repertoire through their own associations, so as to have a deeper understanding of the emotions to be expressed in the piano, and express them during the performance through their own understanding. This associative teaching method can quickly bring students into the scene, which is conducive to the emotional expression of students in piano performance.

3.2 Cultivate students' aesthetic feelings for piano repertoire

In the current higher art education teaching, some students choose piano performance out of their own love, and some are out of the needs of the public's aesthetics. They use piano as a means to enhance their own strength. Such students are very interested in piano repertoire. Insufficient aesthetic feelings make it difficult to resonate with the repertoire in the process of performance. In the teaching of piano performance, we should focus on cultivating students' aesthetic emotions for piano music, and establish the connection between students and the repertoire through the support of aesthetic emotions, so that students recognize the artistry of piano performance from the bottom of their hearts, and in order to improve their performance Skills and continuous efforts. The cultivation of the aesthetic emotions of the students' piano repertoire can also master the students' aesthetic tendency in this process, so as to provide the students with personalized teaching guidance.

3.3 The fusion of emotional performance and key touch skills

In the process of piano performance, the expression of emotions takes many forms. Through the research on the performance of the pianist's live performance, it can be found that most of the players are not only the beating of the fingers on the keys, but also the body. With the change of piano emotion, there will be different degrees of swing. This change can be intuitively conveyed to the eyes of the audience, and it is also an expression of emotion in piano performance. There are many types of touch techniques in piano performance, such as light touch and deep touch, fast touch and slow touch, etc., through different touch techniques, showing different sounds and emotions. For example, when playing some melancholic and sad songs, the expression of emotion tends to be low and sad. Then the key touch technique will be used in a large number of deep touch keys. Through the strength of the arms and shoulders, the fingers can be moved together. A strong force falls on the keys, thus playing a deep and heavy tone. In some lively and playful repertoires, the quick-touch keys are often used to achieve rapid changes between the scales, so as to create a lively atmosphere. This form of performance that combines emotional performance and key touch skills is difficult for students at the beginning. Teachers should pay attention to the emotional guidance of students during the teaching process, and encourage students to achieve both through continuous practice. The fusion between them, in order to improve playing skills [2].

3.4 Cultivate a unique playing style

Playing style is the personal characteristic that students finally present when they combine skills, emotions and their own understanding in the process of piano performance. It is an important way to distinguish students' understanding of piano performance. In the teaching process, teachers should consciously guide students to form their own playing style and allow students to express their individuality in piano performance. Say goodbye to the traditional one-size-fits-all teaching method, encourage students to think and question themselves, just like in the technical expression of a certain section of piano performance, respect the students' self-will and expression, instead of imposing the teacher's own will on the students Only by creating a respectful learning atmosphere between teachers and students can students' interest in learning be stimulated. On the basis of personal love, students will gradually conduct in-depth exploration of piano performance, thus forming their own unique playing style.

4. CONCLUSION

To sum up, if we want to promote the integration of students' emotions and skills in piano performance, we must change the existing teaching methods and learn to use the association teaching method to teach, so as to create a real situational atmosphere for students' performance. Secondly, it is necessary to cultivate students' aesthetic feelings for piano music and form a unique playing style, so that students can continuously deepen their understanding and expression of performance in the process of appreciating the artistic charm of piano performance, so as to promote the improvement of piano performance.

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On The Design of Flipped Classroom in Higher Vocational English Based on Micro-Class

Qing Li
Jiangsu College of Tourism, Yangzhou, Jiangsu, China

Abstract: Under the new situation, with the development of modern information technology, the higher vocational English flipped classroom of micro-classes has been effectively developed and applied. Learning by watching videos has become a trend. Higher vocational English classrooms are filled with a large number of "deaf-mute" learners. If only the "cracking duck" teaching method is used, it will not be able to meet the current development needs. Micro-class application of flipped classroom design can inject fresh "blood" into classroom teaching, improve students' autonomy in learning, and meet students' individual learning needs. Focus on students, concise and concise lectures, integrate resources, and promote the reform of English teaching in colleges and universities.
Keywords: Micro-Class; English For Higher Vocational Colleges; Flipped Classroom Design

1. RAISING THE QUESTION

"Big data" and "cloud computing" have swept the world, and higher vocational education has also ushered in unprecedented challenges. People's cognitive style, thinking habits, and learning philosophy are all quietly undergoing major changes at this time. And breaking the barriers of the classroom, making "learning" ubiquitous, learners' demand for knowledge has also begun to expand, which promotes educational equity and educational efficiency [1]. After the concepts of "micro-class" and "flipped classroom" were presented in everyone's field of vision, the traditional teaching mode was subverted at all levels. The development of science and technology will inevitably lead to the improvement of teaching quality. The rational application of micro-classes and flipped classrooms can not only improve the teaching quality of teachers, but also share educational resources to a large extent to meet the needs of higher vocational English curriculum reform. Stimulate students' interest in learning English, improve students' learning initiative, and increase the understanding between classroom innovation and teaching effects. Based on the overall thinking of learning first, teaching later, presentation of micro-classes, flexible time, and independent control, rationally combing, simplifying, and integrating, meet the characteristics of higher vocational education, and broaden your own way of thinking [2]. In view of this, how to implement an effective micro-class English flipped classroom design for higher vocational education?

2. THE STATUS QUO OF ENGLISH CLASSROOMS IN HIGHER VOCATIONAL EDUCATION

2.1 Cannot connect knowledge and practice questions

Under the background of the development of education of the times, in the process of higher vocational English teaching, it is difficult for some students to organically combine the knowledge points and practice parts. Most of the time, the students' ability to draw inferences from one another is insufficient. Once the teacher examines the same content in another way, the teacher will not be able to start, and some will even be at a loss and become confused. For example: Many times, the knowledge point that teachers learn is have no time to do, but in the process of practice, teachers need students to train have time to do. Many times, one word is missing. The thinking of students is limited to the classroom, and even lacks expansibility and connection. In the long run, it will not be conducive to the sustainable development of English knowledge learning [3].

2.2 Poor self-learning ability of students and monotonous classroom content

In higher vocational colleges, the source of students is more complicated, but many of these students are lack of autonomy, and there are more depressive problems in the inert learning. If students lack learning interest, passive learning will lead to insufficient learning enthusiasm for students [4]. There is no interaction between students and students, the teaching method is single, and the mechanical memory cannot establish the relationship between the various knowledge points, which leads to many other

3. DESIGN OF FLIPPED CLASSROOM FOR HIGHER VOCATIONAL ENGLISH BASED ON MICRO-CLASSES

3.1 Pre-class tasks (micro-classes)

3.1.1 Preparation and sharing of micro-class videos

For English teachers in higher vocational colleges, it is necessary to follow certain teaching steps and learning objectives, effectively integrate teaching difficulties and key points, and reasonably incorporate these contents into them, and increase information sharing and analysis. Micro-exercises, micro-tests, micro-courseware, etc. need to be mailed in combination with reality and uploaded to the network information sharing platform. That is to say, before the class, higher vocational English teachers need to find some video knowledge that matches the teaching content on the Internet under reasonable overall planning, and then integrate and edit the knowledge combined with this knowledge, analyze the key points, and take the essence of it. The dross, fully condenses the central idea of the video, and presents the difficulties that students need [5]. At this time, higher vocational English teachers can use micro-videos as the basis to analyze the key and difficult points of classroom teaching, stimulate students' interest in learning, and attract students' attention. In the initial stage of the classroom, teachers need to be student-centered, put more energy on the students, and achieve a state of listening carefully. Teachers also need to supplement video knowledge in time to make the best use of video. In addition, in many cases, it is necessary to analyze the problems in the video, increase the ability of assisting teaching, and improve the efficiency and quality of learning. There is no need to waste time on "waiting". Under normal circumstances, students with a low foundation can watch at a slower speed or watch repeatedly until the meeting is over. When encountering difficulties, you can use the group as a unit to find a reasonable solution and walk into the classroom with "doubts" and "problems" [6].

3.1.2 Design and completion of targeted exercises

In the course of practice, teachers not only need to cultivate students' interest in learning, but also need to optimize students' Xu Dexi methods. Classroom teaching should be flexible and full of vitality. In the implementation of higher vocational English classroom teaching design, on a people-oriented basis, internalize knowledge, enlighten wisdom, extend thinking, improve energy, and develop comprehensive literacy. In the discussion, cooperation, sharing, and creation, the quality of classroom teaching is guaranteed, and the effective construction of flipped classrooms is completed [7]. For teachers in higher vocational colleges, after playing the micro-videos, teachers can guide everyone to do some targeted exercises based on the content of these videos, and increase the understanding and consolidation of the knowledge points. When implementing English dialogue knowledge points, you need to play an English video dialogue first, you can integrate the basics in the dialogue, and find the difficulties and key points of knowledge learning. Between peers, the need is to implement a one-time dialogue and understand the intention. Reasonably explore similar sentences, increase the construction of dialogue methods and types according to different uses or meanings, extract the grammar of the sentence separately, analyze the key points and difficulties of the explanation, and guide everyone to combine Effectively analyze and improve feedback on your own learning situation. For example: In the micro-class video, the main grammar focus is on the use of "take". At this time, English teachers in higher vocational colleges can customize some exercises related to "take" based on the actual situation. The basic usage of take is that it can be effectively combined with prepositions. Here you can see take off, which belongs to the meaning of taking off and taking off. Take up can be translated into occupying and engaging in. Take turns means in turn, taking turns... …In these contents, teachers can not only improve students' cognitive ability, but also to a large extent, implement the main content of take, improve the ability of practice, increase the ability of consolidation and memory, and can be correct in practice Use prepositions.

3.2 Class discussion (flipped classroom)

3.2.1 Micro-class review and Q&A

The teaching goal of English courses in higher vocational colleges is to cultivate more language skills talents for the society, meet the integrated teaching concept of "teaching and doing", based on the profession, meet the professional development needs of students, and maintain personal sustainable development. On the basis of teaching students in accordance with their aptitude and classified guidance, create a democratic atmosphere, establish an effective learning environment, achieve the main purpose of heuristic education, improve students' innovative thinking ability, and increase the practical value of teaching. Micro-class is the beginning of English classroom teaching. On the basis of micro-videos, students put forward their own doubts and implement unified answers. For some content with a high error rate, teachers need to rationally integrate, effectively explain, and add Large processing capacity [8]. For example: when learning the three fixed sentence patterns of use, they can basically be divided into the following types. The first type is used to do sth. The second type is used to do something, be used to do sth. The third type is used to do sth, which is the use of be used to doing sth. Although these three aspects can be distinguished and can be applied in practice, in practice, many students are still prone to confusion. Like I used to take a walk after supper, the main expression is that I used to take a walk after dinner. However, for I am used to take a walk after supper., the main connotation is that I am used to take a walk after supper. In the comparison, you can intuitively see that although it is a difference between a bad word, you will get two different meanings. At this time, the teacher can use the micro-class method to present the contrast between the two to the students, explore the key points and difficulties, and relieve the students' confusion. After watching the micro-video, teachers need to expand communication and interaction by flipping the classroom, and make a reasonable summary. Teachers can also give a few more examples, increase the contrast, and reach the realm of analogy.

3.2.2 Flipped classroom task combing

In essence, the teaching method of flipped classroom can optimize the teaching method to a large extent, and highlight the main position of students in vocational English teaching. Student-centered, reasonable overall planning, integrated thinking, and combing teaching Task to improve team cooperation ability. In addition, in the course of higher vocational English teaching, you will often see some verbs or fixed sentence pattern collocations. At this time, teachers need to uphold the main ideas of the scientific development concept, reasonably guide students to review knowledge, find appropriate learning answers, improve the use of grammar, strengthen memory, and complete content interaction. Teachers also need to keep up with the progress of classroom teaching and improve learning efficiency in real-time interaction. Let students explore and study independently in the group, reflecting the true state of the students, rationally optimizing and integrating, and effectively adjusting the corresponding teaching content to meet the current development path and lay a good foundation for future development.

Specifically, teachers can also use question-and-answer tests to check students' micro-class learning in various forms, sort out the “input” before class, and effectively combine previously learned knowledge with new knowledge. , Reconstruct key knowledge, maintain the coherent habits of the knowledge system, and apply to the understanding of vocabulary, sentence patterns, grammar and other language points. Role-playing defenses can also be used. In specific language situations, teachers can combine the main content of the textbook to reasonably compile sitcoms, allow students to take on the role, rational dialogue and performance, improve the ability to cooperate, and interpret different professions Connotation, improve students' problem-solving ability, and stimulate students' interest in learning. In addition, teachers can also use the method of group discussion to create problem situations, analyze difficulties and key points, communicate with each other, and constantly question. Lay a good foundation. Finally, you can also use topic display methods. This way, relatively free and expanding, students can combine their own interests and teachers’ needs, find appropriate topics, and in a lively way, improve the psychological quality of higher vocational students, help students build self-confidence in learning English, and enhance The ability of information processing to maintain comprehensive capacity building.

3.2.3 Excellent works display

Teachers need to pay attention to language skills when giving evaluations. Only when students perceive "attention" and "respect" can they obtain the correct learning methods, find reasonable internal motivations, maximize students' learning potential, and meet current needs. Development path. After the teacher released the homework, some of the students' homework was done well. At this time, teachers need to increase the construction of the incentive system, on the basis of fair competition, increase the ability of students to learn independently, and improve students' participation. For example: In the teaching of English writing in higher vocational colleges, teachers can select several excellent articles and present these articles to the students. In the comments, you need to find the "shining point" of this student, analyze the difficulties of English learning, provide another writing idea, increase grammar construction, share writing skills, find a reasonable learning method, and maintain scientific development momentum.

3.2.4 Consolidation exercises

For students, after each class, only timely review and frequent reflections can effectively consolidate their memory. Through reflection, vocational students can review their own learning process, and constantly optimize themselves, deeply understand the nature of the problem, and achieve active thinking. For teachers, they need to understand the nature of the problem in the flipped classroom, understand the development needs of students, and improve their professionalism. Create a relaxed and harmonious environment, improve the interaction between teachers and students and students, discover problems in "teaching" and "learning", and promote the common development between teachers and students. Thinking from a different perspective, after the staged learning, teachers need to integrate the actual situation, summarize the knowledge points that students often make mistakes, link the teaching practice and key points, and improve the ability to absorb knowledge. After learning compound sentences, teachers also need to give some compound sentences to students with low comprehension ability based on individual differences. They need to consolidate knowledge, improve translation ability, and achieve the main purpose of flexible use of knowledge. The construction of flipped classrooms in colleges and universities also needs to test the actual situation of students, so as to provide a good foundation for the sustainable construction of flipped classrooms.

4.CONCLUSION

With the progress of society, the design of flipped English classes in higher vocational colleges under micro-classes can cultivate students' ability to learn English independently, promote the realization of the goal of effective interaction in higher vocational English teaching, and maintain teachers' individualized teaching and implementation. Pay attention to the grasp of the difficulties they are facing, and comprehensively improve the efficiency of higher vocational English teaching. Relying on high-quality resource sharing courses to enhance students' ability to learn independently, traditional teaching models carry out beneficial creations, and develop towards professionalism, so that students can better engage in learning English, expand teaching space, and deepen teaching connotation, To improve the teaching quality of professional English.

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A Probe into The Growth Path of Young Lawyers

Yi Li[1], Lei Wang[2]*
Jilin Jiwei Law Firm, Changchun, Jilin, 130062, China
[*]Corresponding Author.

Abstract: For any industry, in order to maintain vigor and vitality at all times, it is necessary to strengthen the degree of attention and importance to the backward groups. Only by continuously supplying high-quality young talents to the industry can the industry be able to ensure the healthy development of the industry, The lawyer industry is no exception. In this article, we will take "young lawyers" as the core starting point, fully consider the reality and the background of the times, explore the difficulties and difficulties of the growth of young lawyers at this stage, and make targeted suggestions on this basis Practical and feasible solutions for the guidance and reference of young lawyers and many industry workers.
Keywords: Youth; Lawyer

1. INTRODUCTION

The purpose of cultivating young lawyers is not only to teach young lawyers knowledge and skills, but also to effectively improve the moral cultivation of young lawyers, urge young lawyers to form a sound personality and establish positive values. Only in this way can young lawyers become a professional Only those who are beneficial to the development of society can enable young lawyers to make greater contributions to the prosperity of the country. Only by improving the professional ability and professional ethics of young lawyers, can young lawyers be cultivated into high-quality talents with "both morality and ability", so that they can become the "maintainers" of legal majesty and fairness, instead of being specialized "Saboteurs" and "sophistry" who are opportunistic and exploit loopholes in the law.

2. DIFFICULTIES AND DIFFICULTIES IN THE GROWTH PATH OF YOUNG LAWYERS AT THIS STAGE

2.1 The training pattern of "skills and ethics"

Young lawyers must grow up steadily and steadily, step by step, and cannot be greedy for meritorious progress, and cannot be eager for quick success. However, due to the urgent need to improve the ability of young lawyers as soon as possible, some lawyer training institutions have one-sidedly paid attention to the training process of young lawyers. The inculcation and explanation of abilities and skills did not express too much emphasis on the time-consuming training of professional ethics. However, because of the particularity of their profession, lawyers must be in awe of the law in order to become the most loyal defender of the law. Simply imparting legal skills can effectively promote the training process and accelerate the growth of young lawyers, but it cannot have an impact on the values of young lawyers [1].

At the same time, on the one hand, due to the exam-oriented education from small to large, all teaching activities are aligned with the content of the exam, and the idea of utilitarian education has been spread in the hearts of young lawyers. Coupled with the influence of the economic and social system, it is easy for young lawyers to only look at “lawyers”. To be a “career” for obtaining remuneration does not put too much effort and energy into it; on the other hand, as the degree of social informatization continues to deepen, the number of Internet users continues to rise, and young lawyers as a young group One of the members is the "main force" in the Internet user group. The Internet is an open platform that is inclusive of various cultural trends and does not refuse to come. While promoting the diversified development of the Internet, it also accommodates a large number of Bad information has poisoned the values of young lawyers.

2.2 The training evaluation mechanism has not been perfected, and the enthusiasm for training of young lawyers is not high

Regardless of any job, the evaluation mechanism has a very important role and significance. It can not only use the disciplinary mechanism to indicate the minimum training standards, avoid staff slack and treat training activities negatively, but also improve the staff through the reward mechanism. His enthusiasm makes him more actively involved in work activities. However, for the training of young lawyers, the upper management has devoted too much attention to the optimization of training content, and has not established a sound evaluation mechanism. They have too many expectations for the self-control of young lawyers, which has caused some young lawyers to not Taking training activities seriously, not only squandered their own time, but also squandered valuable training resources [2].

3. Effective measures to further accelerate the growth of young lawyers

3.1 Increase the importance of professional ethics training

Professional ethics training is based on the ideological field of young lawyers, but it does not only allow young lawyers to simply remember the content of professional ethics training in their minds, but also requires the approval of young lawyers from the heart. Only in this way can young lawyers be able to take professional ethics training. Morality is implemented in every corner of legal activities. Under this premise, first of all, a positive energy-oriented training environment should be created. Facts have proved that humans are social creatures. While affecting the social environment, the social environment will also have a huge impact on people's values. You can post "professional ethics" slogans in the training classroom; secondly, you can organize debate competitions and speech contests around the theme of "professional ethics". On the one hand, the format of the competition can effectively stimulate the competitive consciousness of young lawyers and make them more proactive Participate in professional ethics learning, and through the combination of spiritual rewards and material rewards, it can further increase the enthusiasm of young lawyers. On the other hand, the process of young lawyers writing manuscripts is also a process of inner interrogation, which can be effective Strengthen young lawyers' perception of the content, and at the same time, they can listen to the views of others, realize complementary thinking, and experience and perceive professional ethics from more angles [3].

3.2 Further improve the evaluation mechanism to stimulate the internal motivation of young lawyers training

If training activities rely too much on the self-consciousness of young lawyers, it will inevitably not be able to guarantee their lasting and efficient participation in training activities, their enthusiasm will be dissipated, and the motivation to learn will decline. Only a very small number of young lawyers with strong self-control can persist and persist. Eventually realize the leap of vocational skills. Only by relying on institutional guarantees can young lawyers be able to ensure that young lawyers have a steady flow of motivation to learn, and that the ability and literacy of all young lawyers can be guaranteed to improve steadily [4].

