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CONTENTS

Analysis on the Integration Point of Ideological and Political Elements in the Course of National Economic Accounting

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Abstract: Course ideological and political means "Courses carry ideology and politics" and "Ideological and political education lies in courses", which is the rational return of ideological and political education in colleges and universities. Starting from the research content of national economic accounting course, this paper discusses the integration point of ideological and political elements and teaching content of national economic accounting course and infiltrates implicit ideological and political education elements into explicit professional knowledge teaching, aiming to integrate teaching activities with ideological and political elements and establish a complete course ideological and political teaching system of national economic accounting course.
Keywords: National economic accounting; Ideological and political elements; Integration point

1. INTRODUCTION

The course of national economic accounting is the main course for students majoring in economic management in finance and economics colleges. This course is how to quantitatively describe and analyze the whole process of national economic operation. The course contents are designed in accordance with the operation process of national economy, basically including gross domestic product accounting, input-output accounting, income distribution accounting, consumption and non-financial investment accounting, financial transaction accounting, assets and liabilities accounting, international balance of payments and international investment position accounting, etc. In addition to these basic contents, it also includes a number of expanded accounting contents, such as comprehensive accounting system of resource environment economy, population and labor accounting, health accounting, tourism accounting, emerging economic accounting, international comparison of national economic accounting and so on. There are rich ideological and political elements in the course content. How to combine the knowledge system of national economic accounting course with ideological and political education elements organically and integrate explicit knowledge learning and implicit ideological and political education in classes and after-class activities are an important issue faced by teachers engaged in statistics professional teaching. Based on the actual teaching experience, the author intends to excavate and sort out the moral education elements in the course of national economic accounting.

2. NATIONAL ECONOMIC ACCOUNTING COURSE

TEACHING OBJECTIVES AND IDEOLOGICAL AND POLITICAL EDUCATION OBJECTIVES

2.1 The overall goal of course ideological and political reform

According to the core issue of cultivating socialist successors in colleges and universities mentioned by general secretary Xi's spirit of the national ideological and political work conference - "what kind of people should be cultivated in colleges and universities, how to cultivate them and for whom", this paper intends to skillfully combine the content of national economic accounting course with the socialist core values, so as to make a high-quality course integrating professional knowledge, moral education function and value guidance, which will give full play to the role of university classes as the main position to cultivate the morality, skills and values of socialist successors. Specific implementation scheme: excavate each knowledge point in the content of national economic accounting course that can be linked with "ideological and political education" and link professional knowledge and case practice with it, let the course content emit the flavor of "ideological and political education", reflect the spirit of inspiration and patriotism, highlight the leading role of socialist core values, and conform to the spirit of the times of social and economic development advocated by the report of the 19th National Congress of the Communist Party of China.

2.2 Teaching objectives

Through this course, students can systematically and comprehensively grasp the framework system and accounting methods of national economic accounting, have a correct understanding of the operation mechanism and operation law of the whole national economy, cultivate their abilities to analyze and solve national economic phenomena and problems from the perspective of statistics, so as to lay a solid foundation for further study of another professional knowledge. Through study, students will have the ability to understand the whole process of national economy operation through the system of national accounts and the balance sheet, and truly understand the connotation and function of a series of macroeconomic aggregate indicators such as gross domestic product (GDP), gross national income (GNI), national disposable income (NDI), total consumption and total investment, as well as a series of macro price indexes such as GDP price reduction index, consumer price index (CPI), producer price index (PPI), etc. More importantly, this course can cultivate students' ability to analyze and solve macroeconomic problems from a combination of

qualitative and quantitative perspectives.

2.3 Course ideological and political education objectives

The course of national economic accounting contains abundant ideological and political education resources, which has inherent consistency with the ideological and political education objectives of colleges and universities in many aspects, such as cultivating students' correct thinking, improving moral quality, strengthening social responsibility and stimulating patriotic feelings. To promote the integration of the teaching of national economic accounting and the goal of ideological and political education in logic and reality, this course puts forward the curriculum designing path with "data quantification and background analysis" as the core concept and reconstructing educational objectives, establishing the concept of "double education", mining "course ideological and political" resources, and

reforming teaching methods as the key steps. Through teaching practice and analysis, it is proved that the model can effectively realize the teaching goal of value shaping, ability training and knowledge imparting of national economic accounting course.

3. THE TEACHING PROCESS SHOULD BE CAREFULLY DESIGNED AND THE "COURSE IDEOLOGICAL AND POLITICAL" SHOULD BE INTEGRATED INTO IT

There are rich ideological and political elements in the teaching content of national economic accounting. The main teacher penetrates moral education elements into professional knowledge, which can help college students establish correct world outlooks, outlooks on life and values. The moral education elements contained in the specific teaching content of national economic accounting course are shown in Table 1.