First of all, a hierarchical incentive mechanism should be established. Learning is a boring process. Without specific quantitative standards, young lawyers can only vaguely feel their own improvement, but it is not obvious, and it cannot bring positive feedback experience to young lawyers. Over time, young lawyers will gradually become numb, and their enthusiasm for training activities will naturally also decrease significantly. Only by further subdividing the training process and setting up rewards in each process can young lawyers continue to inject learning motivation; , The training evaluation mechanism should be linked to the promotion mechanism. For young lawyers, compared with temporary financial rewards, they pay more attention to the future development prospects. This will not only provide young lawyers with a more open and transparent upward channel, and improve youth Lawyers' sense of identity and belonging to the legal profession can also further enhance the training enthusiasm of young lawyers.

4.CONCLUSION

Generally speaking, lawyers are the lifeblood of legal activities. Only by doing a good job in training young lawyers can we guarantee the effective practice of the law from the source and obtain greater legal results. However, in the practice of training young lawyers, since they have not yet reached the maturity stage and are still in a period of constant exploration, there will inevitably be some flaws and shortcomings, resulting in uneven development of young lawyers' ability and quality, which is concentrated in the law. In terms of the quality of activities, it is necessary to further optimize and improve the training mechanism for young lawyers in order to effectively maintain the healthy development of the lawyer industry and make greater contributions to socialist modernization.

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Research on Online Teaching Methods in Epidemic Environment

Jie Liu
TaiYuan Institute of Technology, Taiyuan, Shanxi 030008, China

Abstract: After the outbreak of the new crown epidemic, schools in various parts of our country have been suspended to reduce crowd contact and protect the lives of students. However, students' learning cannot be left behind, and they can only be "suspended classes without suspension". In order to achieve this goal, online teaching has become the mainstream method of teaching during the epidemic under the background that offline teaching cannot be achieved. Major online education platforms have appeared, and have provided great help to students in their studies during the epidemic. This online teaching method is expected to become the main teaching method in the future. However, there are still some problems in online teaching methods that need to be resolved. This article will analyze the status quo, existing problems and countermeasures of online teaching methods in the context of the epidemic.
Keywords: New Crown Epidemic; Online Teaching; Research

1.INTRODUCTION

The outbreak of this epidemic reminds us to pay attention to public health safety, but also allows us to see the future development trend of many industries. For example, the online education industry that has exploded because of the epidemic isolation, schools are suspended, and students can only study at home. This may seem like an accident, but in fact it is the inevitable development of the times. With the development of the times and the progress of the Internet, one day in the future online teaching will really replace offline teaching as the main teaching method. During this epidemic, online teaching has already demonstrated its superiority. However, some problems reflected in the current situation of online teaching methods in the context of the epidemic are also worthy of attention. [1]

2. CURRENT STATUS OF THE USE OF ONLINE TEACHING METHODS IN THE CONTEXT OF THE EPIDEMIC

2.1 Teacher usage

During this epidemic, it is a test for teachers. As a new teaching method, online teaching is not only proposed this year, but it is still a challenge to teachers in all aspects when it is actually implemented. For primary and secondary schools, because the teaching content in each province is unified and the differences between regions are small, relevant departments can make unified arrangements to record relevant teaching materials into videos and watch them on the established platforms. Teachers in primary and secondary schools only need to watch the video, and then provide guidance for the questions raised by the students during the viewing process. Therefore, most elementary and middle school teachers can adapt to this online teaching method.

However, for teachers in colleges and universities, very high demands are placed on their abilities. Due to the different teaching content of different majors in colleges and universities, a unified arrangement cannot be realized, so teachers of each major can only make arrangements by themselves. As a result, university teachers are forced to become "little computer experts", do courseware, record videos, and broadcast live broadcasts, and they have also become an alternative "net celebrity." This kind of teaching method is not difficult for young college teachers because they are often exposed to new things on the Internet. But for some old teachers, this method is very difficult to use. However, in order to enable students to learn knowledge, seek advice humbly, and break through themselves, teachers have learned many network technologies to meet the needs of online teaching.

In general, although teaching in my country was affected during the epidemic, online teaching was also carried out smoothly under the unified arrangement of the country. Regardless of their own abilities, teachers are trying hard to learn to use online teaching methods to meet the teaching needs of students.

2.2 Student usage

For students, online teaching is no longer unfamiliar to them, because many students may have been exposed to similar courses on the Internet. The "live broadcast mode" commonly used in teaching during the epidemic is already a network method that many students are familiar with. Also, on the well-known domestic platform "Bilibili", there are many UP owners who share knowledge in various fields. This is actually a kind of similar online teaching, imparting knowledge through a network platform. This method has been very popular before this year. Therefore, most students learn online with ease. However, because online teaching methods must have network conditions, as well as network carriers such as mobile phones, computers, and tablets, for students in some remote areas, they are economically backward using this online method. On the whole, the use of college students is better than that of middle school students, and most college students are able to achieve online learning proficiently. [2]

2.3 Usage of teaching platform

To adopt this online teaching method, teachers and students must communicate and interact through some teaching platforms. During the epidemic, teachers and students used more platforms such as Tencent Conference, MOOC, QQ, DingTalk, etc. Through these platforms, teachers would broadcast live teaching and video upload and playback, and students could sign in, ask questions, answer questions and other activities normally. Similar to offline teaching. In general, many platforms developed and provided similar online teaching functions during the epidemic. However, due to the characteristics of each platform and people's habits, the use of each teaching platform was different, but they basically met the teaching needs.

3. PROBLEMS WITH ONLINE TEACHING METHODS IN THE CONTEXT OF THE EPIDEMIC

3.1 Teachers

As online teaching methods require teachers to have certain network technology, they must also change their traditional offline teaching methods. Therefore, the situation of teachers' online teaching was uneven during the epidemic. Some teachers have good network technology, keep up with the current Internet trends, and understand the topics that students are concerned about. Therefore, the teaching videos produced are excellent, the teaching live broadcast is lively and interesting, and the teaching effect is very good, which is very popular among students. However, there are still some teachers who have poor network technology and do not know much about the network. Therefore, the production of teaching videos is not satisfactory. The live teaching method is still the traditional offline teaching method, and the teaching is relatively boring. This is a question of teachers' teaching ability.

Except for the first time, many teachers report that the teaching effect of this online teaching method is obviously not as good as offline teaching. Although online teaching can achieve many functions, the interaction between teachers and students is still hindered, and many students lack the self-control of learning. Many teaching videos are hurriedly played and then ended, without real learning knowledge. Therefore, there are certain problems with the teaching results of online teaching methods during the epidemic.

3.2 Students

The online teaching method also reflects some problems in the process of students' use. In addition to the above-mentioned online teaching teachers’ weak supervision of students’ learning, some students’ learning effects are not good; many students report that online teaching is easily affected by network problems such as network stalls and platform problems. Computers and mobile phones will be uncomfortable to watch for a long time, learning alone, lack of communication with classmates, and the learning process is too boring. These are also problems with online teaching.

3.3 Teaching platform

In the use of teaching platforms, there are many platforms with imperfect online teaching functions. Many teachers and students report that the platforms cannot be used due to the large number of users during their use. Some platforms take the opportunity to seek benefits and carry out high amounts. Toll. In general, there are many teaching platforms, but they are uneven and lack unified supervision and coordination. The chaotic operation of the industry will have a bad experience for the arrival of users. Therefore, online teaching lacks a unified and orderly online teaching platform. [3]

4. STRATEGIC RESEARCH ON TEACHING METHODS IN THE CONTEXT OF THE EPIDEMIC

4.1 Improve teachers' online teaching ability

As the main body of this online teaching, the teacher's online teaching ability has become the key to the effect of online teaching. Especially for college teachers, for college students, online teaching must be novel and vivid enough to attract their attention. Therefore, colleges and universities should actively arrange relevant training, train college teachers in network technology and teaching methods, and promote teachers to change teaching methods to meet the online teaching needs of students. For all teachers, online teaching ability should be included in teacher review, and teachers' online teaching ability should be improved to cope with the online education era that may come.

4.2 Establish a standardized online teaching platform

The online education industry is booming during the epidemic, and behind the surge in the number of users of online teaching platforms, it reflects the current chaos in this industry. There are many teaching platforms of various kinds, and there are also many teaching platforms that deceive users, have poor course quality, and are overpriced. Therefore, the entire industry is currently in a state of disorder and chaos, lacking effective supervision and unification. Therefore, the state must conduct timely supervision and governance of the online education industry, rectify the chaos in the industry, and establish some standardized online teaching platforms to meet the needs of online teaching. [4]

4.3 Achieve comprehensive network environment coverage

The difference between online teaching and offline teaching requires more material conditions for teaching. Therefore, many children in poverty-stricken areas, because of economic backwardness, have not achieved network coverage, and do not have mobile phones, computers and other network mid-ends, so online teaching methods are difficult to implement. In this context, in order to ensure that online teaching methods can achieve universal popularity, the state must strengthen the comprehensive coverage of the network, give priority to poor areas, achieve comprehensive network coverage, and create a good network environment. Only in this way can online teaching methods have the possibility of implementation. [5]

4.4 Promote individualized teaching methods

One thing about online teaching is that what traditional teaching cannot achieve is the pertinence of teaching. Offline teaching teachers cannot provide corresponding teaching for each student’s personality. However, under the online teaching method, students and teachers can easily communicate with each other through the Internet. Teachers can tailor suitable courses for students. Therefore, the state should advocate Teachers use online teaching to conduct more targeted teaching, develop each student's personality, give play to the advantages of online teaching methods, and improve students' abilities and qualities.

In summary, the online teaching methods in the context of the epidemic are generally accepted by teachers and students, and have shown certain advantages and achieved certain teaching results. However, this online teaching method still has certain shortcomings and needs to be further improved. How to make online teaching methods more suitable for future teaching needs is a question that needs to be considered. Through the discussion in this article, I hope to provide ideas for solving this problem.

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Computer Science and Technology Application in Intelligent Building

Rui Lv
Xi'an Kedagaoxin University, Xi'an Shaanxi 710109, China

Abstract: The level of science and technology in my country is constantly improving, and intelligent technology has also been applied in construction engineering. Now computer science and technology has promoted the construction of automation systems, fire prevention and control alarm systems, and communication systems in buildings. Intelligence in buildings. Computer technology in building construction can not only reduce the cost of engineering construction, but also improve the quality and efficiency of buildings in construction and construction, reflecting the intelligent characteristics of buildings. The application of computer science and technology in the construction of buildings has formed a major feature of modern architecture, and at the same time, it has also realized the construction requirements of modern buildings. The application of the technology is briefly analyzed.
Keywords: Intelligent Building; Computer; Science And Technology

1.INTRODUCTION

Intelligent buildings are a major feature of modern buildings and a new concept in the development of the construction industry. In the construction of automation systems, the communication system and the fire prevention and control alarm system are connected to enhance the intelligent control in the building. The application of my country's science and technology in the construction of construction projects has promoted the development of intelligent buildings. The quality and efficiency of construction projects have also been significantly improved, and the economic benefits of construction enterprises have been improved. Carry out a comprehensive analysis of the application of computer science and technology in intelligent buildings. From a holistic point of view, the application of technology in intelligent buildings is improved and optimized, and the quality of construction projects and the level of construction technology of construction projects are improved. It can promote the long-term and stable development of my country's construction industry.

2. ANALYSIS OF THE ADVANTAGES OF INTELLIGENT BUILDINGS

The application of computer science and technology in the construction industry has promoted the rapid development of intelligent buildings. At present, the characteristics of intelligence in construction projects have gradually emerged, and the requirements for automation have gradually been reflected in the construction of construction projects. From the overall development direction of computer science and technology in construction engineering, it can be seen that intelligent buildings can improve the quality and efficiency of engineering construction during the construction process. The safety of intelligent buildings in use is compared with that of ordinary buildings. Sex has also improved, and new buildings are also more comfortable in living. Traditional construction projects belong to the extensive construction mode in construction, resulting in the quality of the project in construction cannot be guaranteed [1]. In the construction of intelligent building engineering, the combination of computer science and technology and intelligent systems can reflect the data and information in the construction of the project on the same platform, and the construction of an integrated platform of information can carry out the construction of each link in the construction of the project. Understand and speed up the construction progress of the project.

The application of computer science and technology in intelligent buildings can also save costs in project construction, prevent waste of resources during project construction, and improve the economic benefits of construction enterprises. During the construction of the construction project, when the intelligent construction materials and resources are allocated, the labor cost in the construction and construction of the project is reduced, the workload of the staff is reduced, and the work pressure of the staff is reduced. The application of intelligent technology and science and technology optimizes the post structure, in order to speed up the construction of the responsibility system in the construction of construction projects, and improve the quality of construction and the progress of the construction. Intelligent buildings can clarify the overall construction progress of a construction project, and supervise and manage the entire process of construction. The formulation of the management system and management capabilities of the construction project in the early stage of construction is relatively complicated. In the actual construction of the project, it will be interfered by different factors, which will cause the project to be delayed or the quality of the project will be affected. The management personnel cannot guarantee the project construction. The quality and progress of project construction. In the construction of intelligent construction projects, most of the management work and the problems encountered during construction can be solved by computer science and technology. When the management personnel manage the construction of the project, they use the intelligent system to carry out the construction of the project. Real-time supervision and management to achieve dynamic supervision of construction projects.

3. APPLICATION ANALYSIS OF COMPUTER SCIENCE AND TECHNOLOGY IN INTELLIGENT BUILDINGS

3.1 Reasonable use of automation functions

The application of the intelligent system in the intelligent building can supervise and control the building, and realize the management of all aspects of the construction project. The application of computer science and technology sets the contents of the surveillance camera system and the security anti-theft system, reflects the automation function in the construction project, and realizes the unified planning of the construction management of the computer technology. In the construction of intelligent buildings, according to the needs of different users, computer science and technology are applied to realize all-round engineering management and control. Engineering construction meets the needs of users while improving the specific functions of intelligent buildings. The application of automation functions in intelligent buildings can improve the efficiency of monitoring and management in buildings. The connection of cameras with other equipment allows users to understand the safety of the building and their own safety. If a stranger is found in the monitoring , You can give an alarm through the mobile terminal, effectively improving the safety of buildings and users. However, the start time of intelligent buildings in my country is relatively late, and there are still some loopholes in the operation of some automated systems that need to be improved.

3.2 Increase the use of intelligent facilities

With the rapid development of intelligent technology and science and technology in my country, my country's construction industry has also begun to develop in the direction of intelligence and automation [2]. At present, in the construction of construction projects, designers and managers have begun to strengthen the application of intelligent equipment and intelligent management solutions. Now the overall construction of construction projects has begun to develop in the direction of intelligent buildings. In the construction of the construction project, the installation and application of the intelligent equipment, in the construction of the intelligent building, the intelligent equipment in the use of the use of electrical circuits is reasonably configured, so that it can give full play to the timeliness of communication.

3.3 Ensure the scientific application of information management and control and integrated wiring system

In the process of intelligent building construction, strengthen the construction of the security information management system to improve the protection effect of residents. When the building is in use, strengthen the application of computer science and technology, and supervise and manage the overall operation of the building. The application of computer science and technology in intelligent buildings can realize the comprehensive management of buildings. The application of scientific systems can also centrally process and organize the data and information involved in the construction and use of buildings to provide users with more accurate Data information meets the needs of users. The application of computer science and technology can also improve the safety of intelligent buildings and reflect the advantages of intelligent buildings. Strengthen the construction of the wiring system in the engineering construction to ensure the rationality and scientificity of the wiring system. It can be seen in the current development of intelligent buildings that there are still certain problems in the operation of the current wiring management and control system. The system still has certain loopholes in the application. At present, most of the wiring technology and equipment in our country are imported foreign technologies and equipment. my country needs to strengthen the research and development of its technology, so that my country's wiring technology can become more and more mature.

4.CONCLUSION

In summary, with the development of science and technology in my country, computer science and technology have also been applied in intelligent buildings. The development of intelligent buildings has also promoted my country's construction industry to enter a new development direction. The quality of the building has been improved, and at the same time people are becoming more comfortable in living.

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Research On the Promotion Path of WeChat Reading App Network Community Based on Social Reading

Shuo Wei
Changchun Normal University Library, Changchun, Jilin 130032, China

Abstract: In recent years, with the continuous development of digital media technology, people's reading medium has also changed. When people use reading to socialize, social reading has also become a new trend. This article selects the most typical social reading mode WeChat Reading APP as the case study object, which has far-reaching significance for enriching the connotative characteristics of social reading and improving the research results in the field of social reading.
Keywords: Social Reading; Wechat Reading; Online Community

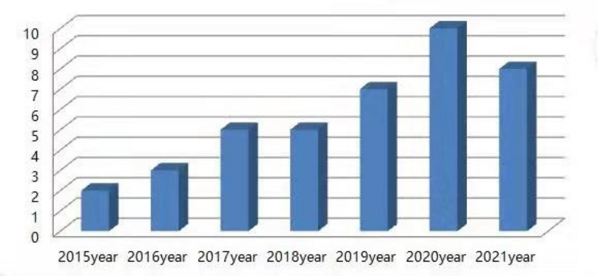
1.INTRODUCTION

With the deepening of the development of the digital reading industry, people's demand for individualized and socialized reading continues to increase, and the connotation of socialized reading continues to infiltrate. WeChat reading is the most typical form of social reading. It is an online community group formed through social networking. It provides personalized and social reading methods and has a profound impact on social reading.

2. LITERATURE QUANTITY AND TIME DISTRIBUTION

This article uses CNKI full-text database as the data source, and enters the search terms "Social Reading" + "WeChat Reading", "Social Reading" + "WeChat Reading", "Social Reading" + "Reading", "Socialization" Read "+"WeChat APP" to search for topics, keywords, and titles. The search time is September 25, 2021. A total of 199 Chinese documents were obtained. The retrieved documents were de-duplicated, and the documents that were less relevant or irrelevant to the topic were eliminated. Finally, there were a total of 35 documents. The development trend is shown in the figure below:

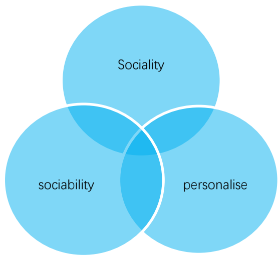
Table 1: Statistical Trends of WeChat Reading-related Papers Based on Social Reading from 2015 to 2021



Note: The above statistics are as of September 25, 2021

From the above statistics, it can be seen that the number of related papers published in 2015 and 2016 is still very small. From 2017 to 2018, the number of published papers has shown a large increase. From 2019 to 2021, the number of papers researching this direction is significantly higher. The more and more people come, it means that many people are beginning to pay attention to this field, and the characteristics of the online community of the WeChat Reading APP will soon be accepted by more people.

3. SOCIAL READING CHARACTERISTICS OF WECHAT READING APP



From the above chart, we can see that the WeChat Reading APP has the above three characteristics:

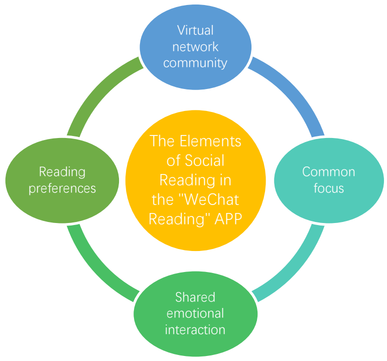
3.1 Sociality. As a social platform, WeChat itself has strong social attributes. Compared with other reading platforms, the WeChat Reading APP has inherent social advantages. The communication between users is closer.

3.2 Personalization. Traditional reading methods have gradually marginalized readers. The core concept of WeChat Reading is to provide users with personalized customized services, so that readers' preferences can be obtained in the first time.

3.3 Sociality. The WeChat Reading APP relies on the network community ecosystem to create a reading circle based on common interests and hobbies for users. A close communication network is constructed for readers to increase the cohesion of reading.

4. ELEMENTS OF WECHAT READING APP

WeChat Reading APP, the official reading application based on the WeChat relationship chain, supports both IOS and Android terminal platforms. The main idea is to make reading no longer alone. While providing the ultimate reading experience, you can recommend suitable books for users, and you can view the reading trends of your WeChat friends, you can discuss the books you are reading with your friends, etc., and you can customize your personalized and exclusive reading style at will. The "WeChat Reading" APP virtual network community, reading preferences, common focus and shared emotional interaction are composed of four aspects, as shown in the following figure:



5. PROMOTION PATH OF WECHAT READING APP

5.1 Establish a WeChat reading network community to build a healthy and interoperable reading ecosystem.

WeChat Reading is based on the WeChat platform as the most powerful support. It can be said that it has an innate reader group. The establishment of the WeChat reading community more satisfies the social needs of users and forms a good reading sharing experience. You can also learn from other platforms to establish a daily reading check-in circle, guide users to establish interest sharing groups, stimulate users' enthusiasm for participation, and share useful information at the first time.

5.2 The community operator establishes diversified, personalized and intelligent reading forms and content.

The operator of the WeChat reading community should first identify the reading position, strictly review the source and content of the books read, and have the responsibility to build a healthy environment. Advanced technology can be used to build immersive reading scenes for users to create interesting reading. Provide users with personalized customization, center on user needs, and provide diversified forms of service.

ACKNOWLEDGMENT

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Research On the Design Strategy of Reconstruction of University Campus Building Space--Taking the Reconstruction of The Teaching Building of Sanya University as An Example

Xiaoyi Wu, Jiajia Jing, Xiaolong Chen
Sanya University, Hainan, Sanya, China

Abstract: This article has conducted an in-depth study on the renovation of campus buildings in colleges and universities. Taking the Shude Building of Sanya University as an example, through modeling, field investigations, site analysis, etc. of the current buildings before and after the renovation of the Shude Building. Analyze the problems existing in the existing buildings and the areas that can be more optimized, so as to begin to study the direction and content of the renovation, and retain the desirability of restoring the original building. Coupled with the imagination and discussion of the future university, the future teaching space, teaching mode, according to reference cases, combined with the actual situation, a detailed analysis and research on the renovation of the university campus building space. Finally, it is hoped that this research on the renovation strategy of campus buildings in colleges and universities can achieve the goals of improving the learning environment of students, creating a good learning atmosphere, enhancing the cultural value of the school, and further researching the form of future universities.
Keywords: Colleges And Universities; Teaching Space; Public Space; Classroom

1.INTRODUCTION

Under the background of the country vigorously advocating sustainable development, environmental design gives full play to the professional advantages of creating exclusive spaces, based on the vision of future architecture, and guided by the needs of school teachers and students. "Research", taking the Shude Building as an example, aims to create a good and comfortable learning environment and learning atmosphere for teachers and students of Sanya University, and has launched imagination and research on the form of the future university.

Under the guidance of the basic laws of environmental design, the "Research on the Reconstruction Strategy of Campus Building Space in Colleges and Universities" combines the advantages of existing buildings and the aspects that can be improved to be more optimized. The final results are presented through modeling and making solid models. The specific design content of this design topic ranges from indoor space design to outdoor landscape design. The indoor space design is divided into teaching space, office space, teaching auxiliary space and public space. The design process of this topic fully reflects the investigation of existing buildings in the early stage of design and the research of reference cases of excellent universities at home and abroad. In the conception process, special attention was paid to the combination of theory and practice, and the design performance stage paid special attention to the characteristics of multi-angle experimentation.

The ultimate goal of the research on the reform strategy of campus building space in colleges and universities is to improve the learning environment of students, create a good learning atmosphere, enhance the cultural value of the school, and further study the form of the future university.

2. OVERVIEW OF DESIGN ISSUES

The subject of this design is the renovation of campus architectural space, taking the Shude Building of Sanya University as an example. The design of university building space is very important for university teachers and students. With the development of our society and economy, the old university buildings may no longer be able to meet the increasingly advanced and diversified teaching, so for university building space The transformation is imminent. The requirements that universities and other architectural spaces need to meet are different. They need to create a good learning environment for teachers and students, to set off the teaching atmosphere of teachers and students, but at the same time, it needs to create an open, relaxed, Helpful atmosphere. College students learn mainly by independent learning, and learning is not all of life. Therefore, the architectural space of colleges and universities needs to take into account two functions, namely, the combination of learning and leisure.For the students of Sanya University, Shude Building is definitely a familiar building. Although it is mainly used by students majoring in art, there are also many public spaces for teachers and students of the school, such as the concert hall, Large lecture halls, lecture halls that can accommodate two hundred people, and so on. For our art students, they must be very familiar with the Shude Building, so when choosing the topic of the graduation design, we chose to renovate the Shude Building, because we have experienced it in our daily use. The advantages and disadvantages of Shude Building, so that we can do better. But after launching this subject, with more and more researches on the Shude Building, we found that the Shude Building is a strange existence to us. For example, there is a small platform outside the north and south, facing a staircase downstairs. If it were not for the teacher, we should have not imagined that his initial role was actually a small stage. This also explains why the opposite The ladder design is very inconvenient to use. The large stairs on both sides have too large span, and the small stairs in the middle feel that the steps are too broken, because its original design was not the stairs but the seats for viewing the opposite stage. And I believe that in the perception of most students, the Shude Building has only four stairs in the middle, but in fact there are seven stairs in the Shude Building, large and small, and the three stairs in the outer circle have been abandoned and unused. , And we also hope to reuse them in this transformation.

We hope that Shude Building will become a modern student center with various functions, so that students can enjoy university life while studying seriously.

3. PROJECT DEVELOPMENT DESIGN

3.1 Research background

3.1.1 Location analysis

The object of this research strategy is the Shude Building of Sanya University, which is a comprehensive university located in Sanya, Hainan. Sanya, Hainan is located in the south of my country and belongs to the tropical region of my country. The tropical region is characterized by high temperature all year round. Sanya can be said to be a city like summer in all seasons. The sun is also very sufficient (as shown in Figure 2.1), and it is accompanied by typhoon season. A very characteristic city.

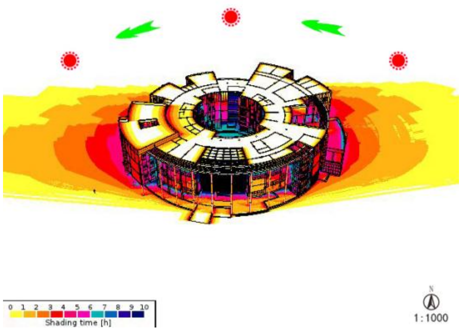

Figure 2.1 Sunshine analysis diagram of Shude Building

The Shude Building is located at the junction of the north and east areas of Sanya University. It can be said to be located in the central hub area of our school, and it is also a very characteristic building of our school. There are libraries, teaching buildings, canteens, playgrounds around, and the geographical location is still very good. (As shown in Figure 2.2) Shude Building Square is also the host site for various activities of the school. Usually, many students dance, skateboard, and play games here. Therefore, it is said that Shude Building still has special significance for the students of Sanya University.

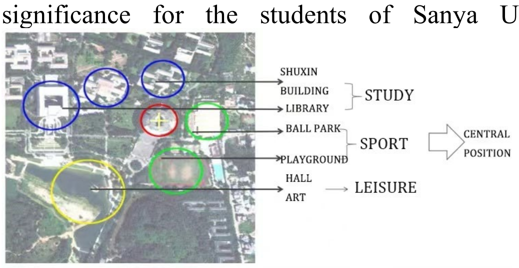

Figure 2.2 Surrounding environment of Shude Building

3.1.2 University building renovation

With the development and progress of society, the existing university buildings may no longer meet the needs of teachers and students. Therefore, the renovation of university buildings will be a very important part of university buildings in the future.

First of all, we know that the difference between colleges and other functional buildings is that they are a very important transition zone for a person to move from school to society. Therefore, colleges and universities require both an academic atmosphere and overcoming stereotypes. Colleges and universities are not only places for learning. It is also an environment that gradually adapts to society.

What we need to pay attention to for the renovation of university buildings is to not only meet the functions needed now, but also to modernize and develop into the future. What will universities look like in the future? This is a gradual process that needs to be explored slowly.

3.2 Base investigation and analysis

3.2.1 Function

The Shude Building is a comprehensive university building. It is not only a single function of a teaching building, but also includes lecture halls, dance studios, concert halls, broadcasting rooms, studios, administrative offices, teachers' offices, and rooms that can accommodate different numbers of people. Large and small lecture halls and so on (as shown in Figure 2.3). So on the whole, the function of Shude Building is very complete, but there is a problem that there is no public leisure space specially created for teachers and students. The existing leisure space may be a small area of the atrium, but because of the various weather The reason is that very few people go back to use it. Therefore, this renovation also hopes to add some public rest space for everyone, so that even if it is not in class time or between two class breaks, there is a place to go, reading, self-study, rest and so on.

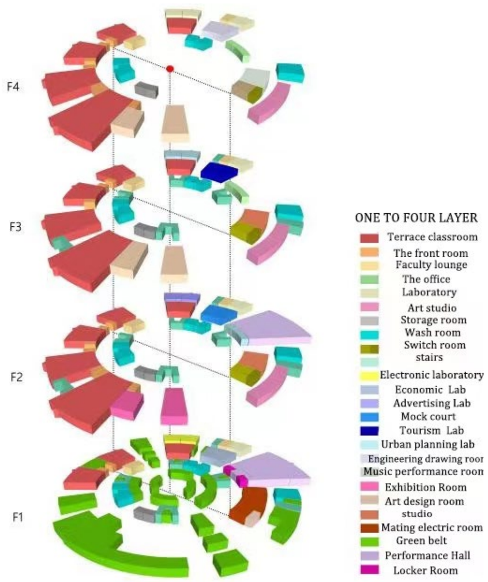

Figure 2.3 Exploded view of function analysis of Shude Building

3.2.2 Building structure

The Shude Building has a total of four floors, the south of it is the Shude Building Plaza, and the other three sides are surrounded by landscapes. According to the colleges, the first floor is for public use, the second floor is the School of Humanities and Media, the third floor is the School of Art and the International Design School, and the fourth floor belongs to the International School of Design. However, the construction has just been completed, so the International School of Design The teachers and students have not moved up yet. (As shown in Figure 2.4)

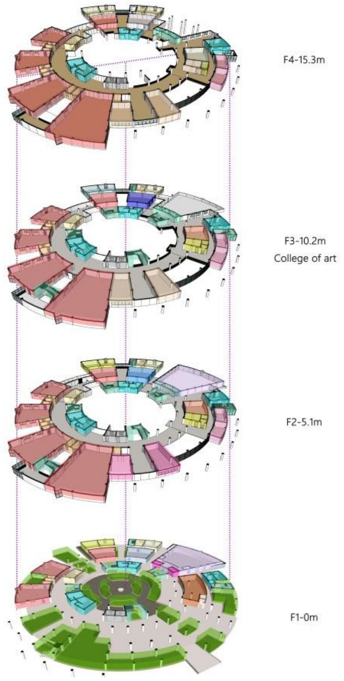

Figure 2.4 Schematic diagram of each floor of Shude Building

The Shude Building has a total of two 120-seat lecture halls and one 100-seat lecture hall on the first floor, as well as the exhibition hall, dance studio, power distribution room, and studio of the entire art academy. On the second floor, there are one 100 seats, two 120 seats, and one 150 seats, with a total of four lecture halls, a media school studio, media school office and studio. The third floor and the fourth floor have the same structure, except that there is an extra 200-seat lecture hall on the fourth floor, which is also the largest lecture hall in Shude Building.

3.2.3 Analysis of the surrounding environment

Shude Building is located at the junction of the north and east areas of Sanya University, which is the central hub of the school. To the north is the teaching building of Shuxin Building 1, and to the north is the Beiyi Canteen. To the east is the Wind and Rain Field, an important activity field for the school. To the southeast is the eastern playground, which is one of the school’s two major playgrounds with a large flow of people. To the southwest is Bailu Creek, which is the largest and most important ecological landscape area of the school. To the south is the Shude Building Plaza, which is the main place for students to carry out extracurricular activities in the school. Even when there are no activities, students will gather in the square to do their own activities. Further south is the main traffic road for the entrance of the school. If you enter from the entrance of the school, walk straight and see the first building directly opposite is the Shude Building. Therefore, the Shude Building has a very advantageous geographical location and has all the functions of the surrounding environment. This is also one of the advantages of the Shude Building as the main representative building of the school.

3.3 Teaching Reform of Teaching Space

3.3.1 Research on Teaching Space

The classroom is a functional space frequently used by students and teachers in the school. Therefore, the design of the teaching space will also directly affect the experience of teachers and classmates. The design of the teaching space is mainly studied from the following aspects. The first is the function. The function of the teaching space as we know it is mainly for the teaching of the teacher and the learning of the student. These two functions are necessary for the teaching space. On this basis, other functions can be derived, such as scientific research function, discussion function, activity function and so on. From the perspective of the classification of classrooms, classrooms can be roughly divided into two categories, one is academic, that is, the process of teachers teaching students to learn. The other category is mainly for art students, such as clothing classrooms for clothing majors, drawing classrooms for design majors, handicraft classrooms, media and other majors often need to use computers and are specially equipped with hardware facilities, and so on. Then there is the style design of the classroom. Our traditional classroom styles are similar. The main thing is that people can feel calm and can think and study quietly. To cite a counter-example, if the classroom is designed to be very popular, then this classroom must not be used by college students.

3.3.2 Direction of Teaching Space Reconstruction

The main direction of the renovation of this teaching space is to start with the teaching function, hoping to clarify the function of each classroom and achieve professional pertinence. For example, clothing classrooms, drawing classrooms, media classrooms, etc., will use the group to identify the specific needs of the group to design classrooms. The decoration style can also be differentiated according to the functional attributes of different classrooms.

For the public space outside the classroom, I also hope to create a place for students to relax, relax, entertain, and study in their spare time.

3.4 Reconstruction Plan Of Teaching Space In Shude Building

3.4.1 Analysis of the overall transformation direction

First of all, the functions of each classroom are clearly analyzed. At present, according to the users of Shude Building, classrooms can be divided into five categories: lecture halls, conventional amphitheaters, drawing classrooms, classrooms with higher computer usage, and clothing classrooms (Figure 2.5) Show). Then, public chairs and bar tables are arranged in the free space outside each classroom for students to rest and study by themselves. The design style of the classroom is still relatively simple and simple.

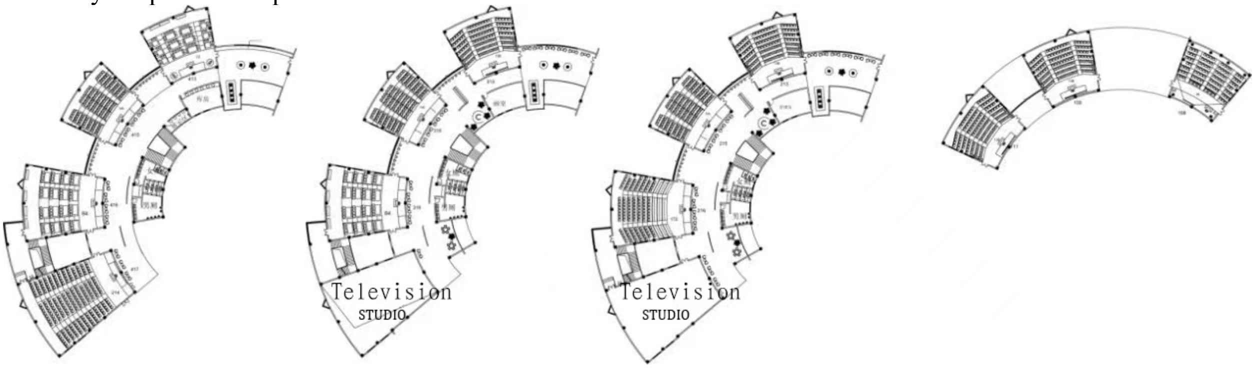

Figure 2.5 Plan of the renovation of the classroom in Shude Building

3.4.2 Specific analysis of each function

Lecture Hall: The main function of this space is to hold some small or small school activities (about 100 people), such as job fairs, promotion of specific activities, etc. The podium at the front of the classroom is made into a small platform, so that the sense of ceremony will be more sufficient, and it is also different from the regular classroom. Then, some decorative plants can be placed in the space to make the space more open and more ornamental.

Conventional lecture classrooms: divided into three sizes, large, medium and small, with 200, 150, and 100 students. This can meet the needs of professional courses of different numbers of people. The layout of the classroom is still the same as that of an ordinary lecture classroom, but the difference between the front row of sofas and the back row of single chairs is set up. Although university study depends on personal self-consciousness, there are still students who are not aware of self-learning and will be unconscious every time they go to class. Sit back, so that you can let yourself go invisible. Then design the front row as a sofa-like seat, so that students should be more willing to take the initiative to do the front row, and the awareness of learning will also be subtly improved.

Clothing classroom: There are two important hardware facilities for students majoring in clothing in class: large desktops and clothing tool models that can design drawings and cut fabrics, etc. Therefore, this time two classrooms equipped with these are specially set up in the Shude Building.

Cartography classroom: For environmental design or related majors, cartography is a necessary content of the course, but usually the desks and chairs in the amphitheater cannot meet the needs of the cartography class. The first factor considered in the graphics classroom is the size of the space. , There needs to be enough space for drawing or making models, and usually two to four people are used for group work, and the number of units per table can be set to four. Then, everyone needs more tools for drawing, so the drawing classroom also needs a setting that can store items.

Computer usage rate is high: For this kind of classroom, it is mainly equipped with desk and chair hardware facilities. Usually the classroom only has sockets at the front and rear or left and right, which is not convenient for students in the middle, so it is necessary to set up enough sockets to satisfy need. Then the size of the desktop needs to take into account the placement of the notebook computer and the operating field of the mouse, and so on.

4. DESIGN THOUGHTS

The design strategy for the renovation of the campus building space of the Shude Building mainly includes the research and design of the interior space of the teaching building and the exterior landscape design of the teaching building. The interior space of the teaching building is based on the floor from the first floor to the fourth floor as public space without professional college restrictions. , School of Humanities and Media, School of Art, School of International Design. From the functional classification, it is mainly divided into four aspects: teaching space, office space, teaching auxiliary space, and display space. The teaching space design is mainly divided into classrooms and outdoor public spaces. The classrooms are divided into five categories, namely lecture halls, conventional ladder classrooms, clothing classrooms, drawing classrooms, and network configuration classrooms. The public space outside the classroom hopes to create a space for students to rest and study in their spare time.

ACKNOWLEDGEMENTS

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Problems And Countermeasures of Ecological Environment Protection in Soil Rehabilitation and Control

Yi Zhang, Qiang Liu, Chunling Tang, Fangbing Gong, Jie Xu*
Petrochina Southwest Oil and Gas Field Safety, Environmental Protection and Technology Supervision Research Institute, Chengdu 610051, China
*Corresponding Author.

Abstract: Soil is the main resource for living creatures in the earth, and it is also the most important part of the human ecological environment. In the rapid development of my country's industry and agriculture in recent years, only economic development has been emphasized, and the damage to the ecological environment has been ignored. Now my country's ecological environment has been severely damaged and polluted. At present, people's awareness of protecting the ecological environment is constantly strengthened. The protection and management of the soil ecological environment has attracted people's attention. The method of remediation of contaminated soil is analyzed in this article, and measures to prevent and control soil pollution are also proposed.
Keywords: Soil Restoration; Ecological Environment; Problems And Countermeasures

1.INTRODUCTION

In recent years, the rapid development of my country's economy and the rapid development of industry and agriculture have led to more and more serious problems of environmental damage and pollution in our country. The most serious one is soil pollution. Now our country should pay attention to the development of soil restoration work. There are many factors that cause soil pollution, and the development of agriculture or industry will cause serious pollution and damage to the soil. Therefore, attention should be paid to soil restoration and management, so that it can promote the long-term development of our country's ecological environment.