Table 1. Moral education elements in national economic accounting course

Serial number	Summary of teaching content	Moral education elements embodied	Teaching method
1	The meaning and function of GDP	Sense of mission, honor and patriotism	Knowledge transfer: the meaning and function of national economic accounting; Value guidance: through the interpretation of the government work report, let students pay attention to national conditions and national strength, and stimulate students' sense of honor and mission
2	GDP accounting method	Scientific spirit, honesty and trustworthiness	Knowledge transfer: how to calculate GDP, which output is counted in GDP, and emphasize the authenticity of GDP statistics; Value guidance: use cases to warn students not to cheat in their study, life and conduct, but to seek truth from facts, be honest and trustworthy
3	Economic growth rate accounting	System confidence, patriotism	Knowledge transfer: how to calculate constant price GDP and GDP volume index; Value guidance: use the "comparative" case teaching method and digital data to compare economic growth rate of China with other developing and developed countries, inspire students to look at problems dialectically, establish students' system self-confidence effectively, and stimulate students' patriotic feelings
4	Compilation and application of price index	Seeking truth from facts, scientific spirit	Knowledge transfer: compilation and application of price indices (PPI, CPI, etc.) commonly used in China; Value guidance: taking the preparation process of CPI as an example, let students understand the method of price data survey and weight determination, and cultivate students' scientific spirit in scientific research, and honesty and truth-seeking spirit in real work and life
5	Non-financial investment accounting	Patriotism, system confidence	Knowledge transfer: accounting method of non-financial assets and preparation of physical capital flow statement; Value guidance: use the practical materials of investment and financing of government projects benefiting people's livelihood to reflect the reform of national investment and financing mechanism, and use video materials such as "great power heavy equipment" and "made in China 2025" to reflect the national innovation driven strategy, and stimulate students' patriotic feelings and system self-confidence
6	Classification and transaction of financial assets	Honesty and trustworthiness	Knowledge transfer: types of financial assets and contents of financial transactions; Value guidance: according to the list and cases of dishonest people disclosed by the media, carry out classroom discussion to guide students to establish the values of honesty and trustworthiness
7	Accounting method of financial assets	Patriotism, system confidence	Knowledge transfer: how to calculate financial assets and compile financial capital flow statement; Value guidance: when teaching loans, introduce the "Sichuan poverty alleviation microfinance policy" as an example, and compare with the high interest rate of foreign microfinance, China's poverty alleviation microfinance implements zero interest, and interprets China's system superiority and people-centered idea
8	Balance of payments accounting	Patriotism, policy confidence	Knowledge transfer: balance of payments accounting content, compiling balance of payments statement; Value guidance: actively synergize the "one belt, one road" international cooperation platform, and organize students to visit customs and other places in Bengbu, Anhui Province for internship, so that students can experience the economic globalization trend and the achievements of China's reform and opening up, and strengthen their unwavering understanding and confidence in reform and opening up.
9	Classification of assets and liabilities	Scientific spirit, honesty and trustworthiness	Knowledge transfer: asset classification, concept of intellectual property products; Value guidance: combined with Huawei has been listed in the "entity list" under the control of the US Department of Commerce during the Sino US trade war, students can deeply feel the importance of enterprise technological innovation, and as contemporary college students, they should be practical in learning
10	Assets and liabilities accounting	Fair, honesty and trustworthiness	Knowledge transfer: how to prepare balance sheet; Value guidance: by simulating the preparation process of enterprise assets and liabilities statements, without whitewashing the statements, students can be guided to practice the concept of justice and integrity
11	Comprehensive accounting system of environmental	Concept of sustainable	Knowledge transfer: master the comprehensive accounting framework of environmental economy;

	economy(SEEA)	development, scientific spirit	Value guidance: through case analysis, it is of great significance to cultivate a new generation of environmental protection workers by not considering the damage that sustainable development will cause to future generations, and stimulate students to think about how to realize the healthy and stable economic and social development and sustainable development
12	International comparison of national economic accounting	Sense of honor, system confidence	Knowledge transfer: introduction of international comparison methods; Value leading: compare GDP measured by exchange rate method and PPP ratio method between countries, and cultivate students' sense of honor and system confidence

4. A DETAILED EXPLANATION OF THE TEACHING INTEGRATION POINT OF "COURSE IDEOLOGICAL AND POLITICAL" IN THE COURSE OF NATIONAL ECONOMIC ACCOUNTING

4.1 When Studying the Role of National Economic Accounting, We Should Express the GDP Target Set By Previous National Party Congress On Achieving A Moderately Prosperous Society In An All-Round Way By 2020 As The Breakthrough Point

The National Party Congress of the Communist Party of China (CPC) has stated the goal of doubling GDP by 2020 for achieving a moderately prosperous society in all respects. Every National Party Congress since the 15th and the 16th has mentioned doubling GDP while the report of the 19th CPC National Party Congress no longer did. What does it mean? From students' discussion, we can see the reason why we did not mention the doubling of GDP is to continue to improve the quality and efficiency of China's economic development, and not blindly pursue the maximum speed of economic development. Through similar cases, students will be guided to discover interesting changes behind data and the development ideas of new economy in the new era in China and understand China's economic development and international economic situation. More importantly, student should understand the concept of China's economic development behind a large number of international and domestic economic data, pay attention to the national conditions and national strength, and stimulate students' mission.

4.2 when learning the statistical methods of gdp, we should take seeking truth from facts, honesty and faithfulness, fairness and justice as the breakthrough point

The international community has been questioning the data of China's GDP growth rate, believing that the methods used in China's GDP statistics are not scientific and the data are incomplete. In fact, the quality of the basic data of China's GDP accounting is very high, and the accounting method has been fully integrated with the international standard accounting system (SNA), so the doubts about China's GDP growth rate data do not accord with the actual situation. Based on this, teachers make students realize scientificity and preciseness of China's GDP accounting method through detailed introduction of the accounting principles and methods of China's GDP. In the process of accounting, statistical departments abide by the statistical laws and regulations, and fully guarantee the quality of statistical information based on the principle of seeking truth from facts in order to stablish students' sense of responsibility of abiding by discipline and law, being honest and trustworthy, fair and just.

4.3 When studying international economic comparison, we should take the role of national culture and national system in economic development as the breakthrough point

First of all, make comparison of China's own development. The 70 years since the founding of the People's Republic of China and the 40 years of reform and opening up have yielded more achievements than any other time in China's history. The reason is that the political system of new China is different from the old one. China's existing system is a rising star in the history of world political development. Compared with the generation logic, evolution track and realistic state of the old system, the existing one has different cultural genes, structural mechanism and political performance. Obviously, China's current system is showing the world a unique advantage, which has been greatly highlighted in the new epidemic in 2020. Reform and opening up and other reform policies have successfully combined China with the world economy, making China an active and powerful economy, and the trend of reform is irresistible, which will have a far-reaching impact on the future economic development. The vertical comparison of China's own economy makes it easy for students to understand the great role played by our country's culture and system in economic development. Then compare China with India, which is also a developing country. For example, China and India are both populous countries located in Asia. Since entering the 21st century, both have maintained a high economic growth rate. Before the financial crisis in 2008, China's average annual growth rate exceeded 8%, which reached 14.23% in 2007. India's economic growth rate also has kept rising in recent years. In 2016, India's growth rate was 7.10%, exceeding China's 6.7%. However, behind such a high economic growth rate in recent years, India's per capita GDP growth is very slow, far behind China. One of the reasons is that it has a population of 1.3 billion, and its manufacturing employment opportunities have not increased enough, so that the huge demographic dividend has turned into a huge population burden. India's system is also an important factor leading to the current situation. India's urbanization is very fragile, and the government's investment rate in infrastructure is low. With backward infrastructure, it is difficult to support the development of modern economy. Land in India is privately owned in the hands of a few people, making it difficult for developers to acquire. At the same time, India's financial capacity is weak and it is unable to invest in infrastructure on a large scale, which is quite different from China's large-scale investment in infrastructure such as high-speed rail, airport and road. Of course, it should be used to explain the decline of China's economic growth rate in the teaching process. Even though China's economic growth rate is slower than India's, China has entered a stage of medium-and-high speed growth and a stage of more pursuit of high-quality development. The

new demographic dividend is a more advanced human capital dividend. The "comparative" case analysis of the development differences between China and India can effectively establish the students' system self-confidence and patriotic feelings.

5. IMPROVE TEACHERS' IEDOLOGICAL AND POLITICAL LITERACY, SET AN EXAMPLE TO BRING "COURSE IDEOLOGICAL AND POLITICAL" INTO THE CLASSROOM

"Course ideological and political" is not to add a new course, nor to add a teaching activity, but to integrate ideological and political education into course teaching. Teaching with morality integrates ideological and political contents into professional teaching, which requires higher ideological and political literacy of college teachers. Teachers should constantly improve their own political theory level, accumulate profound knowledge, and cultivate rich humanistic culture and scientific spirit. Only in this way can they deeply tap the ideological and political elements in professional courses, and naturally integrate moral education into classes, so as to achieve the effect of moistening things silently. Secondly, teachers must set up the lofty ideal of communism and the common ideal of socialism with Chinese characteristics, firmly have confidence in the road, theory, system and culture of socialism with Chinese characteristics, respect excellent traditional culture and believe in socialist core values. Only in this way can they have confidence in the teaching process and show true feelings, touch the hearts of students and form a strong appeal to students. Finally, teachers must teach by precept and example. Importantly, example is better than precept. Teachers should pay attention to the moral guidance of students from the classroom to the outside. Teachers should strengthen self-cultivation in their daily work, study and life. They should love the party and the country, abide by disciplines and laws, devote themselves to their work, love students, and be honest and friendly. They should influence students with noble moral sentiment and attract them with unique personality charm, so as to stimulate their spirits of upward kindness and seeking truth and pragmatism. "Course ideological and political", in the form of constructing a whole-staff, whole-course, whole-education pattern, will make all kinds of courses and ideological and political theory courses step into the same direction, forming a synergistic effect. In the teaching process of national economic accounting course, it is necessary to give full play to the role of classroom teaching as the main channel in educating people. That is to say, focus on the ideological and political education throughout the whole process of curriculum education and teaching, and implement teaching and educating people in the main channel of classroom teaching. With the social attribute and value connotation of "course ideological and political", the teachers should focus on the improvement of students' all-round abilities, adhere to the correct concept, pay attention to the teaching of morality,

establish values, cultivate more useful professionals with political firmness and full skills, and give full play to the educational function of national economic accounting course.

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Design and Application of Advanced Mathematics Micro-Course Teaching Based on BOPPPS Model-Take the "Derivative Concept" as an Example

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Abstract: The BOPPPS model is widely used in college teaching. By dividing the teaching content, teaching in the form of micro-classes is used to complete the teaching goals. The six links are successively expanded, which provides a scientific and systematic implementation method for classroom teaching. Besides, it also makes the teaching content and the arrangement is more reasonable. It meets the cognitive needs of students, and better provides teaching. This paper takes the content of the lesson "Derivative Concepts" as an example to discuss the teaching design and application of the advanced mathematics micro-course under BOPPPS model.
Keywords: BOPPPS Model; Advanced Mathematics; Micro-Course; Instructional Design

1. INTRODUCTION

With the continuous changes of the times and the continuous improvement of modern information technology methods, teaching is also adapting to the continuous development of the times. The reasonable use of micro-classes for teaching has become a new trend in today's teaching model. The micro-course teaching model can not only effectively supplement traditional teaching, but also an effective means to expand teaching capacity. As a basic subject, the most prominent feature of advanced mathematics is that it has a high degree of abstraction. However, in the traditional teaching model, teachers' proofs and explanations of abstract conceptual theorems will not only make students feel extremely boring, but also fail to understand deeply. The knowledge of advanced mathematics to be learned is widely used in real life. Advanced mathematics is different from elementary mathematics. It is necessary to look at the problem from the viewpoint of changes in sports. The idea of extremes also runs through the theoretical study of higher mathematics. Therefore, we use micro-classes to teach reasonably and demonstrate through vivid animation videos. Not only to give students a visual impact, but also to better help students understand the limits of the process. Therefore, it has a deeper grasp of the knowledge to be learned, and makes the abstract knowledge more visualized. Besides, it not only can attract students to enter the classroom, but also promote students to apply what they have learned and applies the ultimate thinking to real life. This paper combines the author's teaching practice of the BOPPPS model, taking the micro-course design of the "derivative concept" in "Advanced Mathematics"[1] as an example. It discusses how to design the micro-course teaching of higher mathematics based on this model and apply it to the actual teaching process.

2.OVERVIEW OF BOPPPS MODEL

The BOPPPS teaching model is the theoretical basis of the teacher skill training system widely implemented in Canada [2]. Through the analysis of the teaching content, in order to better complete the teaching goals, the traditional teaching process is reasonably divided into six independent modules. There are Bridge-in, Objective, Pre-assessment, Participatory Learning, Post-assessment and Suary. In order to meet the learning characteristics of the students, the micro-classes recorded by each module are designed to last about 15 minutes. Each module is interlocked with a reasonable logical relationship, forming a clear context as a whole. This puts forward more specific requirements for teachers to prepare lessons according to the cognitive characteristics of students before class, as well as for lectures in classroom teaching or recording of micro-classes after class. This model not only provides a specific practical process for effective classroom teaching, but also an effective tool for micro-course teaching design[3-4].