2. REMEDIATION METHOD OF CONTAMINATED SOIL

2.1 Bioremediation

The ecological environment has been destroyed, and the ecological environment needs to be restored, especially the restoration of the soil. Soil bioremediation uses biological species to absorb and transform pollutants in the soil to achieve the purpose of soil restoration. Bioremediation is generally divided into three types, namely microbial remediation, phytoremediation and biological joint remediation.

Bioremediation is the remediation of soil through the degradation function of microorganisms. This remediation method is mainly suitable for the remediation of soil contaminated by pesticides or petroleum. Phytoremediation technology utilizes the functions of plants, and plants with accumulative functions should also be selected. Plants absorb or filter pesticides, heavy metals or other harmful substances in the soil. Ecological restoration. This kind of phytoremediation generally restores the soil of contaminated farmland to improve the quality of the ecological environment. There is also a biological joint remediation method, which is to remediate contaminated soil by combining multiple biological remediation methods. This remediation method can improve the efficiency of the remediation and avoid the shortcomings in the single biological remediation technology that cannot effectively treat the soil. Repair it.

2.2 Physical repair

Remediation of contaminated soil also has physical remediation methods. Physical remediation is to separate the pollutants in the contaminated soil. Generally, there are two methods used, namely the filling method and the ventilation method [1].

The filling method is to excavate the contaminated soil, transport the soil to a designated location for landfill, and fill the original soil location with uncontaminated soil. This method can quickly contaminate the area. The soil is repaired, but the contaminated soil cannot be cleaned up. Just moving the contaminated soil to another location cannot solve the problem fundamentally. This method is not suitable for long-term treatment. There is also a ventilation method. This method is generally used in areas where oil spills cause soil pollution. The volatility of oil and gas is used to induce air flow in the contaminated area by drilling wells, and the contaminated gas in the soil is carried out by wind. Clear.

2.3 Chemical repair

In addition to biological restoration and physical restoration, there is also a chemical restoration method for soil restoration. The soil is repaired by the chemical reaction between the repairing agent and the pollutants in the soil, and the effect of chemical repair is better than that of physical repair. Generally, there are four types of chemical repair methods used, which are cleaning technology, curing-stabilization technology, photochemical technology, and electrodynamic repair.

The cleaning technology is to use the active agent in the contaminated soil area, and water the active agent in the soil to improve the decontamination ability of the soil. This method is mainly used in the remediation of the soil contaminated by pesticides. The solidification-stabilization technology requires a certain level of technology in its application. The cost of this soil remediation is relatively low, and it is mainly applied to soil contaminated by heavy metals. Photochemical technology is an emerging technology in recent years. This technology has strong remediation ability and low pollution. It is generally used in the remediation of difficult-to-degrade pollutant soil. Electrokinetic repair is a combination of electrochemistry and electrodynamics, through the compound action between the two, to repair the soil.

3. MEASURES TO PREVENT SOIL POLLUTION

3.1 Strengthen soil remediation and governance

The soil is contaminated. When remediating it, the period of remediation and treatment is long, and the cost of soil remediation is also extremely high. Based on this, the Chinese government should strengthen technical support and capital investment in soil remediation. . The government has now begun to attach importance to the development of soil remediation and governance, strengthen the construction of agricultural ecological projects, and accelerate soil remediation and governance. my country should also introduce advanced technologies and conduct independent research and development of remediation technologies to ensure that contaminated soils are quickly remediated. At the same time, attention should be paid to the improvement of soil environment and soil self-purification capabilities, increasing the content of organic matter in the soil, and promoting the development of agricultural ecological engineering. Construction and development.

3.2 Strictly control the use standards of pesticides and fertilizers

Under the current environmental background, people have begun to pay attention to the protection of the ecological environment. The protection of the soil should be strengthened in agricultural production. The use of pesticides and fertilizers needs to be strictly controlled, and the standards for the use of pesticides and fertilizers are clearly stipulated. The rural areas vigorously promote the awareness of environmental protection and popularize environmental protection knowledge among farmers. Environmental awareness can be promoted through the official account platform or video platform, and brochures can also be distributed to organize environmental awareness training for farmers. The purpose is to make farmers aware of the importance of environmental protection and understand the unreasonable use of pesticides or fertilizers. Will pollute the soil. Hazardous pesticides and fertilizers need to be stopped immediately. The government should increase supervision, control the production of hazardous fertilizers and pesticides, and strengthen the research and development of new environmentally friendly fertilizers and pesticides [2].

3.3 Strengthen the monitoring of corporate pollutants

When protecting the ecological environment, strengthen the management of pollution sources. When managing pollution sources, the principle of prevention should be followed to manage sewage discharge in advance. The safety treatment should also be carried out. If it is discharged into the soil of farmland, it will damage the soil and affect the yield and quality of agricultural production. At the same time, the soil remediation work is also complicated. The existing soil remediation technology in China is limited, and the cost of the soil remediation work is invested. It is also larger, and the restoration requires a longer construction period. Therefore, soil pollution should be prevented in advance, and the treatment cannot be carried out after the pollution is serious, which will cause serious economic losses. In the prevention and control of soil pollution, a sound supervision mechanism should also be established, mainly for effective prevention and control of soil pollution. Intensify the punishment of environmental supervision and strictly supervise enterprises or individuals that maliciously damage the environment.

4.CONCLUSION

To sum up, the rapid economic development has led to serious pollution of our country's ecological environment. Now the problem of soil pollution in our country is getting more and more serious, and the situation of soil pollution in our country is indeed not optimistic. In the current environment, the Chinese government should strengthen the work of remediation and treatment of contaminated soil, and the government should formulate relevant supporting policies to improve the level of soil remediation and treatment. People should now pay attention to environmental protection, reduce the occurrence of soil pollution problems, and effectively prevent soil pollution so that the ecological environment can develop healthily.

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Research on the Training Mode of Student Cadres in Colleges and Universities in the New Era

Yuming Yang*, Jipeng Li, Zhiwei Liu, Yao Meng
Harbin Institute of Technology, School of Chemistry and Chemical Engineering, Harbin, Heilongjiang 150001, China
*Corresponding Author.

Abstract: As an indispensable part of the school's grassroots management and the prosperity of campus culture, college student cadres are the main force in cultivating college students' "self-management, self-service, self-learning, and self-innovation" abilities. Therefore, explore college students in the new era The training model of cadres and the creation of a contingent of cadres of college students who are thoughtful and responsible for the new era is of great significance to the management and training of college students.
Keywords: Colleges And Universities; Student Cadres; Training

1.INTRODUCTION

Since the 19th National Congress of the Communist Party of China, the Party Central Committee has closely focused on the fundamental task of "building morality and cultivating people", and has repeatedly put forward new requirements for ideological and political education in colleges and universities. As outstanding representatives of students, student cadres play a major role in the ideological and political education team of colleges and universities with their own advantages. In his speech at the celebration of the 100th anniversary of the founding of the Communist Party of China, General Secretary Xi JP pointed out: "For a hundred years, under the banner of the Communist Party of China, generations of Chinese youth have integrated their youth struggle into the cause of the party and the people, and have become a means of realizing the great rejuvenation of the Chinese nation. Pioneer forces." Youth is the new force in the new era and the backbone of national rejuvenation. College student cadres are the organizers, coordinators, and executors of school education, management, service and other tasks among students, and they are part of the student work team. An essential component is an important force that promotes school reform, development, and stability. Therefore, how to guide college student cadres to correctly understand and cultivate the sense of mission and responsibility of student cadres in the new era, how to train a large number of determined young Marxists and successors to the party's cause, and create a "firm belief, comprehensive quality, and model The team of student cadres who are exemplary and worthy of important tasks are the focus and focus of ideological and political education in colleges and universities.

2. THE BASIC SITUATION OF COLLEGE STUDENT CADRES

As the progressive members of the student group, college student cadres are active in all corners of campus study and life. They are responsible for the management and leadership of the student party, league branch, class collective, league committee, student union, and student associations at all levels in colleges and universities. Role is an imperative force of ideological and political work in colleges and universities, a bridge between teachers and students, and a key way for college students to achieve "self-management, self-service, self-education, and self-supervision". It plays a part in the process of promoting college student management. Important role. However, as far as the reality is concerned, the overall quality, working methods, and actual results of the student cadres in colleges and universities have not reached the expected state. The quality of student cadres is uneven, and the team of student cadres is mixed. It provides ideological and political education for college students, student daily affairs management, and talent training. Wait for the work to bring adverse effects. Student cadre training is an important component of the student work team in education, management, service and other tasks. The cultivation and improvement of the ability of college student cadres is related to the education and training of college students, and student cadres are properly trained and used in various fields. , Has a more influential role in the development of student work[1].

3. EXISTING PROBLEMS AND ANALYSIS OF STUDENT CADRES IN COLLEGES AND UNIVERSITIES

3.1 Some student cadres lack ideals and beliefs.

Some students have a strong "utilitarian spirit" as student cadres and lack dedication. This kind of "utilitarianism" makes students ignore the original intention of being a student cadre. In actual work, they wear the hat of "student official" and break away from the essence of "student friend." As a label to show their own charm and distinctive characteristics, and the problems of "bureaucracy" and "formalism" within the student organization are serious, many student cadres use their powers to arrogate among the student groups, which seriously endangers the normal work of students The operation also made the image and reputation of student cadres worse than before.

3.2 Insufficient working ability of student cadres.

Lack of leadership theory and the inability to balance studies and work is the most important problems for student cadres in colleges and universities. During the university, learning is still the student's own job. Cadres lack prestige among the student masses, and it is therefore difficult to mobilize surrounding students.

At the same time, some colleges and universities do not possess a systematic training system for college student cadres. Some student cadres work actively, have a good attitude, have a single working method, and have weak ability to withstand pressure. Some student cadres have excellent professional skills but lack the ability to interact with their surrounding students. It is easy to have conflicts with the surrounding students, which affects the development of student leaders and the improvement of their abilities to a certain extent.

3.3 The student cadre management system is not standardized.

The evaluation criteria of colleges and universities for student leaders are not perfect, and the incentive measures are relatively single. At the same time, the humanistic care for student leaders is insufficient. Maslow's theory divides human need from high to low into five levels: self-fulfillment, respect, belonging and love, safety, and physiology. For university student cadres, if they cannot solve their problems in their study and work in a timely manner, If it is not a good platform for them to grow and become talents, so that students can be respected and self-fulfilled, it is difficult to stimulate the subjective initiative of student cadres and make them the right-hand man in student work[2]. Some counselors only regard student cadres as their sharers of their work. They not only account for the work that should be done by student cadres, but also force the content of work that is not part of the work of student cadres on student cadres, causing student cadres to overload their work. This method of only using and not training student cadres not only fails to enable student cadres to achieve a virtuous cycle of "use-train-improve", it will also make student cadres resist student work.

4. THE CONSTRUCTION OF THE TRAINING MODEL OF STUDENT CADRES IN COLLEGES AND UNIVERSITIES

Strengthening the training of student cadres in colleges and universities is a clear requirement put forward by the Party Central Committee of the Communist Youth League and the Federation of Students. Effectively strengthening the organization and leadership system for student cadres, strengthening the construction of student cadres, and establishing a complete training mechanism for student cadres throughout the process can effectively promote students at all levels The healthy development of the organization consolidates the mass foundation of the party and league organization among young students.

4.1 Strengthen ideological and political education

All-round education requires ideological and political education in the process of honesty education, student management, and style of study. The fundamental task of ideological and political education is to improve people's ability to understand and transform the world, and to promote people's all-round development. First of all, give full play to the political positioning and ideological guiding role of ideological and political teachers in colleges and universities, and carry out continuous and systematic training of league and school cadres among student cadres, so as to unify political and academic rationality. Secondly, it combines the personality characteristics of the contemporary university with insufficient concentration and insufficient concentration ability, and teaches students in accordance with their aptitude and entertaining. Adhere to the unity of theory and practice, integrate theoretical knowledge into the quality development activities of student cadres, and "return" the content of ideological and political courses to students, so that they can participate in all links of political education, and innovate teaching methods And methods to increase the interest of ideological and political education and stimulate the enthusiasm of student leaders for learning. Third, strengthen the training of backbone students at all levels, especially the young Marxist training project, continuously improve the quality of training courses, improve the training mechanism, enrich training methods, work hard to cultivate the ideals and beliefs of student cadres, and work hard on the education of keeping the original intention and mission. Let young Marxists truly shoulder their responsibilities and serve as an example.

4.2 Improve theoretical course training

Theoretical courses cover a wide range, direct, and systematic. Therefore, in the process of cultivating the ability of student leaders, the training method of theoretical courses should be adhered to, and theories should be developed through campus culture, official document writing training, event planning and organization, etiquette and communication, etc. Training. College campus culture is an important part of socialist advanced culture, covering many aspects such as behavioral culture, environmental culture, institutional culture construction, etc., relying on campus culture to scientifically cultivate student cadres, so that college student cadres can become practitioners and inheritance of campus culture By. The ability to write official documents is very common in the daily process of student officials. Writing event planning, issuing notices, writing press releases, report summaries and other manuscript materials requires student officials to have a solid writing ability. Through the establishment of official document writing training, student officials can understand Standard and correct writing methods are helpful to the work of student cadres. Activity planning and organizational ability are also one of the important abilities that student cadres should have. Teaching student cadres regular and universally applicable activity planning operation skill can enable students to learn from analogy and complete similar student activities. Etiquette and communication skills are necessary skills for student leaders to communicate with classmates and teachers. A refreshing personal image and good etiquette can not only reflect personal accomplishment, but also help student leaders to carry out related work. A sound student cadre training model helps to improve the overall quality and abilities of student cadres, but the current training content for student cadres in colleges and universities lacks pertinence, the quality of courses is not high, student cadres are not active in participating in the training, and teachers are limited. Through detailed training content, offering self-selected courses, adjusting teaching methods, and improving training mechanisms, the whole process of training and training for university student cadres is carried out.

4.3 Enhance the combination of training and practice

In the context of the new era, with the steady development of the theoretical training of student cadres in colleges and universities, there are also higher requirements for innovation in practical training. The innovation of practical education approaches can not only enrich the practicality and scientific nature of the work of student cadres in colleges and universities. , It has practical significance to the effect of student work. At the same time, injecting the spirit of innovation into the training of time is a test of innovation for college educators. Therefore, the practical training of student cadres is not equivalent to the practice of student cadres in actual student work and campus activities. It also includes the practice of student cadres themselves. Practice. College students' social practice activities are a way for colleges and universities to guide college students into the society in an organized and planned manner in accordance with the training goals of higher education, to participate in specific production, labor and social life, through various methods such as business visits, government internships, on-the-job exercises, and western programs. Effectively cultivate and train student cadres. At the same time, student cadres can also be cultivated through school-enterprise cooperation, which can not only introduce enterprises to participate in internal activities of colleges and universities, but also promote student cadres to enter the enterprise for in-depth study, and enhance the pertinence and enthusiasm of student cadres to participate in the ability training of colleges and universities.

4.4 Further establish and improve the working mechanism

Improve the selection and inspection mechanism of student cadres, keep the "entry gate" for student cadres, formulate a reasonable selection system in accordance with fair competition, democratic elections and merit-based admissions during the selection process, and use different selection methods for different groups to ensure those qualities Students who are relatively advanced and well-learned can truly join the ranks of student cadres and promote the effective development of various student management tasks by giving full play to their abilities. Regularly organize student cadres to study the organization system, clarify the job responsibilities of student cadres, and improve the selection and management system for student cadres.

Establish an all-round evaluation mechanism for student cadres, complete an effective and reasonable evaluation and evaluation system, stimulate the motivation of student cadres, strengthen the sense of responsibility, improve self-discipline, and give full play to their own advantages and leading role in student organizations. Through self-evaluation, mutual evaluation, and other evaluation methods, the work of student cadres is objectively evaluated. Enhance the service ability and service consciousness of student leaders, stimulate the motivation and enthusiasm of student leaders, create a healthy and benign competitive atmosphere, and realize the tracking management of the whole process.

Strengthen the incentive mechanism for student cadres, establish a benign reward and punishment mechanism based on the assessment of student cadres, improve the supervision and management mechanism for student cadres, and strengthen daily supervision. Quantify and rate work effectiveness. Provide spiritual or material rewards for outstanding student cadres in the assessment, admonish or eliminate student cadres who fail the assessment, and add new members. Through regular assessments, punish or eliminate unqualified student cadres, maintain the purity of the blood of the organization, and improve the enthusiasm of student cadres.

5. CONCLUSION

University student cadres are role models for students to set goals, are a bridge linking information between teachers and students, and a necessary implementation of building a harmonious campus. Driven by the education reform in the new era, the training and management of student cadres in colleges and universities are of utmost importance. Therefore, colleges and universities should continuously improve the training and management of student cadres, and establish a new training and management system based on the characteristics of college student groups. Through the training and management of student cadres in colleges and universities, to train batch after batch of socialist qualified builders and reliable successors who are red, professional, and possess both political integrity and ability for the country and society.

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The Application of Interactive Classroom Teaching Mode in Senior Middle School English Teaching

Lili Zhang
The Affiliated High School of Ningxia University, Yinchuan, Ningxia, China

Abstract: The traditional teaching model is no longer suitable for the current high school English teaching needs. Educators should pay more attention to the cultivation of students' core English literacy in daily teaching activities. The classroom interactive teaching model highlights the student's dominant position, greatly improves the initiative to participate in the classroom, strengthens the effect of teacher-student classroom interaction, and improves the quality of English teaching. This article first explains the role of the classroom interactive teaching model, and discusses the application of countermeasures in high school English teaching.
Keywords: Classroom Interactive Teaching Mode; High School; English Teaching

1.INTRODUCTION

In the context of the new curriculum reform, in order to meet the requirements of the high school English syllabus, the English teaching model is in urgent need of innovation. The classroom interactive teaching mode mainly refers to the teaching activities carried out by the student as the center and the teacher as the leader in the classroom teaching stage, which improves the fixed relationship between the teacher and the student in the traditional teaching process, strengthens the interaction between the two, promotes each other and interdepends. Improve the quality of teaching. The classroom interactive teaching mode is integrated into high school English teaching, which can maximize the effect of teacher and student interaction, strengthen students' ability to express and apply English, and help improve students' comprehensive English literacy.

2. THE ROLE OF INTERACTIVE CLASSROOM TEACHING MODE

Students should become the main body of English classroom teaching. Teachers need to pay attention to the student's dominant position in the teaching process and maximize the role of the main body. The interactive classroom teaching mode is conducive to cultivating students' independent thinking habit, enhancing independent thinking ability, and enhancing the comprehensive ability of English subjects [1]. The classroom interactive teaching mode is integrated into the high school English teaching process. Teachers create corresponding English teaching scenarios for students, fully respect students' English learning ideas, actively adopt students' opinions on English learning, promote communication between teachers and students, and establish a good The teacher-student relationship will be closer to each other, thereby enhancing the effectiveness of English classroom teaching. In traditional English teaching, teachers are more focused on explaining English knowledge and not paying enough attention to discussion and communication. This is not conducive to cultivating students' divergent thinking, but also leads to a decline in students' interest in learning. The classroom interactive teaching model promotes good interaction between teachers and students, and between students and students, stimulates students' enthusiasm for learning, creates a strong English classroom learning atmosphere, and allows students to have more time for self-control in the classroom. Students can get a satisfactory classroom experience.