3.THE TEACHING DESIGN OF ADVANCED MATHEMATICS MICRO-COURSE UNDER BOPPPS MODEL-TAKE "THE CONCEPT OF DERIVATIVE"AS AN EXAMPLE

According to the BOPPPS teaching model, in order to record advanced mathematics courses into micro-classes that meet the cognitive characteristics of students, teachers need to analyze the content and objectives of each section in detail according to the requirements of the syllabus and design accordingly, so as to clarify the thinking context to start recording. At present, advanced mathematics courses based on the BOPPPS model already have modules with different knowledge points as independent units[5-6]. On this basis, combined with the characteristics of our school and the teaching characteristics of higher mathematics, through teaching practice, a good teaching effect has been achieved. The following takes the content of "derivative concept" as an example to introduce the micro-course teaching design of this model.

Because students have already learned the concept of limit before learning the "Derivative Concept" class, and derivative, a powerful tool for researching functions, needs to be given by using the limit method. Through the study of this lesson, it not only allows students to more

deeply understand the thinking of limits, but also it lays an important and solid foundation for the subsequent learning of multivariate function differential calculus. In the course of the classroom, students' interest in learning is stimulated by situational introduction, and students are guided to think positively by using problems as the driving force. Through the use of multimedia for animation and video display, students are guided to obtain the concept of derivative logically in experimental exploration, summary, and induction. Break through the difficulties and master the key points. And infiltrate inductive mathematical ideas into the process of solving practical problems, not just teach abstract mathematical concepts and theorems, and abandon the useless thinking of studying advanced mathematics.

4. TEACHING DESIGN BASED ON THE "DERIVATIVE CONCEPT" UNDER THE BOPPPS MODEL

4.1 BRIDGE-IN

By asking: What is the derivative? Introduce the topic content of this lesson to attract students to quickly turn their attention to the topic of this lesson. By introducing examples related to derivatives, such as the marginal utility of commodities in economics, the spread of infectious diseases in medicine, the instantaneous speed of linear motion in physics, etc., Students can intuitively feel that the application of the derivative tool is in life. Combining the characteristics of our school, through playing a short video, show the challenge project of a tank to achieve horizontal drift and accurate storage, and let students think about two questions at the same time while watching the video:

(1) When the tank moves linearly with variable speed, the equation of motion is $f(t) = 2t^2$, what is the instantaneous speed when $t = 10s$?

(2) When the tank enters the curve, the curve function is $f(x) = \ln x$, what is the tangent slope of the curve at that time when $x = 1$?

Raising these two questions is a combination of video content and reality, which naturally allows students to think. Because the core content of these two questions has historically been very closely related to the formation of the concept of derivative, which can be a logical transition to this book. The concept of derivatives is to be learned in each lesson. Through the creation of the situation, the students' curiosity is stimulated, and the content learned in this lesson is naturally introduced.

4.2 OBJECTIVE/OUTCOME

(1) Knowledge objective: understand the concept of derivatives; master the use of definitions to calculate derivatives of common functions.

(2) Ability goals: use examples, problem-driven, introduce derivative definitions, guide the ability to find and ask questions; use vivid and intuitive graphics to help understand the geometric and physical meaning of derivatives, and develop the ability to learn independently; Define the derivative calculation of deduction and deduction functions, and master the ability to use knowledge proficiently.

(3) Emotional goals: Through the learning of derivative concepts, students will cultivate good study habits, rigorous mathematical thinking, methods to apply what they have learned and the spirit of exploration.

4.3 PRE-ASSESSMENT

When the tank is moving linearly at a variable speed, the instrument panel displays the speed at each moment during the variable speed driving. How is this instantaneous speed obtained? When the tank enters a curve, in order to ensure the accurate storage of the tank, the selection of the driving route involves finding the tangent slope of the curve. How to solve this tangent slope?

4.4 PARTICIPATORY LEARNING

(1) Instantaneous speed

In the middle school learning process, students already know that for a uniform linear motion, the speed of a particle in a certain motion should be equal to the distance he travels divided by the time it takes. But now it is required. It is a variable-speed linear motion, which cannot be directly brought into the formula, but you can guide students to think about it this way. Although the speed of the particle changes at every moment during the movement, the speed of the particle changes within a small period of time. If it is not very large, then it can be regarded as a uniform linear motion within this small period of time, and the average speed can be calculated.

(a) Guide students to draw a schematic diagram of the movement of the object, take the time point t_0 and let it generate an increment Δt, and mark the corresponding physical quantity at the time point;

(b) Guide students to write down the distance Δs and average speed $\bar{v}$ of the object on $[t_0, t_0 + \Delta t]$.

(c) Through the display of moving pictures, let students fully understand that the time $\Delta t \to 0$ average speed tends to the instantaneous speed infinitely, so that the students can list the instantaneous speed calculation formula $v(t_0) = \lim\limits_{\Delta t \to 0} \frac{f(t_0 + \Delta t) - f(t_0)}{\Delta t}$ by themselves.

(2) Tangent slope

In the middle school learning process, students already know that only two points can determine a straight line, and they need to know the coordinates of two known points before they can be brought into the slope formula to find the slope, that is, the difference between the ordinate and the abscissa is calculated difference.

(a) There is only one point in the existing conditions. Guide students to find another point on the curve to make a secant, and write the slope of the secant according to the coordinates of the two points.

(b) Through animation demonstration, guide students to observe and summarize, on a general curve, the limit position of the secant line is the tangent line;

(c) Compare the expression of instantaneous speed and guide students to list the calculation formula $\lim\limits_{x \to x_0} \frac{f(x) - f(x_0)}{x - x_0}$ of tangent slope.

(3) The Concept of Derivative

Let students compare the commonality of the results obtained by the two introduced examples. Although the problem backgrounds are different, from a mathematical point of view, they are both the limit form of the ratio of the function increment and the independent variable

increment. In the fields of natural science and engineering technology, there are many concepts, such as current intensity, angular velocity and linear density, which can be attributed to the limit form of the ratio of the increment of the function to the increment of the independent variable. The abstract is the concept of derivative, which leads students to give the concept of derivative.

Definition: Suppose the function $y = f(x)$ is defined in $U(x_0)$, if the limit $\lim\limits_{x \to x_0} \frac{f(x)-f(x_0)}{x-x_0}$ exists, then the function $y = f(x)$ is said to be derivable at the point x_0, and this limit is called the derivative at, denoted as $f'(x_0)$

Guide students to abandon the practical significance of the two specific problems of tangent slope and instantaneous speed, and obtain the definition of derivative through abstract induction step by step, from special to general. It helps students complete the leap of thinking. At the same time, it introduces background examples related to derivatives to fully accept the influence of mathematical culture.

4.5 POST-ASSESSMENT

Explaining through examples not only sublimates new knowledge, but also makes students feel that mathematics comes from life and serves to return to life.

(1) When the tank moves linearly with variable speed, the equation of motion is $f(t) = 2t^2$ what is the instantaneous speed when $t = 10s$?

$$Solution: f'(x_0) = \lim_{x \to x_0} \frac{f(x)-f(x_0)}{x-x_0}$$
$$= \lim_{x \to 10} \frac{f(x)-f(10)}{x-10} =$$
$$= \lim_{x \to x_0} \frac{2x^2 - 2 \times 10^2}{x-10} = 40$$

(2) When the tank enters the curve, the curve function is $f(x) = \ln x$, what is the tangent slope of the curve at that time when $x = 1$?

4.6 SUMMARY

By using the limit method, the instantaneous speed is obtained from the average speed. The slope of the tangent line is obtained from the slope of the secant line, and then abstracted as the rate of change obtained from the limit of the average rate of change. It finally rises to the core concept of calculus-derivative. Lead the students to conclude general steps for calculating derivatives:

(1) Find the increment: $\Delta y = f(x) - f(x_0), \Delta x = x - x_0$,

(2) Calculate the ratio: $\frac{\Delta y}{\Delta x} = \frac{f(x)-f(x_0)}{x-x_0}$,

(3) Find the limit: $f'(x_0) = \lim\limits_{\Delta x \to 0} \frac{\Delta y}{\Delta x}$.

5.CONCLUSIONS

In the teaching process of advanced mathematics, by combining the content of learning with actual problems, the situation is introduced. Then the knowledge points to be learned are reasonably divided, and each knowledge point is carefully designed according to the BOPPPS model. Then, it can be recorded to micro classes, effectively achieve the teaching goals, break through the difficulties, master the key points and achieve effective teaching in the classroom.

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Exploration of Teaching Mode of Ideological and Political Theory Course under WeChat Platform

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Abstract: Using WeChat platform to carry out network teaching work has become a new trend of information teaching reform. In order to deeply study the construction of ideological and political theory teaching mode under WeChat platform, project team members carry out a series of investigations. In view of some problems existing in the teaching mode of ideological and political theory, this paper puts forward some suggestions on perfecting campus network infrastructure, perfecting learning evaluation mechanism, reforming teaching mode, expanding teaching time and space, increasing training opportunities for teachers and students, and improving teachers' professional skills.
Keywords: WeChat; Ideological and Political Theory Course; Teaching Mode

1.PROBLEMS IN THE TEACHING MODE OF IDEOLOGICAL AND POLITICAL THEORY COURSE UNDER THE WECHAT PLATFORM

1.1 The lack of innovation in content design and the imperfect construction of curriculum system

In the course content setting, the ideological and political theory course network teaching content is basically the classroom teaching content carries on the simple video split, shortens the teaching time, does not carry on the combing to the curriculum knowledge point, the curriculum content does not accord with the reality deeply, the curriculum content is relatively boring, the teacher only explains some conceptual knowledge, the student's study enthusiasm is not high.

In the construction of curriculum system, one is the lack of professional network teaching curriculum production team (including curriculum production team, platform construction and maintenance team, etc.) and full-time network teaching assistant teachers (mainly responsible for the collection and summary of students' curriculum progress, students' learning situation and answering questions); Second, the lack of standardized curriculum evaluation system, different evaluation standards between different platforms, different assessment standards for students, which also leads to similar courses in credit certification conversion problems.

1.2 The enthusiasm of teachers of ideological and political courses to participate in network teaching is not high

The survey found that most of the online open courses popular with students are offered by well-known professors in well-known schools at home and abroad. They are well received because of their strong teaching staff or because of their personality charm, while most of the school teachers' courses are less well-known and have fewer students involved in learning. Therefore, some teachers worry that with the popularity of online open classes, and with a large amount of learning resources are readily available, students will prefer the courses offered by well-known professors, and their teaching status will be challenged. In addition, some teachers also worry that the lack of teacher supervision and face-to-face guidance in online open class learning will reduce the quality of teaching. Therefore, some teachers reject network teaching and participate in network teaching less.

1.3 The solidification of teaching mode and backward teaching methods

Although the online teaching of ideological and political theory course adopts the form of online teaching, it does not really reflect the characteristics of online teaching, and is more a continuation of traditional classroom teaching. In the teaching mode, it is still a one-way information dissemination mode that adheres to teachers' speaking and students' listening. Network assisted teaching is mainly used as a supplement to the learning of curriculum teaching content, rather than using problem inquiry and situational teaching as the starting point to arouse students' thinking. Through discussion and debate, students can explore problems themselves, find ways to solve problems, and firmly construct correct values.

1.4 Less training on information skills for teachers and students

The lack of attention of the school leads to the lack of relevant training. For the training of teachers, generally are mere formality, time period, shallow content, even some schools do not have effective training before teachers open courses, teachers want to operate and use the network learning platform to explore on their own, more time-consuming and laborious; For the training of students, generally only a class, teaching simple operational skills, more formalized. In addition to the lack of training for teachers and students, it is more important that the lack of professional technical personnel in the process of using the network teaching platform is responsible for maintaining the operation and solving practical problems. The school lacks the comprehensive consideration and the unified plan to the applicable object and scope of the network teaching platform, so that the learning resources built can not be fully utilized, and the use value is not high and the pertinence is not strong;The uneven construction of learning resources leads to the abundance of learning resources in some disciplines, while some disciplines are relatively scarce.