3. THE APPLICATION OF CLASSROOM INTERACTIVE TEACHING MODE IN HIGH SCHOOL ENGLISH TEACHING

3.1 Strengthen the main body status of students and adopt diversified interactive forms

In the process of English classroom teaching, teachers should pay attention to the creation of an interactive teaching atmosphere in the classroom. On the one hand, it is helpful to improve students' learning enthusiasm and teaching efficiency. On the other hand, it can improve the quality of classroom teaching and better realize the goals of high school English teaching [2]. Teachers use the classroom interactive teaching mode reasonably in teaching, create a good classroom interactive communication environment, create a strong classroom learning atmosphere, guide students to actively participate in learning, continue to explore English learning issues, and improve classroom teaching. Teachers should combine English teaching content to create relevant interactive learning scenarios to improve students' sense of classroom participation, so that students can participate in the English teaching process more efficiently and smoothly, actively participate in English course learning and after-school communication activities, and help students enter as soon as possible Learning Status. At the same time, according to students' learning rules and characteristics, the designed teaching content should meet students' interests as much as possible, combined with students' overall English proficiency, to ensure that every student can participate in English classroom teaching, and promote interaction and communication. Teachers should always embody the student's dominant position in the teaching process, understand and master students' English learning conditions, and adopt individual differentiated teaching according to the differences in students' English proficiency to ensure that students learn English knowledge based on their own learning ability and can actively participate in classroom interactive teaching middle. High school English classroom interactive teaching not only refers to the interaction between teachers and students, but also includes interaction and cooperation between students and students. Teachers divide different English learning tasks for students in teaching, so that students can conduct differentiated and interactive communication according to different English learning content. At the same time, teachers should further optimize the current English teaching structure to enable students to participate more in the reform of curriculum content, urge students to deeply understand the importance of English communication, and form a diversified form of interaction between teachers and students, students and students.

3.2 Implement extended teaching and increase the frequency of teacher-student interaction

In the process of high school English teaching, teachers should take corresponding teaching methods based on students' learning situation, improve students' learning efficiency, and better master English knowledge [3]. The ultimate purpose of English teaching is to express and communicate. Therefore, a good interaction between teachers and students during English classroom teaching is the key to ensuring the effectiveness of English classroom teaching. In order to enable students to actively participate in English classroom teaching, teachers should use various methods to increase students' interest in English learning, and gradually guide students to actively participate in classroom teaching. This requires teachers to correctly understand the classroom interactive teaching model, and at the same time provide students with sufficient learning space, appropriately slow down the pace of classroom teaching, so that students have enough time to think and communicate with each other, participate in English classroom learning with good confidence, and continue to improve Self-learning ability is conducive to the realization of extended teaching. Although many high school English teachers are actively using the classroom interactive teaching model, the interactive teaching activities carried out in the actual teaching process have not all achieved the corresponding teaching effect. Teachers cannot rely on their own experience and textbook content when formulating interactive teaching content. They need to further increase the frequency of interaction with students so that students can devote themselves to English learning.

3.3 Carry out group cooperation to improve independent learning ability

The main body of English classroom teaching is students. Teachers should encourage students to take the initiative to preview before class and actively understand the relevant content of English courses. This is extremely important for improving the efficiency of students' English learning and enhancing the effectiveness of English classroom teaching. In order to ensure that students have a good pre-class preview effect, teachers should sort out and classify the various English knowledge points based on the content of the existing textbooks, according to different English knowledge points, according to the actual English learning situation of the students, take the form of group cooperative preview, and the group will work together Cooperate to preview the key content of English knowledge points. In order to ensure the quality of pre-class preparation for the group, teachers can clarify the corresponding preparation goals for the group in advance, and allow group members to interact and communicate to ensure that each member can fully understand English knowledge points. In addition, the development of group preview goals needs to consider the actual learning ability of each member. If there are unsolvable problems in the preview process, after recording, ask the teacher in the classroom and get the corresponding answer.

4. CONCLUSION

In summary, the classroom interactive teaching model provides a new way to innovate the high school English teaching model, which is conducive to improving students' awareness of the subject in the classroom, cultivating practical thinking, stimulating learning enthusiasm, and enhancing English expression ability. In the actual teaching activities in the future, teachers should actively use the interactive teaching mode to provide students with a good classroom communication environment, pay attention to the cultivation of students' independent learning ability, actively play their own guiding role, continuously stimulate students' enthusiasm for learning, and promote the overall improvement of students' academic quality.

5.ACKNOWLEDGEMENTS

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Design of LED dot matrix display system based on Arduino

Changwu He, Zhenrong Zhao
Wuxi Vocational College of Science and Technology, Institute of intelligent manufacturing, Wuxi, Jiangsu, China

Abstract: The system is constructed with the structure of upper-lower computer. The upper computer is the mobile APP of the Android operating system, which sends the display information to the lower computer through wireless Bluetooth; the lower computer is the LED dot matrix screen with the Arduino development board as the control core. Including Arduino development board, HC-05 Bluetooth receiver module, 4*32 dot matrix LED display drive circuit driven by 4 MAX7219 chips in cascade, and other resistors and capacitors. The system has the advantages of green energy saving and environmental protection, and has good promotion value. The system design uses the Arduino hardware platform and the APP Inventor mobile software platform to develop, and it is quick to get started. It has a promoting effect on cultivating the makers' thinking of the majority of students, especially stimulating the spirit of innovation.
Keywords: Arduino; Bluetooth; Dot Matrix Display; Serial Communication; App Inventor

1.INTRODUCTION

In daily work and life, there are some typical scenes presented below. Typical scenario 1: A large company has a large number of employees and departments. It is necessary to prepare a name badge for each employee. The name badge is usually placed on the employee's chest for easy identification and communication within the company. The employee's name badge is usually printed and cut with hard paper and plastic-sealed. Or use other non-metallic materials for engraving. Large companies have frequent personnel flow, and the company has to produce a large number of name badges; Typical scenario 2: In various exchange meetings, it is necessary to prepare meeting seat cards in advance to facilitate the understanding and communication of all parties to the meeting, and meeting seats Traditionally, most of the cards are printed and cut out on paper. The seat cards are usually for one-time use. Every meeting usually requires a large number of seat cards to be produced and used. The above scenarios will cause a large amount of consumption of non-metallic materials such as paper, which is not conducive to the protection of forests and trees, and is not conducive to green energy conservation and environmental protection. Such display scenes can actually be presented in the form of dot-matrix LEDs, which can be seen from a distance. Compared with liquid crystal displays, LED dot-matrix displays have high brightness, far viewing, and low energy consumption.

2. OVERALL SYSTEM DESIGN

This system adopts the structure of upper-lower computer to construct. The system composition block diagram is shown in Figure 1. The upper computer is the mobile APP of the Android operating system, which sends the display information to the lower computer through wireless Bluetooth; the lower computer is the LED dot matrix screen with the Arduino development board as the control core.

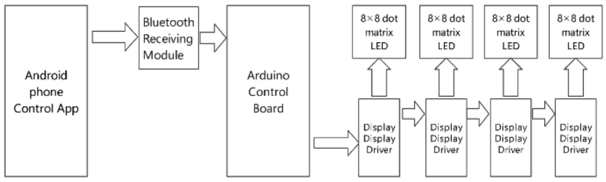


Figure 1 System composition block diagram

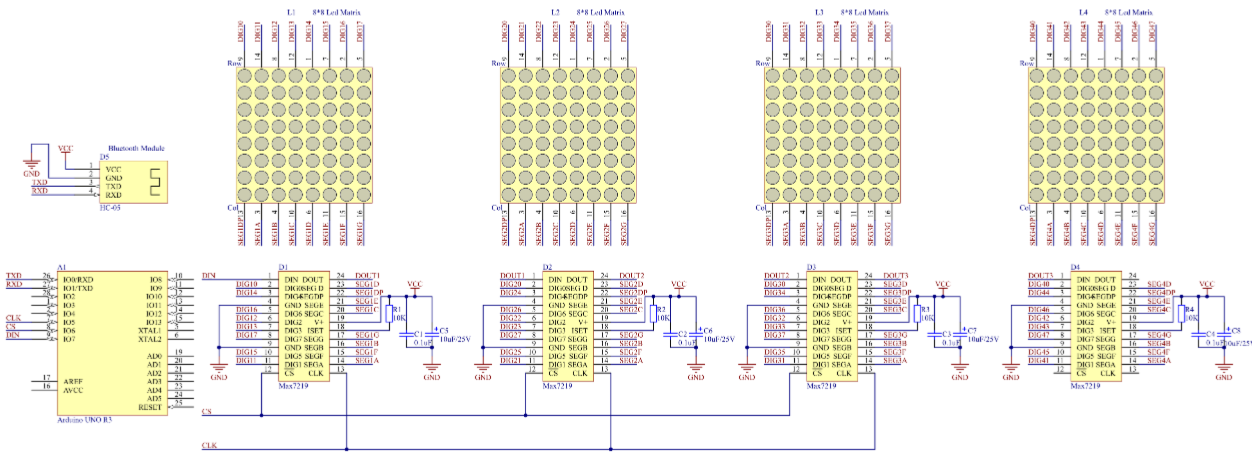


Figure 2 Schematic diagram of the hardware circuit of the lower computer

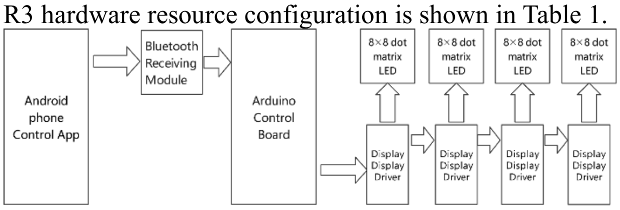
3. HARDWARE CIRCUIT DESIGN

The complete hardware circuit schematic diagram of the lower computer is shown in Figure 2, including the Arduino development board, the HC-05 Bluetooth receiver module, the 432 dot matrix LED display drive circuit driven by 4 MAX7219 chips in cascade, and other resistors and capacitors. Note here that the output pin DOUT of the previous MAX7219 module is connected to the input pin DIN of the new MAX7219 module. The following is an introduction to each part of the circuit.

3.1 Introduction to Arduino Development Board

Arduino is an open source hardware project, born in a design school in Italy. In the winter of 2015, the design school teacher Massimo Banzi [1] (Massimo Banzi) founded the Arduino project and invited the visiting teacher of the school at that time, the Spanish chip engineer David Cuartielles (David Cuartielles) to design The first Arduino control board. Since the development of the project, Arduino has evolved into an open source hardware project development platform. Arduino is very friendly to non-electrical professionals. Non-electrical professionals can use Arduino to make cool things even if they don't understand computer programming. For example, they can perceive the environment through various sensors, and control lights, motors and other devices to feedback and influence the environment. The Arduino development method makes developers pay more attention to creativity and realization, and complete their own project development faster, which greatly saves the cost of learning and shortens the development cycle.Among them, Arduino Uno is the most suitable for getting started and the most used Arduino development board

with complete functions (Figure 3). Arduino Uno is a microcontroller board based on ATmega328P. It has 14 digital input/output pins (6 of which can be used as PWM outputs), 6 analog inputs, 16MHz crystal clock, USB connection, power jack, support for online serial programming and reset buttons. Only need to connect the computer through the USB data cable to be able to supply power, program download and data communication. UNO R3 hardware resource configuration is shown in Table 1.



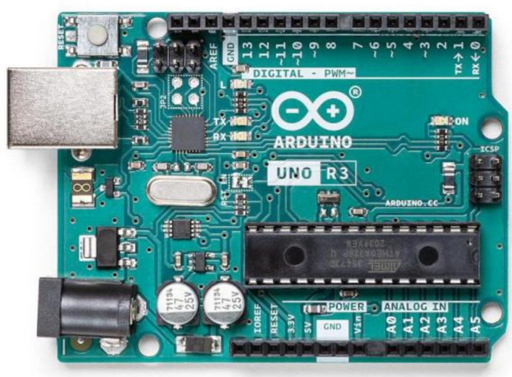


Figure 3 Physical image of Arduino Uno R3

Table 1 Arduino UNO R3 Tech Specs

NO.	Category List	Tech Specs
1	MICROCONTROLLER	ATmega328P
2	OPERATING VOLTAGE	5V
3	INPUT VOLTAGE (RECOMMENDED)	7-12V
4	INPUT VOLTAGE (LIMIT)	6-20V
5	DIGITAL I/O PINS	14 (of which 6 provide PWM output)
6	PWM DIGITAL I/O PINS	6
7	ANALOG INPUT PINS	6
8	DC CURRENT PER I/O PIN	20 mA
9	DC CURRENT FOR 3.3V PIN	50 mA
10	Flash Memory	32 KB (ATmega328P) of which 0.5 KB used by bootloader
11	SRAM	2 KB (ATmega328P)
12	EEPROM	1 KB (ATmega328P)
13	CLOCK SPEED	16MHz
14	LED_BUILTIN	13
15	LENGTH	68.6 mm
16	WIDTH	53.4 mm
17	WEIGHT	25g

3.2 Connect the HC-05 Bluetooth module to the Arduino R3 development board circuit and enter the normal working mode

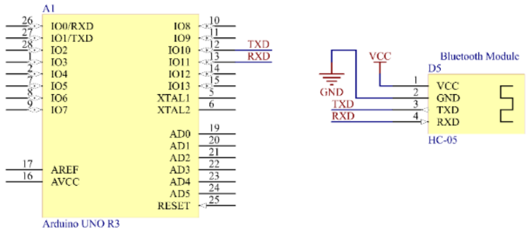
The HC-05 Bluetooth module [2] is a master-slave Bluetooth serial port module. Simply put, when the Bluetooth device is successfully paired and connected, we can ignore the internal communication protocol of the Bluetooth and directly use the Bluetooth as the serial port. When a connection is established, two devices share a channel, that is, the same serial port. One device sends data to the channel, and the other device can receive the data in the channel. The schematic diagram of HC-05 Bluetooth AT setting circuit is shown in Figure 4.

The first step is to connect the Bluetooth module to the Arduino control board hardware. Before using the HC-05 Bluetooth module, it is usually necessary to enter the AT mode to set the basic Bluetooth parameters. The basic parameter settings mainly include: Bluetooth name, mode, and matching password. This article introduces the use of Arduino to connect to the Bluetooth module for setup. Enter the AT mode to set the Bluetooth connection as shown in Figure 3. When connecting to Bluetooth, pay special attention to whether the line is connected correctly, and be sure to check it before turning on the power.

The second step, we need to write a program to set the AT mode of the Bluetooth module using Arduino. This program allows us to set up the Bluetooth module through the serial monitor provided by the Arduino IDE. The detailed Arduino code is as follows:

```
#include <SoftwareSerial.h>
SoftwareSerial BT(10, 11); // Pin10 为 RX,接 HC05 的
TXD,Pin11 为 TX,接  RXD
char val;
void setup() {
 Serial.begin(38400);
 Serial.println("BT is ready!");
 // HC-05 默认,38400
 BT.begin(38400);
}
void loop() {
 if (Serial.available()) {
 val = Serial.read();
 BT.print(val);
 }
 if (BT.available()) {
```

```
val = BT.read();
Serial.print(val);
}
```




```
}
```

Figure 4 HC-05 Bluetooth AT setting circuit schematic diagram

The third step is to use the Arduino IDE serial monitor to debug. Power off the Arduino, then press the black button on the Bluetooth module, and then power on the Arduino. If the indicator light of the Bluetooth module flashes at a frequency of 2 seconds, it indicates that the Bluetooth module has entered the AT mode correctly. Open the serial monitor of the Arduino IDE, select the correct port, set the output format to Both: NL & CR, and set the baud rate to 38400, you can see the BT is ready! message displayed in the serial monitor. Then, enter AT, if everything is normal, the serial port display will show OK. Next, we can set up the Bluetooth module, the commonly used AT commands are as follows:

AT+ORGL # Restore factory mode

AT+NAME=<Name> # Set Bluetooth name

AT+ROLE=0 # Set Bluetooth as slave mode

AT+CMODE=1 # Set Bluetooth as any device connection mode

AT+PSWD=<Pwd> # Set Bluetooth matching password

Normally, after the command is sent, it will return OK. After setting, disconnect the power and power on again, the indicator light of the Bluetooth module will flash quickly, which indicates that the Bluetooth has entered the normal working mode.

3.3 MAX7219 cascade drive LED dot matrix display drive circuit design

The LED dot matrix display driver adopts the MAX7219 display driver, which is an integrated serial input/output common-cathode driver. It can be connected to a 7-segment digital LED display or 64 independent LEDs. The common method to drive an 8×8 dot matrix requires 8 single-chip I/Os. If a large number of dots are driven, it takes up more I/O of the single-chip microcomputer. However, with MAX7219, only 3 I/Os are required. It can be achieved by mouth. When multiple dot matrixes are cascaded, you only need to connect the DIN, CS, and CLK pins of the first chip to the three I/O ports of the microcontroller, and connect the CS, CLK, and DOUT of the output terminal to the input of the next chip. By analogy, three I/O ports can be used to control multiple dot matrixes. In theory, unlimited cascading can be realized. The LED dot matrix display driver designed in this article uses 4 MAX7219 cascading methods.

MAX7219 controls the display brightness by adding an external resistor between V+ and ISET [3]. The segment drive current is generally 100 times the current flowing into the ISET terminal. This resistance can be fixed or variable, which can be controlled through the front panel to select the appropriate brightness. Its minimum value is 9.53K Ω. In the design of this article, the typical value of R1=10 K Ω is adopted, and the segment current can be set to about 40mA through this resistor. The schematic diagram of Max7219 driving 88LED dot matrix display circuit is shown in Figure 5.

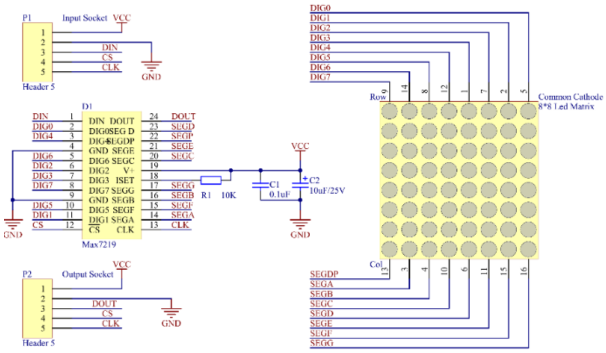


Figure 5 Max7219 driving 88LED dot matrix display circuit schematic diagram

4. SYSTEM SOFTWARE DESIGN

4.1 Lower computer control program design

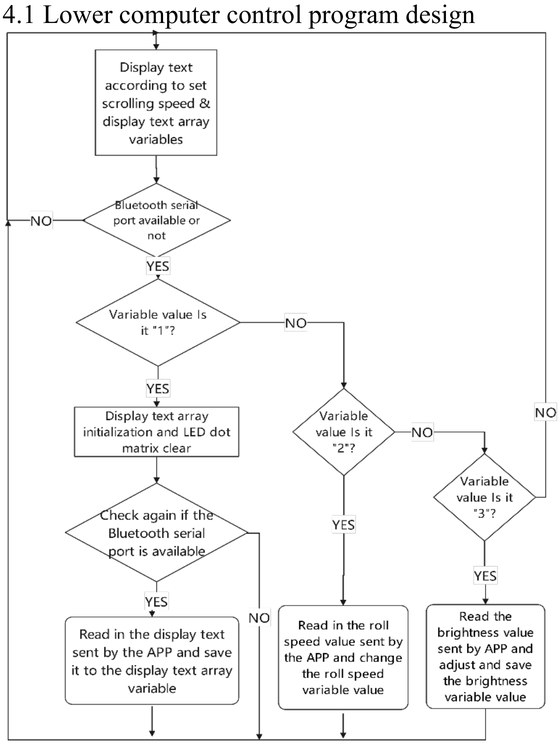


Figure 6 Initialization program flow

A single 88 dot matrix is actually composed of 64 light-emitting diodes and leads to 8 rows and 8 columns, a total of 16 output pins are driven by the MAX9219. The maximum number of LEDs that can be lit at the same time is actually only eight at most. Because the LED dot matrix is arranged in a collection of 8×8 rows and columns. Therefore, the MAX7219 can activate each column in a short period of time, and it can also drive each row at the same time. By quickly switching between columns and rows, human eyes will only see continuous light, and it is thought that all 64 light-emitting diodes may be on. This is the use of the visual persistence effect of human eyes.

The display principle after cascading four 88LED dot matrixes is the same.

The MaxMatrix library is used in the lower computer control program, which can be downloaded from the GitHub program code sharing platform at: https://github.com/riyas-org/max7219. The complete program code is not given here because of space. The reader needs to be reminded that PROGMEN used in the code is a variable modifier, which means that it is used to store data in flash memory instead of memory SRAM. In the process of programming practice, it is necessary to define a large amount of data such as letters and characters. It is best to store these data in flash memory, because it has 32K bytes and is much larger than 2K bytes of memory SRAM. Refer to Figure 6 and Figure 7 for the flowchart of the initialization program and the main program.

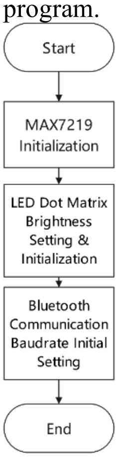


Fig. 7 main program flow chart

4.2 The design of the mobile terminal APP program of the upper computer Android operating system

The mobile terminal APP program design of the upper computer Android operating system adopts App Inventor for development. App Inventor is a mobile phone programming software developed by the Massachusetts Institute of Technology and Google. The programming is simple and does not require any programming knowledge [4].

First, App Inventor needs to build a program development environment. The first plan is to build the service environment by yourself, and you need to download the AppInventor offline version installation program; the second plan is to use the online development environment, run the browser directly, and enter the online server address in the address bar. Currently, the online system provided in China is as follows: http://ai2.17coding.net or http://app.gzjkw.net, and foreign users can visit the official website of MIT App Inventor: http://ai2.appinventor.mit. edu/.

5. SYSTEM APPLICATION RESULTS AND CONCLUSIONS

This article designs an Arduino-based LED dot matrix display system, using Arduino microcontroller as the control core to drive the dot matrix display. The name card or seat card information can be modified at any time, which is convenient for multiple people to use repeatedly. The system has the advantages of green energy saving and environmental protection, and it has good Promotion value. The actual product of the LED dot matrix display system is shown in Figure 8.

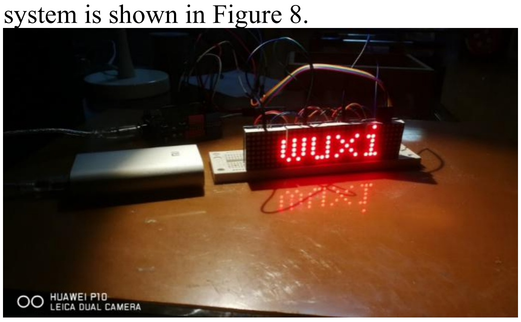


Figure 8 The physical object of the LED dot matrix display system

The shortcoming of this design is that the current display text can only display English, numbers and common symbols, and it cannot display East Asian characters such as Chinese. This is due to the fact that the Arduino UNO R3 program memory is too small to store the code files of commonly used Chinese characters. The 8 vertical dots of the LED dot matrix display Chinese characters are not detailed and complete, and the vertical 16 dots or more need to be expanded. These two aspects are the areas to be considered for improvement in the future; secondly, it is necessary to tap the role of Android smart phones as a multi-sensor integration platform. Transmit various sensor signals such as speed, acceleration, temperature and geographic location information to the LED dot matrix display through the mobile APP.

The system design is developed using the Arduino hardware platform and APP Inventor mobile software platform. It is quick to get started. It has a driving role in cultivating students' Maker thinking, especially in stimulating the spirit of innovation. It can mobilize students' learning enthusiasm and lay a solid foundation for further study and work in the future. The basics.

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The Reform and Implementation Method of College English Translation Teaching Model Based on The Network Environment

Qing Cai
School Of Foreign Languages, Suqian University, Suqian, Jiangsu 223800, China

Abstract: With the continuous advancement of science and technology, the degree of informatization and mediaization of teaching is getting higher and higher. In English teaching, multimedia technology provides a good teaching environment for English translation teaching, and also promotes English translation to a certain extent. Teaching reform. Breaking the boringness of the original teaching mode, the application of multimedia technology has greatly increased the interest of students and brought a more intuitive mode to the course of English translation teaching. The article analyzes the related problems in English translation teaching, discusses how to use network resources for English translation teaching, and elaborates the reform measures taken to improve the quality of college English translation teaching.

Keywords: Network Environment; Teaching; English Translation; Improvement

1. ANALYSIS OF THE LIMITATIONS OF COLLEGE ENGLISH TRANSLATION TEACHING UNDER THE NETWORK ENVIRONMENT

1.1 Existing teaching content lags behind

With the continuous development of the world economy, the demand for English professionals is increasing day by day. The ability of English professionals is divided into three levels in my country, according to the level of English translation ability. Therefore, our country pays more attention to practice in the training of English translators, and carries out clear skill training according to the needs of society. However, the actual English translation teaching is often unsatisfactory. Most of it is caused by the existing English textbooks in my country. The content of the textbooks focuses on the explanation of basic knowledge of English words, oral English, grammar, etc., and does not pay attention to improving students' translation ability. For the explanation of English system theory, students' English translation skills cannot meet the needs of society. Most of the students' after-school training is based on the basic knowledge of the students. It is difficult for students to access extra-curricular English training opportunities in English translation courses, and lack of systematic English translation ability training, which leads to insufficient ability of students in English translation [1]. The use of this kind of textbooks is seriously out of practice, unable to adapt to the basic needs of the society, and seriously affects the teaching quality and efficiency of English translation teaching. In actual teaching, this kind of textbooks will severely impact students' enthusiasm for learning, and affect their subjective initiative in learning. , Unable to achieve the teaching goal.

Nowadays, the teaching materials of major universities are basically the same. There are problems such as obsolete content and lack of innovation. This not only affects students, but also increases the difficulty of teaching. The old content in the teaching materials cannot be taught in combination with multimedia resources. , Teachers should screen the content of teaching materials, increase the workload of teachers, and indirectly reduce teaching efficiency and quality. In addition, the degree of informatization of teaching materials is extremely low, and it is difficult to interact with social information in real time. This also leads to the inability of teaching content to use the development of an informationized society, and it is difficult for the trained English translators to be qualified for the basic work of the society.

1.2 Poor pertinence of online English translation teaching

The Internet is widely used in major colleges and universities. This efficient and timely information delivery tool is also commonly used in college English translation teaching. In teaching, teachers can optimize teaching content according to course content, or learn from the Internet The advanced teaching mode of the school, combined with the actual situation of the school, formulates the corresponding teaching plan. This kind of Internet teaching model has strong diversification and autonomy. Students can learn independently according to their own situation, strengthen the knowledge reserve of a certain aspect in a targeted manner, and improve the efficiency of learning. In addition, English classrooms should continue to innovate, combine multimedia and other network equipment in English translation teaching to realize the informatization of the courses, strengthen the training of students' English translation ability, and improve their English translation ability.

2. REFORM MEASURES OF COLLEGE ENGLISH TRANSLATION TEACHING MODE UNDER THE NETWORK ENVIRONMENT

2.1 Improve the English translation teaching system

In today's society, the original teaching system of colleges and universities is boring, and students are more disgusted with it, unable to enhance students' interest in learning, and can no longer meet the needs of teaching. This requires colleges and universities to continue to explore the teaching system and find a set of advanced and scientific teaching models [2]. The application of Internet teaching provides an opportunity for the improvement of the teaching system. In teaching, it is necessary to use

Internet resources to train students' English translation ability, improve students' English translation ability, and enable them to seamlessly connect with the society and enhance their competitiveness. For the ability training of students, we should teach students in accordance with their aptitude, carry out differentiated and purposeful coaching training based on the basis of students, increase extracurricular practice on the basis of teaching in class, and improve students' English translation ability through practical activities, enhance students' learning confidence, and enhance autonomy The enthusiasm for learning. In online teaching, the differences of each student should be combined, and the learning plan adapted to it should be formulated separately, because the students learn and receive English knowledge in the classroom and outside the classroom are not the same, which requires teachers to use multiple teaching models in teaching , In order to achieve the purpose of students' full understanding.

2.2 Innovative online English translation teaching mechanism

In teaching, teachers are the guides of knowledge, and the learning direction of students is greatly influenced by teachers. Therefore, while optimizing the content of English teaching, teachers should strengthen the guiding role of students and strengthen students' independent learning ability. In teaching, teachers should organize extracurricular practical activities to enhance students' English translation accuracy through practice, understand the application of English translation in business, and be familiar with the specific content of English translation. They should also encourage discussion and discussion on English translation issues. The differences of English in different countries and regions encourage students to have an in-depth understanding of the language and cultural background of English, familiar with the meaning of English in different situations, and increase the accuracy of students in English translation work [3]. Online English teaching has relatively rich resources. Students can choose according to their own interests and hobbies, and cultivate learning interest and initiative on the basis of strengthening English translation learning, which is conducive to mastering more professional knowledge and being able to be timely in the learning process Find problems and solve them independently, improving students' thinking ability and independent problem-solving ability.

2.3 Standardize online English teaching procedures

In the networked teaching environment, its teaching method can fully make up for the shortcomings of traditional English translation teaching. The promotion of this teaching mode is based on traditional teaching content, and cannot abandon the basic teaching results brought by traditional teaching. The integration of networked teaching and traditional teaching can better provide impetus for English translation teaching and accelerate the development of English translation teaching. The online English teaching system contains multiple modules and resources, which are different in function. Each module is related. Programmatic and standardization of each module can more effectively help teachers complete the teaching of English translation courses. Learn more about students' learning level in teaching, and then provide targeted guidance to help them solve the problems encountered in learning, improve the quality of English translation teaching, and realize the improvement of students' English translation ability.

3. CONCLUSION

In summary, reform and innovation have become the key to teaching in the English translation teaching of colleges and universities in our country. The previous teaching model cannot train professional English translators and cannot meet the society's requirements for English translators. Therefore, in English teaching, it is necessary to strengthen teacher training, change the teaching concept of teachers, innovate the content of English translation teaching, optimize the teaching curriculum, actively guide students' independent learning ability, and continuously stimulate students' interest in learning under the premise of combining Internet teaching. This kind of English teaching method has been highly concerned by all circles of education and the society. This is also a necessary measure to adapt to social development and economic construction, fundamentally improve the English teaching and learning environment, meet the society’s demand for professional English translation professionals, and train real professionals for the society. English translation talents.

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On The Ideological and Political Teaching in Advanced Mathematics Course

Xiangrong Chen
Zibo Vocational Institute, Zibo, Shandong 255000, China

Abstract: With the continuous development of society, our country has paid more and more attention to higher mathematics courses. Advanced mathematics is a basic course for students to study, covering all majors related to science and engineering, and can cultivate students' ideological literacy, logical ability and so on. Curriculum ideological and political development mainly revolves around Lide Shuren, combined with teaching content, digging out hidden ideological and political elements in higher mathematics courses, and guiding students to look at problems from the perspective of dialectical development. In the following, it will mainly focus on the in-depth analysis of the ideological teaching in the advanced mathematics curriculum, so as to cultivate students' scientific attitude.
Keywords: Advanced Mathematics Course; Ideological And Political Teaching; Ability Training

1. INTRODUCTION

Advanced mathematics is an important course of colleges and universities, it is the main position for imparting knowledge and the main way of ability training. While cultivating students' interest in learning, it also enhances students' patriotism and helps students establish correct values. It is an advanced mathematics course. The goal of ideological and political teaching in China. Must meet the current talent training requirements, integrate ideological and political teaching into higher mathematics courses, and realize the combination of the two.

2. MATERIALIST DIALECTICS IS AN IMPORTANT ENTRY POINT FOR HIGHER MATHEMATICS CURRICULUM IDEOLOGY AND POLITICS

There are many contents involved in advanced mathematics, and its concepts, theorems, etc. are all demonstrations of the thought of materialist dialectics. Materialist dialectics advocates to view problems in connection with development. In the limit problem, the mathematician Liu Hui proposed the idea of circumcision, and even the circle combination embodies the materialist dialectics. As the tangent surface of a circle increases, its circumference becomes closer to the circumference of the circle. No matter how the number of sides increases, there will be an error between the circumference and the circumference. When the number of sides increases, the circumference and the circumference are closer to [1]. In the process of graphic evolution, students can experience the infinite transformation, and this infinite can be expanded but limited. Limit thinking is a finite and infinite opposition, a very similar unified opposition. For example: through the game of placing chess pieces, inspire students to place a symmetrical board and play chess in turns, to see whether the player who plays the chess first wins or the player who plays the chess later, cultivate students' ability to look at problems dialectically, and have some thoughts. Clear goals, after many attempts, the success rate will greatly increase. Life is similar to playing chess. Quantitative changes will lead to qualitative changes. You should face the problem calmly, and you can't take the horns. Everything has a reason to happen. For example, in the multivariate function, Su Shi's famous sentence mentioned the appearance of Mount Lu, which was described in a way of both pictures and texts. Different places can see different scenery, which inspires students to look at the problem from different angles. Life will always encounter many setbacks, everything has two sides, you need to overcome adversity not to be discouraged, and be careful about everything in adversity[2].

3. PATRIOTISM IS THE DRIVING FORCE FOR STUDENTS TO MOVE FORWARD

Patriotism is the emotion that every student must have. It mainly refers to the love for the motherland. The teaching of patriotism in the classroom can inspire students' patriotism and strengthen the students’ sense of national pride. In cultural exchanges, consciously Resist bad culture, maintain the image of the country, and learn actively. For example: in the course of learning the concept of derivative, use instantaneous speed as an example to play the video of the spacecraft launching into the sky for students, understand the meaning, and introduce the achievements of our country in the aerospace industry to the students. In the increasingly fierce international competition, the role of science and technology has become increasingly prominent. Science and engineering students have more opportunities to serve the country in the field of science and technology, which can cultivate students' patriotism and play a role in motivating students. Now students only need to scan the code to sign in for class. Few students study the QR code. The QR code is a combination of binary digital graphics and has a certain connection with the number, which can make students realize the importance of learning mathematics. , Take the opportunity to introduce hot issues. For example, there are certain contradictions between Sino-US trade, and the level of science and technology is improving. Huawei's spontaneous research of chips surprised the world. Huawei's ability to achieve this result has a lot to do with its investment in mathematics. According to the survey, Huawei now has more than 800 mathematicians and more than 900 physicists, and the importance of various fields is gradually being reflected. During the outbreak of the new crown epidemic, big data analysis and mathematical models can accurately predict the condition of the disease, play an important role in the prediction of changes in the number of people, provide a reference for epidemic prevention, and reduce losses. Encourage students to actively explore, use their brains to avoid impetuousness in technological innovation, and contribute to building a strong country [3].

4. CRAFTSMAN SPIRIT IS AN IMPORTANT MANIFESTATION OF CORE VALUES

Craftsmanship refers to an attitude of loving one's work, being dedicated to one's work, constantly forging ahead, and surpassing oneself. Higher mathematics contains a lot of complex knowledge, mainly logical operations. Through calculation, students can cultivate good qualities. Some students think that this kind of calculation is too simple, with good eyes and low hands, and will make low-level mistakes. In the current society, money worship and hedonism are widespread, and the values of college students are in the stage of shaping. It is easy to be affected by these negative factors and embark on the wrong path of development. In my life, I try to get something for nothing, pursue the immediate economic interests too much, spend my time and energy on chasing stars, have no understanding of the progress of science and technology in our country, and pursue the value of money first. In the face of this situation, it is necessary to pass on correct values to students in teaching, help them establish excellence in belief, and let students understand the true meaning of craftsmanship. For example: when talking about Taylor’s formula, the completion of the Hong Kong-Zhuhai-Macau Bridge can be used as an ideological and political case to be added to the advanced mathematics class. The construction of the Hong Kong-Zhuhai-Macao Bridge lasted about 15 years. Under the seabed construction in the 55-kilometer bridge, the error will be controlled to about three centimeters. The precision requirements are very high, and the project team needs to increase its research and conduct hundreds of test studies to overcome construction problems. There are many such craftsman constructions in our country, and of course there are also lessons from the lack of craftsmen. For example: An employee of a hardware company in Shenzhen was hit by a punch and died on the spot because of improper operation. Through the painful lessons, let students view the craftsman spirit in a correct way[4].

5. CARRYING OUT MATHEMATICAL CULTURAL EXCHANGES IS AN IMPORTANT WAY TO IMPLEMENT CURRICULUM IDEOLOGY AND POLITICS

Mathematics culture The history of mathematics development not only includes mathematical thoughts, but also various cultures related to mathematics, such as the history of mathematics and the beauty of mathematics. They play an important role in the development of human civilization, and mathematics education has also received attention. Mathematics culture can cultivate students' scientific spirit, improve comprehensive literacy of mathematics, and lay a good foundation for students' future development. In the actual teaching of mathematics, being infected by mathematics culture resonates with it, reflecting the cultural taste in it. For example: In the course of explaining curved surface equations, show some related pictures for students' objects of curved surface equations. The construction of Shanghai Oriental Pearl Tower is useful for the golden ratio. Combining mathematical ideas, students can feel the charm of mathematics and highlight the mathematics. Learning value [5].

6. CONCLUSION

According to the above, as an important teaching task, curriculum ideology and politics have a certain connection with higher mathematics courses. Constructing an education system can form an effective educational concept. In advanced mathematics theories, there are many similar theorems, which can distinguish things, find the similarities of things, recognize the essence of things, form corresponding logical thinking, and spread positive energy.

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Research On Sustainable Development of Multi-Center Tourism Management Model

Ying Chen
Hainan College of Vocational and Technical, Hannan, Haikou 570216, China

Abstract: The article emphasizes the necessity of building a multi-center tourism management model, and proposes a multi-center tourism management model based on the cooperation of tourism industry operation and management departments, government departments, the public, universities and vocational colleges, and the media The plan also elaborates on the division of executive functions and the independence of supervisors in this model, aiming to promote the sustainable development of the regional tourism industry.
Keywords: Tourism Industry; Multi-Center Management Model; Sustainable Development

1. INTRODUCTION

For the sake of maintaining the sustainability of the development of the regional tourism industry, it is extremely necessary to build and implement a multi-center tourism management model. In practice, relying on the clear division and implementation of the rights and responsibilities of multiple actors to achieve the sustainable development of the tourism industry.

2. ANALYSIS ON THE NECESSITY OF BUILDING A SUSTAINABLE MULTI-CENTER TOURISM MANAGEMENT MODEL

In order to promote the sustainable development of tourism resources and industrial development, multi-party actors should be actively introduced to participate in the development and management of regional tourism resources, combined with the precise division of rights and responsibilities of all parties, to ensure the sustainable and long-term development of the regional tourism industry. Effective development. In practice, if a tourism management model based on a single center is established, it is extremely easy to lead to the formation of "economic interests first" bad development atmosphere and ideas [1], resulting in damage to the regional environment and public interests in the development of tourism resources, and it is also difficult to achieve Sustainable development of the regional tourism industry. Therefore, it is extremely necessary to build and implement a sustainable multi-center tourism management model in the region.

3. ANALYSIS OF KEY POINTS IN THE CONSTRUCTION AND IMPLEMENTATION OF A SUSTAINABLE MULTI-CENTER TOURISM MANAGEMENT MODEL

3.1 Design of management framework

This sustainable development of multi-center tourism management model requires the support of multiple forces, including tourism industry management and management departments, government departments, the public, universities and vocational colleges, and the media. These entities are responsible for this management model. The tasks are different, and can generally be divided as follows: First, the tourism industry operation and management department is mainly responsible for the functions of industry development and tourism resource protection. It is required to formulate and implement long-term management, protection and development strategies for regional tourism resources, balance the interests of all parties, determine feasible development paths, and form and implement a sustainable eco-tourism development model; develop independently or jointly with other subjects Construction of infrastructure and proprietary facilities, combined with regional tourism resources to develop diversified tourism activities, to ensure that all activities are maintained within the allowable range of ecological carrying capacity; to analyze the reversibility of the ecosystem's response to negative impacts, to set ecological protection zones, Pollution is controlled to strengthen the sustainable development of regional tourism resources, especially eco-tourism resources. Secondly, the government departments are mainly responsible for monitoring. It is required to implement control and management of pollution sources scattered in the region, formulate early warning models and emergency response plans for possible ecological crises; take the lead in guiding industry cooperation, supervise the effects of tourism resources development, and propose optimization and rectification opinions; actively cooperate with the first The tripartite supervisory agencies cooperate to feed back opinions and information from all parties in a timely manner, and build and implement a diversified network based on tourism management to strengthen the effectiveness of management. Thirdly, social groups mainly bear the responsibility of supervision. Participate in the management work in the role and form of a third party; actively provide volunteer services to create a good and hospitable atmosphere; help tourists form the correct ecological awareness and be able to view regional tourism resources and local culture with appreciation, and promote the transformation and development of tourists Become the main body of environmental protection. Fourth, universities and vocational colleges are mainly responsible for supporting the development of local tourism. Conduct an academic evaluation of regional tourism resources, tourism resource development and management, and assist in formulating and improving development and management plans, and provide ecological conservation services; build a regional geographic information database, and implement timely updates of the information and data therein. Fifth, the media is mainly responsible for communication and information feedback. Provide timely and feedback on all kinds of information, pay attention to the development and construction of regional tourism resources; launch tourism consulting services, and actively participate in the promotion of regional tourism industry.