1.5 lack of effective technical support

Effective technical support is also a key factor restricting the development of network teaching of ideological and political theory courses in colleges and universities in China. One of the reasons for the slow development of network teaching in ideological and political theory courses in colleges and universities in China is the lack of a series of simple and easy-to-use supporting technologies, that is, the design, development and system maintenance techniques of a whole set of courses. At present, most colleges and universities do not have the technical support of curriculum design and development. The curriculum team of the school often only undertakes the task of curriculum content design, and even this part of the work due to the lack of professional technical support, resulting in the presentation and setting of content in the form of some shortcomings.

2. NEW REQUIREMENTS OF THE WECHAT PLATFORM FOR THE TEACHING MODE OF IDEOLOGICAL AND POLITICAL THEORY IN COLLEGES AND UNIVERSITIES

1. Requires a "teacher-centered" shift to a "student-centered "

The reform of the teaching mode of ideological and political courses should be "teacher-centered" to "student-centered ". The fixed teaching mode of "indoctrination" centered on teachers has changed, which is obviously not suitable for today's educational information age, does not accord with the "netizen status" of college students, and is not conducive to their all-round and free development. Therefore, under the WeChat platform, the teaching of ideological and political courses in colleges and universities must be "teacher-centered" to "student-centered ". Set up the educational idea of "student-oriented ", teachers achieve" students in the eyes "and" students in the heart ", respect, understand and care for students. Teachers should fully consider the personality development and actual needs of young college students, let them participate more in the classroom, discuss together, and feel their sense of existence in the classroom.

2. Requirements change from "passive learning" to "active learning" and "deep learning"

The micro era requires college students to change from "passive learning" to "active learning" and "deep learning "."Active learning" means that students, under the guidance of their own consciousness, are not affected by external factors, and consciously and voluntarily learn knowledge. On the basis of "active learning ", " deep learning" is to process the knowledge with critical thinking, excavate its potential value, and finally solve the problems encountered in life, which can undoubtedly better test the teaching effect of ideological and political courses. Because if students only pay attention to class, passively record the contents of the teacher's lecture and finish the homework assigned by the teacher after class, although they can master some knowledge, it is difficult to really understand, let alone solve practical problems. The transformation from passive learning to active learning and deep learning is beneficial to stimulate students' subjective initiative and improve their interest in

ideological and political courses, and actively participate in the study of ideological and political courses. Internalization in the mind, externalization in the line, and then form a correct world outlook, outlook on life and values.

3.THE PATH CHOICE OF THE INNOVATION OF THE TEACHING MODE OF IDEOLOGICAL AND POLITICAL THEORY COURSE IN COLLEGES AND UNIVERSITIES UNDER THE WECHAT PLATFORM

1．Improve Learning Evaluation Mechanism

In order to change the traditional evaluation system of students' curriculum learning, subdivide the evaluation criteria and establish a hierarchical learning evaluation system, the evaluation criteria can be combined qualitatively and quantitatively. For those parts that are clear and quantifiable, use quantitative methods, such as in the network teaching discussion area, set specific scores for the students to answer the questions, and give the corresponding scores according to the situation (including the teacher's score and the peer's score), the evaluation score is often averaged. For those parts that do not have a clear answer, qualitative methods can be adopted, especially for the performance of students in classroom special teaching, teachers can grade the quality of students' participation in learning.

2．Improve Campus Network Infrastructure

Schools should still attach great importance to the construction of network infrastructure. First of all, increase the investment in network funds, timely upgrading of network equipment, improve network speed, increase campus network coverage; Secondly, optimize the digital teaching environment, such as the construction of digital classroom, and equipped with interactive intelligent whiteboard, sensors, automatic tracking recording and broadcasting system, real-time editing and generation system, webcast system and other hardware and software; Finally, we should strengthen the construction of campus network security. In addition to optimizing the configuration of network systems, schools must also improve the standards of network monitoring and security.

3．Change Teaching Mode and Expand Teaching Time and Space

The traditional classroom teaching method is too single and solidified, which makes students bored easily. The ideological and political theory course under WeChat platform can guide, demonstrate and inspire students to explore learning in the form of special topic teaching on the basis of network teaching. For online teaching, in addition to making full use of online video resources, we should also make full use of other parts of online teaching, such as online communication areas, work areas and course forums, so as to realize students' autonomous learning and timely feedback of teaching information.

4.Increase the Taining Opportunities for Teachers and Students

Under the background of the new media era, in order to make efficient use of the network teaching platform of ideological and political courses, teachers and students must receive relevant training on the basic knowledge and

skills of the network teaching platform. Teachers should further improve their educational technical ability, and schools should provide training opportunities for teachers' educational technical ability, including modern educational technology theory, educational technology skills and information literacy. Moreover, this kind of network education training should be a long-term plan, which needs to be included in the long-term development strategy of the school, rather than a few training sessions concentrated in the short term. If you want to apply what you have learned to teaching activities, you can also flexibly use the online training model combined with the traditional training model, such as the establishment of online service platform. After training, teachers can also get follow-up support services, when encountered problems, can be resolved in time. In addition to the training of teachers, students should also carry out a certain network teaching platform operation technology training.

5. Upgrading Teachers' Professional Skills.

The teaching of WeChat platform puts forward higher requirements for teachers' comprehensive quality, so teachers need to have a higher sense of responsibility and crisis. As a relatively independent system, the online teaching part of WeChat platform teaching needs a professional course teaching team to be responsible for the development, construction and renewal of the course. At the same time, a group of professional teachers are responsible for answering questions online, and a group of professional and technical teachers are responsible for the daily system maintenance of the platform and student learning dynamic testing. Especially the construction of teaching content as the core of online teaching, it is necessary for teachers to define teaching objectives, set up curriculum content, record teaching video and organize teaching activities according to the characteristics of online teaching. Under the teaching mode of WeChat platform, teachers should not only be familiar with the teaching content of online teaching, but also design the teaching content and inquiry teaching method of classroom special topic according to the online teaching situation and the questions raised by students. And organize students to show and evaluate their results.