3.2 The division of the executive's functional relationship

Tourism industry operation and management departments, government departments, and the public are the executors of the development of regional tourism resources. Among them, the tourism industry operation and management departments occupies a dominant position in the implementation and development, and out of consideration of economic benefits, it is easy to Environmental protection work is too neglected; government departments play the role of "judge" in the implementation and development, but affected by issues such as information asymmetry, it is difficult to ensure the accuracy of all decision-making judgments [2]; the public is implementing development China mainly assumes an assisting role, so there is an interest tie between it and the development of regional tourism resources, so it can provide accurate information to the government in time, effectively alleviating the problem of information asymmetry. From this perspective, relying on the interaction and coordination of the tripartite operation and management departments of the tourism industry, government departments, and the public, avoids the emergence of minority monopoly issues, and effectively reduces the occurrence of multi-person violence, thereby promoting The development of regional tourism resources and the sustainable development of the tourism industry.

However, relying only on the combination of government departments and the public cannot fully guarantee the development of regional tourism resources and the sustainable development of the tourism industry. The main reason is that it is relatively difficult to balance corporate efficiency and social justice, and there are problems such as dislocation and offside. The probability of increasing. In order to avoid the emergence of these undesirable problems, it is necessary to continue to strengthen the administrative law enforcement capabilities of government departments, promote the standardization of business development, and improve the representation of public interests. Take the responsibility to the maximum extent.

3.3 Exertion of the independence of supervisors

From the perspective of universities and vocational colleges (academia), it has the characteristics of strong neutrality and high level of science and technology. The diversified technical problems encountered in the development of regional tourism resources need to be conducted in universities and colleges. With the support of vocational colleges, effective processing can be completed, thereby forming more scientific and feasible development decisions. From the perspective of the media, it assumes a strong supervisory function, reflecting the evasion of violations by government departments and the public. At the same time, the media also plays a key role in the process of strengthening the process of information asymmetry, especially in the process of decision-making supervision and optimization involving long-term goals and public interests. It occupies an important position. Generally speaking, for universities, vocational colleges, and the media, they can play a supporting role in the development of tourism resources and the management of the tourism industry. The implementation of dignity is strictly maintained and adhered to, and participation in profitable development activities is strictly prohibited to prevent the loss of independence of universities, vocational colleges, and the media.

4.CONCLUSION

In summary, actively cooperate with tourism industry operation and management departments, government departments, the public, universities and vocational colleges, and the media to jointly develop and manage tourism resources, and coordinate the tourism industry operation and management departments, government departments, and the public. The relationship between universities, vocational colleges, and the media can fully perform their supervisory functions to promote the development of regional tourism resources and the upgrading of industrial management, so as to realize the sustainable development of the tourism industry in a true sense.

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Exploration And Research on The Fusion Mode Of "Technology" And "Art" Of Animation Technology in Vocational Colleges

Le Qiu
Zibo Vocational Institute, Zibo, Shandong, 255314, China

Abstract: In the field of artistic creation, "technology" and "art" respectively represent the practice of creators "hard power" and "soft power" thinking, the two qualities are indispensable. Based on this, this paper mainly emphasizes the importance of professional skills and artistic literacy, and tells the construction and exploration of the integration mode of animation art literacy and professional skills in higher vocational colleges.
Key Words: Higher Vocational Colleges; Animation Technology; Artistic Quality; Technical Ability; Fusion Explore

1. INTRODUCTION

Nowadays, animation technology is making continuous progress with the pace of social development, and the teaching of animation technology in higher vocational colleges has ushered in some new problems. For example, how to integrate artistic accomplishment and technical ability in the course of animation technology to build a more perfect teaching mode. If a student only focuses on the study of technical ability without forming a good artistic thinking, it is difficult for him to create a high standard of work. On the other hand, if there is a lack of artistic literacy and technical ability, then students will also fall into the dilemma of "armchair strategist", unable to smoothly and freely into the practice of animation creation.

2. CULTIVATION OF ARTISTIC QUALITY IN ANIMATION TECHNOLOGY EDUCATION IN HIGHER VOCATIONAL COLLEGES

Artistic literacy, as the name implies, is the understanding and cognition of art in students' study. Artistic literacy is reflected in many aspects, such as the understanding and perception of a work, the performance and appreciation of the work, and the application and design of the work of art. There are many ways to cultivate artistic literacy. Artistic literacy is not only reflected in the mastery of learning, but also in life. It mainly comes from the perception of life. In the performing industry, there is a famous saying that "art comes from life and is higher than life". Therefore, the presentation and perception of real artists' works mainly come from the embodiment of details in life. Cultivating artistic sentiment in life can also increase their artistic accomplishment by reading more books. For example, people who read history books as children have a better grasp of history and generally get higher grades in school than people who read history books less often. This shows that artistic literacy is not only reflected in books, but also can be cultivated from anything in life [1].

Therefore, in terms of animation technology, teachers should not only train students in theoretical knowledge in class, but also give them more guidance in understanding life. For example, learn more about some classic works at home and abroad and observe how they present their artistic qualities in their works. For art attainments is higher in western countries, like America's animation "hua mu LAN", "shrek", "crazy general mobilization", "kung fu panda," such a classic Japanese anime, Asian countries "spirited away", "one piece" "naruto", and so on is known as the classic, is rich in local features. In this context, to improve the artistic quality of animation technology professionals will make China's animation works more representative, characteristic, but also more standard. The cooperation and cooperation of artistic accomplishment and technical accomplishment can create good animation works.

3. TRAINING OF PROFESSIONAL SKILLS IN ANIMATION TECHNOLOGY EDUCATION IN HIGHER VOCATIONAL COLLEGES

At the technical level, animation technology needs to master a lot of skills, but also requires students to master skills. For example, there are five types of animation, including traditional animation, vector animation, THREE-DIMENSIONAL animation, MG and stop-motion animation. Although these categories bring different feelings in visual effects, many theoretical knowledge in technology are the same, but there will be different effects in technical performance. This shows that in the process of learning animation technology, the implementation of animation technology is a very important thing, only lay a good foundation, can bring help for the future progress. The technical skills involved in animation, such as hand-drawing, planning, machine drawing, software, implementation, publishing and marketing of late work release, derivative product design and a series of work are required to master. Although every work will be carried out by professionals from relevant departments, if a student fails to master the application of the basic technology in the process of learning and cannot really relate to the actual practice, it is not conducive to the long-term development of students in the path of animation technology [2].

At the same time, mastering good technical ability, innovation ability will also be improved. In the process of creation, due to the mastery of a technology has reached the peak, they will independently develop some new works. Sometimes, the works created in a moment can arouse readers' or audiences' heartstrings.

4. CONSTRUCTION OF THE INTEGRATION MODE OF "TECHNOLOGY" AND "ART" OF ANIMATION TECHNOLOGY IN VOCATIONAL COLLEGES

A good work is bound to be formed under the combination of technical ability and artistic accomplishment. As a product of The Times, animation technology proves China's soft power invisible. In teaching, teachers should not only teach students technical ability and artistic quality, so that students can understand the true meaning of it, and can master a technology; The spirit of animation technology should also be conveyed to students, so that every student can better understand the real concept and idea of a work.

In general, in order to improve students' technical ability, animation courses will start from basic teaching, such as sketch, composition, sketch and other related courses. There are also some graphic design, animation design, cartoon design, film and television program packaging design, post-synthesis, comprehensive project design and a series of courses, in order to enhance students' flexible control of technical ability.

In any aspect, technical ability and artistic accomplishment are inseparable, they will always be closely combined, complement each other. Art mainly lies in the perception and understanding of works, while technology mainly lies in the deconstruction and reconstruction of works. All works should be completed through in-depth analysis of the works by artistic accomplishment, and then through excellent technical ability to create. Only by using this way of working can we create a work of high standard and high quality which is satisfied by the world.

For students majoring in animation technology in higher vocational colleges, they should not be biased. For example, they have a thorough understanding of theoretical knowledge, but in practical theoretical operation, they are not satisfactory. Students who are particularly outstanding in practical operation do not have a thorough understanding of the theoretical standards of assessment. Such students are very common, the main reason is that teachers themselves set priorities for students in the process of teaching, so that students give priority to one of the courses in the process of learning, so that students will appear the above phenomenon. In the embodiment of artistic accomplishment and technical ability, there are mainly the following aspects: the research ability of industry investigation, the ability of communication and exchange, the ability of understanding and expression, the ability of selecting topic and creativity of works, the ability of planning and design of works, the ability of appreciation and learning of art design. In the application of these aspects, artistic accomplishment and technical ability are combined, with both internal depth exploration and external breadth exploration. Generally in teaching, the use of case teaching method will be more intuitive and clear, so that students quickly into the state, master the learning method.

5.CONCLUSION

In a word, in order to enable students to create perfect works in animation technology teaching, we need to teach them to combine technical ability and artistic accomplishment, to achieve the effect of the unity of knowledge and action. Only by cultivating their creative ability of high level and high standard in all aspects can they be diversified in their works. At the same time, students should be trained to have innovative ability in teaching, always follow the development of The Times, and bring more and more possibilities for the innovation and reform of China's animation industry.

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Research On the Development Mechanism of Individualized Profession of Rural Teachers In The Internet + Era

Yuefei Gao
Guangxi College of Education, Education Technology and Information Management Center, Guangxi, Nanning 530023, China

Abstract: With the advent of the Internet + era, the relationship between information technology and education has become closer. In order to realize the transformation of the traditional professional development model of rural teachers, the "Internet +" model can be introduced to provide richer resources for the personalized professional development of rural teachers. Based on this, this article conducts research on the individualized professional development mechanism of rural teachers in the Internet + era, starting from the significance of promoting its development, and combining the problems faced at this stage to propose building an information management system, improving the professional development level of rural teachers, and creating diversified development. Platforms and other channels.
Keywords: Internet + Era; Rural Teachers; Personalization; Professional Development

1. INTRODUCTION

Improving the level of rural education is an important way to achieve rural revitalization, and the level of rural education will be largely affected by the overall quality of rural teachers. Therefore, it is necessary to further improve their quality and promote their personalized professional development. However, at this stage, the development of rural teachers is often constrained by factors such as limited learning resources and lack of reasonable instruction in teaching, which greatly enhances the difficulty in training rural teachers' comprehensive ability and quality. Therefore, in the Internet + era, information technology should be fully used to provide protection for rural education, so as to realize the professional development of rural teachers.

2. THE SIGNIFICANCE OF PROMOTING THE INDIVIDUALIZED PROFESSIONAL DEVELOPMENT OF RURAL TEACHERS

Considering the actual situation of the development of education in my country, the advancement of compulsory education will be affected to a large extent by factors such as the gap between urban and rural areas, school choices, and the distribution of educational resources. Therefore, the regional education level of different development levels will also appear obvious. difference. Compared with urban schools, rural schools are relatively weak in terms of teachers and student performance, which will also have a very negative impact on the balanced development of compulsory education. Therefore, in order to further promote the construction of a well-off society in an all-round way, we should focus on improving the educational level of rural areas in our country, and then take rural teachers as a starting point to effectively promote the individualized professional development of rural teachers. First of all, the professional development of rural teachers is complementary to the national development strategy of "Internet +", which can gradually deepen the internal connection between Internet technology and education, and provide a broader development space for my country's "Internet +" education informatization. Accelerate the process of educational modernization and lay the foundation; secondly, promoting the development of rural teachers' individualized profession is the key way to realize the revitalization of rural education. With the release of the "Opinions of the CPC Central Committee and the State Council on the Implementation of Rural Revitalization Strategies", the quality of rural teachers will be improved and rural teachers will be promoted. Professional development also reflects a more profound necessity. With the advent of the Internet + era, the Internet technology and the education system are becoming more and more closely linked, and more advanced technology can not only promote the reform of rural teaching and curriculum, but also provide new opportunities for the development of rural teachers. In such an environment, the personalized professional development of rural teachers will gain a broader platform, and at the same time, it can promote a significant improvement in the level of information technology applications; finally, the core of achieving balanced development of education is to promote educational equity, and "Internet The development model of "+education" helps students in rural areas to enjoy more complete teaching resources and achieve the purpose of increasing their knowledge and broadening their horizons.

3. DIFFICULTIES FACING RURAL TEACHERS' INDIVIDUALIZED PROFESSIONAL DEVELOPMENT

Compared with urban teachers, although rural teachers belong to the same group of teachers, there are multi-dimensional differences in individualized professional development, and they also show various development difficulties. First, rural teachers are faced with a certain level of difficulty in the development process. At present, most rural teachers are still at the level of imitation and adaptation. The overall development experience is relatively fragmented, and their theoretical foundation is relatively weak. The irrationality of teacher-level institutions has affected the development of rural education to a certain extent; second, practice orientation Dilemma is an important factor restricting the development of rural teachers. Rural education has obvious deficiencies in terms of teachers, student resources, and teaching conditions. This has further led to a stronger demand for practice-oriented rural teachers. However, at present, it is often difficult for schools to provide more practical local solutions, which makes it difficult to meet the development needs of rural teachers. Third, the overall resources in the development environment are relatively scarce. Rural schools have insufficient investment in teaching, research and scientific research. In addition, they are not equipped with complete information technology facilities, which makes it difficult to build a good professional development environment. Fourth, there is an academic deficit in the development of rural education. With the continuous advancement of the rural revitalization strategy, rural teachers have received more comprehensive support in terms of software and hardware, and their personalized professional development has also received many attentions. However, many rural teachers lack self-confidence and tend to show a certain degree of academic inferiority when conducting academic exchanges, which limits professional development to a certain extent. Fifth, the development of rural education often establishes "only under the guidance and participation of higher-level departments." The concept of "teaching and research activities can be carried out", so the overall update speed of teaching resources is relatively slow, which enhances the passivity of rural teaching [1].

4. AN EFFECTIVE WAY TO PROMOTE THE INDIVIDUALIZED PROFESSIONAL DEVELOPMENT OF RURAL TEACHERS IN THE INTERNET + ERA

Rural teachers have played a vital role in the development of rural education and the construction of a well-off society. Especially in the Internet + era, improving the development of rural teachers also reflects a more prominent significance.

4.1 Building an information management system

With the advent of the Internet + era, education informatization is also facing brand new development opportunities. In such an environment, a long-term mechanism for the professional development of rural teachers should be fully integrated into the actual situation, and the professional development level of rural teachers should be improved, so as to meet the development needs of education informatization and modernization to the greatest extent. In order to improve the level of professional development of rural teachers, it is necessary to actively construct a scientific and reasonable information management system, and in the process of promoting the implementation of the system, the teacher's knowledge structure and knowledge system should be improved, and rural teachers should be promoted through information technology. The diversity and richness of. First of all, the establishment of a complete information system is an important way to optimize the school organization system and improve the level of school development. Therefore, it is necessary to make institutional arrangements based on the equipment and application of rural teaching information equipment. These mainly include improving the information technology and equipment of rural schools and regularly inspecting the status of information construction. Secondly, rural schools should fully realize the importance of improving the professionalism of rural teachers and promoting the development of educational informatization, so as to establish a standardized information technology management system that suits the actual situation. Enhance the purpose and direction of rural teachers' learning. Finally, schools need to adjust themselves in accordance with the development characteristics of the Internet + era, provide a good application environment and management atmosphere for various information technologies, and improve the consciousness and responsibility of rural teachers by organizing corresponding information technology training activities. And in the process of imperceptibility, it promotes the transformation of its educational philosophy and educational thinking, and enhances the level of personalized professional development.

4.2 Improve the professional development level of rural teachers

With the advent of the Internet + era, higher requirements have been put forward for the development of rural education. Only by innovating and transforming the traditional education model can the modern development of rural education be truly promoted. In such an environment, rural teachers should actively establish a sense of professional development, and then adapt to the development requirements of the Internet + era by changing their own roles [2]. On the one hand, rural teachers should strengthen their understanding of the characteristics of the information society, integrate more Internet resources into daily teaching, and actively promote the transformation of teachers' teaching methods and students' learning methods. From the perspective of students, under the guidance of rural teachers, students can better improve themselves through Internet technology, and narrow the gap with urban students through more scientific learning methods, laying a foundation for the realization of rural revitalization. Base. On the other hand, in the face of a complex and changeable information environment, rural teachers also need to establish a lifelong learning attitude, and constantly absorb more new technologies and methods, so as to better adapt to the rural teaching environment in the "Internet+" environment. change. At the same time, rural teachers should further strictly demand themselves on the original basis, grasp the information resources in the Internet + environment, do a good job in teaching practice and teaching reflection, and improve their ability to adapt to the new situation. It is worth noting that the continuous development of the "Internet + education" model will help to further narrow the urban-rural gap and promote education balance. At the same time, with the help of strengthening rural teacher training, it can also enhance the teaching force in rural areas and continuously reduce the level of urban and rural teachers. gap.

4.3 Build a diversified development platform

In the process of developing rural education, we will face certain difficulties in terms of school scale, source of students, and teaching resources. Therefore, it is necessary to build a professional information development platform. Through the information development platform, the application of network resources can be further optimized, so as to promote the development of teaching in the form of a team, and promote the improvement of the senior professional quality of rural teachers. Under the leadership of the "Internet + Education" model, rural education methods and teacher training models are also undergoing further changes. With the help of cloud computing, big data, artificial intelligence and other technologies, rural teachers can provide a broader range of independent exploration and cooperation and exchanges. platform. Compared with the traditional development model, the establishment of an information development platform can better realize the integration of various teaching resources and human resources, while rural teachers can use WeChat groups, public accounts and other forms to communicate with teaching backbones, teaching researchers, etc. As well as education experts to communicate, and through experience sharing and brainstorming to solve the difficulties encountered in the work. Under such a model, it helps to enhance the enthusiasm of rural teachers, and continuously enhance their academic confidence, thus forming a virtuous circle. At the same time, the construction of the information development platform also helps to establish an education and teaching community, and improve the comprehensive ability of rural teachers through more scientific problem discussions and teaching and research activities [3]. In addition, rural teachers can also transfer teaching experience through teaching reflections, teaching cases and other forms after learning on the platform, so as to gradually improve the process of teaching reflection and redesign, and enhance the rationality and sensitivity of rural teacher education and teaching. The improvement of teaching and research ability and professional development level lays the foundation.

5.CONCLUSION

In summary, improving the level of rural education is an important way to promote rural revitalization. Therefore, it is necessary to further promote the individualized professional development of rural teachers. With the advent of the Internet + era, rural teachers can further improve their professional level with the help of Internet technology, and at the same time build a broader development platform for them through the information management system, laying a foundation for driving the professional development of rural teachers.

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Discussion On the Teaching Mode of Online and Offline Mixed Badminton Courses in Colleges and Universities in The Post-Epidemic Era

Gong Ning
Hunan City University, Yiyang, Hunan 413000, China

Abstract: This article will introduce in detail the application value of the online and offline mixed curriculum teaching mode of college badminton. Through professional research and investigation, we will accurately find out the practical application of this type of teaching method in college badminton courses in the post-epidemic era, such as optimizing teaching materials, improve teaching methods, create a teaching atmosphere and improve teaching evaluation, so as to comprehensively improve the level of badminton skills of college students.
Keywords: Online And Offline Hybrid Teaching Mode; College Badminton; Post-Epidemic Era

1. INTRODUCTION

The epidemic era has caused great troubles to the teaching of various subjects in colleges and universities. Because badminton teaching requires high venues, its teaching effect is greatly affected by the epidemic. Under the guidance of the online, online and offline mixed teaching model in the post-epidemic era, it will be greatly affected. Improve a number of problems in the previous badminton teaching, and enhance the students' physical ability.