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The Contribution of Bauhaus Teaching System in Germany To the Development of Art and Design Education in The World

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Abstract: Bauhaus teaching system has laid a foundation for modern design education in the west, and has made outstanding contributions to the development of modern art and design in the world. Since its establishment, Bauhaus has contributed many excellent design and architecture talents to the world, which has a profound impact on the history of world art education. Influenced and inspired by Bauhaus education system, modern art design education has gradually implemented art education reform, which has promoted the development of modern art design education in the world. This paper expounds the concept, origin and development of Bauhaus, and thinks about the influence and Inspiration of Bauhaus on world art and design education, so as to enlighten the development of modern design education.
Key words: Bauhaus; Education System; Art and Design Education; Contribution

1.THE ORIGIN AND IDEA OF BAUHAUS

Bauhaus School of design was founded in Weimar, Germany in 1919. It was the first design institute in the world at that time. Its original intention was to promote the development of modern design and design education. During the 14 years from 1919 to 1933, it trained many excellent and top talents in the field of world design. Until today, the teaching philosophy of Bauhaus college still has an important impact on the development of modern design.

(1) The origin of Bauhaus School of design

At the beginning of the 20th century, the industrial revolution had not yet begun, and people did not pay attention to production design. After the industrial revolution began, machines replaced labor, and the demand for product design increased gradually. However, it was limited to the so-called designers at that time who emphasized the aesthetic feeling of product design, which led to the increasingly prominent contradiction between production and design. In order to completely solve the fierce contradiction between art and technology at that time, it was founded in Weimar, Germany, in April 1919 with the famous architect Walter Gropius and a group of outstanding architects and artists at that time.

(2) The tenet and idea of Bauhaus School of design

The aim of Bauhaus design institute is to cultivate the builders of the future society. Bauhaus design concept emphasizes the unity of art and technology, and thinks that the use value and artistic value of products produced in the industrial era have a certain relationship, and the two can coexist. Bauhaus college creatively put forward that "excellent products must be the perfect combination of art design and craft production". [1] The creative concept has milestone significance for the development of modern design.

(3) Design teaching ideas of Bauhaus teaching system

From its establishment in 1919 to its closure in 1933, Bauhaus Institute of design has undergone three teaching reforms in the past 14 years. From the perspective of teaching effect, the second teaching method reform effect is significant. Bauhaus changed the teaching method from "double track system" to the integration of design and production. The teaching of students is not only limited in the theoretical level, but also the key point of teaching. From theory learning to application to practice, then to the research and Reflection on the results of practice. In this way, from theory to practice, the students' theoretical knowledge is more firmly grasped, and the practical ability is also cultivated. This teaching method is also applicable in modern design education. In Bauhaus Weimar period and dixor period, more attention was paid to the cultivation of students' sense of social responsibility, which was of great significance to students' self-learning and self-worth reflection, which marked the maturity of Bauhaus teaching system.

Bauhaus emphasizes the combination of art and technology, and teaching activities are carried out in the workshop. In such a teaching environment, the learning process of students is similar to that of apprentices. The courses of apprentice, technician and young master are set up, and the two tutors of studio and form teach together to achieve the effect of unity of art and technology. The relationship between teachers and students tends to be more equal colleagues. From the design ideas to practical ability, the phased teaching mode plays an important and positive role in students' practical ability and thinking development.

2.THE INFLUENCE OF BAUHAUS TEACHING SYSTEM ON THE DEVELOPMENT OF ART AND DESIGN EDUCATION IN THE WORLD

The contribution of Bauhaus teaching system to modern art design is mainly reflected in the education system and teaching methods. Bauhaus concept, Bauhaus system and Bauhaus teaching have become the reference for many art and design colleges in the world. The contribution of Bauhaus teaching system to the world art design education and his own limitations have laid the overall framework of modern art design teaching.

(1) Bauhaus emphasizes the cultivation of students'

comprehensive analysis ability

Compared with traditional art and art colleges, Bauhaus education system pays more attention to the cultivation of students' comprehensive analysis ability. In the process of appreciation of famous works, the students are guided to analyze and think about the composition, color, shape and other factors of famous works, so as to avoid blind personal worship of masters and masters. Bauhaus concept accurately grasps the law of students' visual art, which has a far-reaching influence in the modern world art and design education.

(2) Bauhaus's influence on Curriculum Reform

Although Bauhaus School of design has not been running for a long time, its concept still has a great impact on the reform of modern design art education curriculum, especially the flexibility and practicability of teaching, which is a very advanced teaching concept at that time and now. In the sketch teaching, it is different from the traditional teaching methods at that time. The composition design and structure sketch are added into the sketch teaching as the basic course of design learning, which becomes the beginning of advocating the integration of theory with practice, the cultivation of practical ability and the cultivation of innovation ability. The teaching of composition design has broken the traditional mode of sketching in the past, from two-dimensional to three-dimensional and then to multi-dimensional, cultivating students' observation ability and analysis ability, cultivating students' perception and innovation ability, and laying the basic rules for the composition of modern design.

(3) Bauhaus teaching system pays more attention to the guidance of practical teaching

The unity of art and technology was Bauhaus's design concept at that time, which not only solved the contradiction between production and design at that time, but also had a far-reaching impact on modern art and design education in the world. The proposal of practical teaching mode has changed the limitations of traditional teaching mode. Students have the opportunity to present design theory, design concept and design results in the form of practice, which not only exercises students' practical ability, but also proves the design theory and design ideas, which helps students find the most perfect combination of Art and technology from repeated practice. Practice teaching also plays an important role in modern art and design education in the world. With the development of society, the demand for talents in the market tends to be more practical. The previous emphasis on education is gradually changing to the emphasis on practice and ability. In the face of the actual demand of the market for talents, the cultivation of students' practical ability by various design schools and architectural schools has become a key project. Through practice, students can have a more solid grasp of theoretical knowledge and have skilled operation Ability, the talents trained in this way have extremely high comprehensive quality. Bauhaus advocates the development of art teaching system in the world.

3. INSPIRATION OF BAUHAUS TEACHING

SYSTEM TO THE DEVELOPMENT OF ART AND DESIGN EDUCATION IN THE WORLD

(1) The change of cognitive mode

American scholars believe that the process of students' learning knowledge should be a process of independent thinking, self-feeling and independent creation, not passive indoctrination. Bauhaus teaching system combines theory teaching and practice teaching, strengthens the transition of students from theory to practice, studies and analyzes the practice results through reflection after practice, so that students learn knowledge is not the traditional information transmission and indoctrination, but the cognition of new knowledge, new theory and new things. At present, the teaching of modern art design in the world also follows the teaching philosophy of Bauhaus. Through the cultivation of students' cognitive ability, perception ability and analysis ability, students' art design skills and attainments are improved.