2. THE APPLICATION VALUE OF THE ONLINE AND OFFLINE MIXED CURRICULUM TEACHING MODE OF COLLEGE BADMINTON

On the one hand, in the post-epidemic era, the use of online and offline hybrid teaching methods for college badminton courses will help improve teaching efficiency. Specifically, traditional badminton teaching is mostly face-to-face teaching. This type of teaching form can show the small skills in the badminton course, such as the flapping, pushing, hooking and releasing of the ball before the net, in order to enhance the flexibility of this type of action. , College students need to practice repeatedly after class, and it is difficult for teachers to grasp the effect of the exercises in the first time, which reduces the effectiveness of this type of teaching. After using the online and offline hybrid teaching mode, teachers and students will be more closely connected and communicate more smoothly. Students can make full use of the various spaces in their lives and classrooms to effectively improve the convenience and flexibility of badminton teaching. , To enhance students' badminton learning effect [1].

On the other hand, when learning or teaching related badminton courses, this type of teaching has a greater demand for the venue. Teachers need to lead students to practice combat and pace exercises. Only suitable space can meet the practice needs of students. In the process of using online and offline hybrid teaching mode, the interaction between teachers and students will become easier. The previous teaching troubles caused by insufficient space will be effectively alleviated. When using this type of teaching method, teachers can use badminton skills The integration of the theory and practice of Badminton will help more students correct their wrong actions and meet their learning needs after standardizing their badminton skills.

3. THE SPECIFIC APPLICATION OF THE ONLINE AND OFFLINE MIXED CURRICULUM TEACHING MODE OF COLLEGE BADMINTON IN THE POST-EPIDEMIC ERA

3.1 Optimize teaching materials

During the period of creating online and offline hybrid teaching methods, badminton teachers in various colleges and universities should use the network platform to optimize a variety of teaching materials in a timely manner, so as to lay a solid foundation for the development of subsequent teaching work.

Specifically, teachers should set up a practice course of badminton teaching once a week according to the current teaching needs, and teach specific badminton skills according to different venues. For example, when teachers and students coexist in a small space, teachers can teach basic movements such as high-range swings; while during multi-ball practice or step coordination, students should choose a more spacious venue. During the implementation of badminton teaching in various colleges and universities, teachers can use the online and offline hybrid mode to expand more teaching resources. For example, find various graphic resources in the big data platform, and closely integrate the content of badminton teaching materials with big data technology. You can search for badminton learning content you want to see through the big data platform after class.

From the point of view of teachers, when using the online and offline hybrid teaching mode, they can prepare richer teaching materials in a shorter time, which not only improves the teaching effect, but also effectively breaks the space limitations of this type of classroom before; and For college students, they can search for teaching content on their own and learn more badminton skills outside the classroom. Their learning and understanding of badminton courses will become more in-depth, and the teaching and learning effects will be improved.

3.2 Improve teaching methods

Due to the peculiarities of badminton teaching, when teaching such courses, teachers need to focus more on the practice of action correction, explanation and demonstration. During the implementation of offline teaching, they need to emphasize different forms of technical actions and actively correct their appearance. Wrong action, comprehensively enhance the effect of badminton teaching. During the use of online and offline hybrid teaching methods, teachers should use big data platforms to comprehensively analyze different students' cognitive preferences for badminton learning, and put different teaching methods into corresponding students to improve the pertinence of this type of teaching [2].

For example, a college badminton teacher used the online and offline hybrid teacher method to develop this type of course. In the offline classroom, it mainly corrects the technical movements of different students, guides them to implement different levels of skill drills, and integrates part of the teaching process. Filmed into a video and transmitted to the corresponding big data platform, students can watch the changes in their own skills and movements and more knowledge of badminton courses online, enriching their badminton literacy and improving their skills.

3.3 Create a teaching atmosphere

In the post-epidemic era, the teaching atmosphere of badminton courses in colleges and universities has become more important. A single teaching model cannot increase students' interest in the sport. Therefore, it is more important to create a new teaching method. During the use of online and offline mixed teaching methods, teachers can optimize the teaching environment at the right time and take the initiative to create different types of badminton learning classrooms. For example, in the current post-epidemic era, the majority of teachers and students must still maintain a certain distance during offline teaching. This distance has a greater impact on the teaching effect, and it is difficult for some technical actions to be directly presented to students. The combined offline teaching method not only breaks the teaching restrictions of time or space in a timely manner, but also allows students to watch more badminton skill movements more intuitively, which helps correct their own movement errors at any time and comprehensively improves the effect of badminton learning. In addition, in the post-epidemic era, no matter what kind of courses are taught, it is extremely vulnerable to emergencies. If only the previous offline teaching is used, it will be extremely difficult to develop and promote badminton courses in the case of limited space. After the mixed teaching method is adopted, it can effectively deal with the various situations encountered in current teaching, create a better badminton learning atmosphere for students, and create a flexible and distinctive teaching environment for colleges and universities.

3.4 Improve teaching evaluation

Generally speaking, after completing badminton teaching, teachers and students should make after-class evaluations according to the teaching effect. For the evaluation of online and offline mixed teaching methods, teachers need to skillfully integrate the quality of their teaching with the learning effect of students. Generally speaking, all students in the class need to participate in the evaluation, and the evaluation content should include Learning results, learning process, mid-term and final test scores, etc., and use mutual evaluation and self-evaluation to complete the evaluation work. When college students conduct after-class evaluations, they need to give feedback on the strengths and weaknesses of teachers in such courses in a timely manner. Through student evaluations, teachers can have a more comprehensive understanding and grasp of the deficiencies of their own professors, so that they can correct their own shortcomings in a comprehensive manner. Improve teaching effect. In addition, teachers must input the evaluation content into the big data platform in a timely manner after completing the teaching evaluation. If conditions permit, they can also set up an electronic evaluation file to provide support and help for the subsequent teaching innovation.

4.CONCLUSION

To sum up, in the case of the outbreak of the epidemic, it has caused great troubles to college teaching, and colleges and universities should change the teaching mode in time in their daily teaching. Use online and offline mixed teaching to carry out this kind of teaching, while completing the teaching task, bring better quality badminton teaching content for students.

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The Theoretical Cognition of OBE Concept and Its Practice in Physical Education Professional Teacher Certification

Yingying Gong
Hunan City University, Yiyang, Hunan 413000, China

Abstract: Under the background of the new era, the OBE concept advocated is widely used. It is widespread in higher education and provides action guidelines and professional concepts for teacher-training majors. This article will describe the certification of the OBE concept, hoping for related majors Provide constructive comments.
Keywords: OBE; Physical Education Major; Teacher-Training Professional Certification; Practice

1. ANALYSIS OF OBE CONCEPT

Objectively speaking, the OBE concept is embodied in two aspects

1.1 Ensure that professional students complete the stage of study and have the knowledge, skills, and accomplishments in this area;

1.2 The school uses existing mechanisms and resources to provide students with an effective environment for cultivating various abilities in order to maximize their abilities. At this time, the school's responsibility is to lay the foundation for graduation, so that students can integrate into the social environment and meet the needs of talents. Standards always reflect the two aspects of education responsibility and talent training. The OBE concept emphasizes the results of students' learning, while traditional teaching emphasizes the results of teaching. It also shows the importance of taking students as the main body and gradually enriching its own development and teaching depth through learning output in the later period.

2. PREREQUISITES AND STEPS TO IMPLEMENT THE OBE MODEL

2.1 The application of OBE mode requires prerequisites, which can be summarized in three points

2.1.1 Students have completed their studies and achieved achievements;

2.1.2 The learning results can draw inferences from one another to achieve more in-depth learning;

2.1.3 Schools can effectively master the code lock for quality learning.

The application of the OBE concept in teaching always emphasizes the main line of expected learning output, and then conducts more in-depth exploration based on the learning results, implements the education of learning, evaluation, and feedback, so that students can truly learn.

2.2 Define learning output

Objectively speaking, student learning achievement is the key point of OBE, both the end point and the starting point. The result definition is more troublesome, and it needs to involve the teaching subject's own planning, which can be summarized as: society, environment, students, employers, parents, etc. It is worth noting that learning output must have obvious characteristics in order to complete the conversion with performance, and then provide a basis for later evaluation.

2.3 Achieve learning output

Learning output cannot be talked about on paper. It should be transformed into a capacity structure and realized with the classroom as the main activity. Teachers' daily lesson preparation plan and implementation should reflect the principle of reverse design to lay the foundation for the next expected learning. Furthermore, the OBE model fully emphasizes the student's dominant position, pays attention to what students learn through the classroom, and prefers humanized teaching. As teachers, they should teach in accordance with their aptitude and carry out diversified teaching according to the different characteristics of students, that is, the teaching plan is aimed at students.

2.4 Assess learning output

According to empirical analysis, the OBE concept consists of three links: learning output, realization, and evaluation, of which evaluation is the most important and the key to verifying the quality of student learning. The teaching evaluation advocated by OBE is not about grades, time, etc. in stereotypes, but focuses more on the quality of the results obtained by students. At present, there are basically two ways to assess the application: multiple and ladder-style. Instead of making comparisons between peers, it uses oneself as the object to check the progress of the learning effect.

If you want to implement the evaluation link, the school should fully grasp the content of the learning plan, learning output evaluation indicators, and implement the evaluation of students through scientific and reasonable methods, and the evaluation should adhere to the principles of timeliness and openness, so as to truly reflect the results of students . Or use the Internet to carry out this link to make the method more convenient.

2.5 Use learning output

Use learning output as the last link, specifically based on the evaluation results, analyze and plan, and point out the problems in teaching, and then innovate methods, or optimize or adjust learning output.

3. THE PRACTICE OF IMPLEMENTING THE OBE CONCEPT IN THE COLLEGE'S PHYSICAL EDUCATION PROFESSIONAL TEACHER CERTIFICATION

Under the background of the new situation, various physical education professional normal schools pay more attention to the comprehensive training of talents, and move closer to the application-oriented, innovative, and entrepreneurial-oriented. At this time, the OBE concept has far-reaching significance and can realize the training strategy of talents. In the development process of a university, it emphasized the application of the "Ordinary Peak School Teacher Professional Certification Implementation Measures (Interim)", clarified the output-oriented education goal, and strengthened the education integration of the OBE concept in the regulations in recent years .

In the next development of the physical education major, OBE-related plans should be strictly implemented to become a rigorous and professional teacher-certified major of the Ministry of Education. If you want to better realize the certification work, teachers and students of sports majors should make progress together to start this education battle [1].

3.1 Establish professional training goals

Objectively speaking, the goal of the physical education major can be determined as: based on the provinces and cities, facing the whole country, to create a high-quality, high-level modern teacher team with comprehensive qualities of morality, intelligence, physical education, art and labor, and noble humanistic spirit, which can be effective at work Excellent teachers who can communicate and communicate in the classroom, and have the ability to reflect, can meet the learning needs of students, and can be stable and comfortable in teaching.

3.2 Set professional graduation requirements according to training goals

After literature verification and expanded research, a university has determined the talent training strategic plan, and invited professional professors and revision groups to join, and put forward the graduation requirements of “learning, educating, and reflecting”, which can be divided into three categories:

3.2.1 Possess professional teacher ethics;

3.2.2 Love the post and work hard, really love physical education;

3.2.3 Possess professional qualities and can transmit scientific sports knowledge to students;

3.2.4 In the teaching process, learn to be inclusive and adhere to the principle of teaching students in accordance with their aptitude;

3.2.5 As a teacher, you should have management skills and be able to control students;

3.2.6 Possess professional education ability, dedication and service spirit at the same time;

3.2.7 Have a clear plan for a sports career and learn to reflect;

3.2.8 As a teacher, you should learn to cooperate and have good social skills [2].

3.3 The corresponding support situation and analysis of professional graduation requirements for professional training goals

In order to achieve the above goals, a reasonable plan should be made for professional graduation, and a scientific education strategy and talent training goals should be provided for professional talents. Professional talents can be divided into different ability training plans. Colleges and universities have determined this and can be divided into: The training goals of teachers' ethics, professional ability, and reflection ability.

3.4 The support system of different training goals for graduation requirements

The above mentioned the four characters of teacher's ethics and sentiments repeatedly, that is, whether the physical education teachers' graduate career plan exists: consciousness, longing, professional feelings, heart and mind, etc. If students have these qualities, it will be beneficial to future teaching Career development requires training during university.

Objectively speaking, the training of teachers’ ethics for physical education students can be carried out in multiple directions and directions, the most basic of which is to incorporate this aspect of literacy into the curriculum, which can be implanted in ideological and political courses, and appropriate in professional courses. Joining, students naturally form noble feelings in their ears and eyes. In addition, through physical education policies, policies and regulations, etc., let students understand the importance of teacher ethics; encourage students to participate in more social activities, such as apprenticeships, support education in the countryside, support education in Tibet, etc., so that students can truly feel the responsibility and significance of educating people ; Listen to various sports professional lectures, understand the relationship between students, grassroots, and society, and then understand that educators have a heavy responsibility.

4. CONCLUSION

In summary, the importance of adding the OBE concept to the physical education teacher majors and the comprehensiveness of using the OBE concept to cultivate talents are put forward. In recent years, many higher education institutions have begun to apply this model. The article emphasizes the education model with learning output as the main line. It can be seen that it has far-reaching significance and is conducive to the development of students and can integrate into society as soon as possible. Contribute to education and realize the great education project.

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On Effective Development Strategies of English Reading Teaching in Junior Middle Schools

Di He
Jiamusi Suburban Teacher Advanced Study School, Jiamusi, Heilongjiang, China

Abstract: As the main subject of junior high school curriculum, reading teaching in English teaching occupies a large proportion. However, the English teaching work covers a wide range, including listening, writing, reading and other aspects. It is not feasible to use teaching strategies to invest a lot of time and energy in English reading teaching to improve student performance. Therefore, in order to achieve the goal of improving teaching effectiveness, some effective teaching strategies need to be implemented. This article discusses several feasible English reading teaching strategies, hoping to provide some help for English reading teaching.
Keywords: Junior High School English; Reading Teaching; Teaching Situation

1. INTRODUCTION

In recent years, the country has vigorously promoted education reform. After that, education departments at all levels began to pay attention to the cultivation of students' all-round ability in English listening, speaking, reading, and writing. In order to comply with the concept of the education department, many English teachers are gradually innovating their own teaching methods in their teaching activities, focusing on improving the various abilities of students. In addition, in the new curriculum standard, for junior high school English teaching, the importance of cultivating students' English reading ability is emphasized, which is also the focus of the development of junior high school English teaching. Based on this, in order to improve the quality of English reading teaching, it is necessary to effectively develop teaching strategies.

2. RESPECT THE STUDENT'S DOMINANT POSITION

In English teaching, students are practitioners of English reading and are in a dominant position. Therefore, in teaching, teachers should guide students to give full play to their main role and teach students the methods of learning, rather than teach students the problem-solving model mechanically. This method can ensure that students can not only solve a problem, but also It is possible to draw inferences from one another and solve one type of problem.

In addition, the teacher should combine with the actual learning situation of the students, fully consider the students' acceptance ability, and then set the teaching goals, which can effectively enhance the enthusiasm of the students in English reading. With the enthusiasm, the students' reading Ability will improve. In teaching activities, teachers occupy a dominant position and students are in a dominant position. Therefore, teachers should pay attention to whether the actual situation of the students can be consistent with the content of the textbooks, formulate effective learning plans, and encourage students to rely on their own strength to complete the pre-determined Study plan.

3. STIMULATE STUDENTS' INTEREST IN ENGLISH LEARNING AND ENCOURAGE STUDENTS TO ACTIVELY READ ENGLISH

The new curriculum standard emphasizes the main role of students, pointing out that the learning process should be returned to students, and students' emotions, attitudes and values should be cultivated [1]. Therefore, teachers should pay attention to the cultivation of students' interest in learning, create a relaxed and happy atmosphere in the classroom, and encourage students to be full of interest in English reading. In such an atmosphere, students can not only absorb knowledge and methods into their own learning process. In, spiritual satisfaction was also obtained.

English reading materials are the carrier of English reading teaching, but the current English teaching materials are relatively single. Therefore, teachers should collect some reading materials related to students' lives. This approach can cultivate students' interest in reading and increase students' reading volume, Can also extend students' reading horizons. At the same time, in the process of reading teaching, you should ask some questions worth thinking about the reading content, for example, "Do you like the ending?" "If you are the writer, you will write a happy ending or bad ending?" Similar questions can guide students to think about reading materials and gain more knowledge. In addition, in daily English teaching, teachers can use some pictures, gestures and multimedia tools to create some teaching situations. These teaching situations should be in line with students' daily life, so that students can better integrate into the teaching situation. In the teaching situation, students can learn some English knowledge, and then achieve the goal of improving English reading ability.

4. CHANGE CONCEPTS AND ENRICH CLASSROOM TEACHING METHODS

For a long period of time, the mode of English reading teaching was that teachers only led students to translate reading materials together. In this mechanical translation process, some knowledge points related to reading materials were incorporated and explained. The teaching effect of this teaching method is largely influenced by the teacher. Students cannot truly integrate into the reading teaching process, and thus fail to reflect the main role of students in it, and their subjective initiative cannot be effectively brought into play. , The ability of English reading cannot be improved naturally. Therefore, in teaching, teachers should change their inherent concepts and enrich the teaching methods used in English reading teaching. Specifically, the following two methods can be adopted.

4.1 Encourage students to cooperate in reading in the form of group learning

In teaching activities, group learning has always been an effective way of learning. The group teaching method in English reading teaching allows students to exchange their views within the group and discover different views on the same issue between themselves and group members , And in the process of communication, find out the defects of these methods, learn from each other, and strengthen the understanding of knowledge. Through group discussion activities, students can be guided to carry out independent exploration by relying on their own abilities in the learning process, and to enhance the ability of independent learning. Teachers should actively guide students to participate in group learning. For example, in the teaching of the reading material of Unit 5 "Do you remember what you were doing?" in the second volume of the new target, the teacher may not explain the content of the article and the knowledge points contained in it, but can first Guide students to collect news reports about the World Trade Building attack and the assassination of Martin Luther King Jr. involved in the reading materials in small groups, so that students have a prior understanding of the situation. After you have a general grasp of the event, you can discuss it in the group, and you will learn more about it through exchanges. In this way, when the teacher explains, the students will not have too much confusion.

Through group learning, students' cooperative learning concepts can be enhanced, and students' cooperative reading ability can be cultivated. It can not only help students master the methods of collecting information and materials, but also effectively extend students' thinking and vision, and enhance students' English. Reading ability [2].

4.2 Write scenario scripts and encourage students to perform

Some articles in English textbooks have strong storytelling. Teachers can guide students to use their imagination and rewriting ability, adapt the stories in the materials into a scenario for a sitcom, and then let the students organize their own team according to the number of characters in the script. The melodrama is performed. In the process of adapting the script and rehearsing, students will have a deeper understanding of the content of the article. Teachers should also set aside ample time in the classroom so that each group can have the opportunity to perform. After the performance, the teacher should encourage the students in the class to evaluate, and the teacher should also encourage and evaluate the students from many aspects, so that the entire class can participate in the teaching of English reading, and at the same time, it creates a relaxed and happy experience. The classroom atmosphere increases the enthusiasm of students.

5. CONCLUSION

In summary, in junior high school English teaching, reading teaching is one of the key points. Teachers should play a good guiding role in teaching activities, cultivate students' interest in learning and good habits, enhance their enthusiasm for learning, and encourage students to independently participate in English reading. In teaching, teachers should also notice that each student's original foundation and abilities are different. They should adopt hierarchical teaching and teach students in accordance with their aptitude to ensure that all students can make progress on their original foundation. The improvement of English reading ability is the key to improving English performance. Teachers should adopt scientific teaching methods to cultivate students' comprehensive quality.

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