(2) Situational teaching methods

In the traditional classroom teaching mode, teachers pass the textbook knowledge to the students by the way of teaching. The way of up-down transmission makes the students' acquisition process of knowledge too passive. It is good for the conventional theoretical education, but for the relatively unique courses such as design, art and art, such teaching method is not very effective. Bauhaus teaching system organizes students to walk into workshops and work together to cultivate the spirit of students' active exploration in the actual situation. Bauhaus teaching system advocates choosing different teaching methods according to different classroom situations, which is conducive to creating and maintaining a good atmosphere for learning. It has a certain inspiration to the application of the world art design teaching situation mode.

(3) Diversified basic education

Bauhaus education system advocates that teachers can design curriculum based on their own design experience. For example, in the teaching of composition design, the teaching contents are classified, and students need to carry out a series of exercises, such as suspension exercises, feeling of space volume, balance between different materials, etc. students have a more profound experience in the whole teaching process, which is more conducive to the development of design thinking. Through the use of teaching methods and methods to improve students' cognitive ability, cognitive perspective, Bauhaus education system has a certain role in promoting and enlightening the development of world art and design education.

4. CONCLUSION

With the rapid development of society, design art has been closely related to people's life. Bauhaus education system has a great influence on the world art and design education, but only from the perspective of objective rationality to examine its development law, and to seek the factors that make Bauhaus education system successful. It is suitable for the advanced people to learn from the advanced ideas and go out of the way of objective development.

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Study on Speeding up the Development of Zhoukou port-adjacent Economy

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Abstract: In recent years, the economy near the port of Zhoukou has developed rapidly, but there is still a big gap between it and the port economy of the port cities along the Yangtze River. To realize the goal of the development of high-end industry in the port-side economy of Zhoukou, it is necessary to combine its advantages, develop its strengths and avoid its weaknesses, take a road of developing a port-adjacent economy with its characteristics.
Keywords: Zhoukou; Port Economy; Research

I. MAJOR ADVANTAGES OF ZHOUKOU IN DEVELOPING ITS HARBOUR-FRONT ECONOMY

Zhoukou, as the only provincial municipality directly under the central government in Henan Province with access to the river and the sea, has put forward the development strategy of " developing the port-adjacent economy, building the central plains port city, and building a Central Plains Economic Zone port to the sea" the high-end industry of port-adjacent economy is regarded as an important direction of urban economic development.

Zhoukou is close to the Beijing–Guangzhou Railway artery in the West, the narrow-gauge xu-dan railway in the north runs east-west, and the Luofu railway in the south. The nano expressway cuts east to west and into the Beijing–Hong Kong–Macau Expressway, another major artery running G45 Daqing–Guangzhou Expressway North to south, and the Shang Zhou Expressway. The second phase of the expansion project of Liuwan port in Ying River has been completed, the Shenqiu County lock has been completed, the Zhengbu high-speed railway has been put into operation, and the Ningluo high-speed railway project has been incorporated into the national plan. The Zhoukou Port project has been completed. It will sail from Zhoukou to Nanjing and Shanghai via the Huai River and Yangtze rivers. Zhoukou airport construction project covers a total area of 15,000 mu, after the first phase of construction successfully at least five general aviation enterprises to meet 30 or more small aircraft at the same time parking, ground flight services, and maintenance functions. General Aviation Service stations and general aviation industrial bases will be built in the second and third phases, and feeder airlines will be opened.

2. CURRENT SITUATION OF ECONOMIC DEVELOPMENT OF ZHOUKOU PORT

On the one hand, Zhoukou Port area closely focuses on the port industries such as warehousing and logistics and equipment manufacturing, and has attracted many large enterprises with high correlation degree to the port industry to invest in the port area, and reached the cooperation intention. A large number of port-related industrial projects have been signed to settle in the port area, which has injected new driving force into the port economic development. At present, the main network of Zhoukou Port has been interconnected, and zhoukou's shipping will develop in coordination with the road, railway, air, postal and other transportation modes, to develop Zhoukou's inland hinterland, which never borders or relies on the sea, into a regional transportation hub city. On the other hand, the Zhoukou shipping business is thriving. In August 2018, Zhoukou Port & Waterway Group was officially inaugurated, marking a new historical period for the development of Zhoukou Port & Waterway. To carry out business better, zhoukou central port is equipped with a container door machine capable of loading and unloading 20 standard containers per hour, and a container front crane capable of stacking and placing 25 standard containers per hour, and other large equipment. At present, Zhoukou central port has formed a business operation pattern with grain, coal, and building materials as the main turnover materials, supplemented by bulk transportation, chemical industry, wood furniture, ore, and so on.

3. PROBLEMS EXISTING IN THE DEVELOPMENT OF ZHOUKOU PORT-ADJACENT ECONOMY

First of all, zhoukou infrastructure construction is not perfect, the transportation system is not perfect. At present, zhoukou port lacks the standard dangerous chemical wharf, so dangerous chemical transportation can only choose other transportation channels, which reduces the utilization efficiency of Zhoukou port. Besides, the comprehensive service capacity and level of the port are still relatively low, and the operation and organization efficiency and informatization degree need to be improved. Although the traffic conditions at zhoukou have been greatly improved, many goods need to go through lower-grade roads after arriving at the dock, so the traffic condition is poor and the logistics cost is high.

Next, the area of the hinterland of the harbor economy is lesser. Although the traffic system of Zhoukou is relatively complete, the extension radius of the traffic network is small and there is no deep traffic network, so it is difficult to expand the indirect port economic hinterland of relatively developed areas. Although developed expressways make Zhoukou more closely connected with the economy of various regions and extend the radiation radius of zhoukou port relatively, these regions do not have exclusive and unique advantages for Zhoukou port.

Thirdly, at present, the construction of the Zhoukou port area is still mainly supported by government finance and lacks effective financing channels. Because the development of many areas of Zhoukou port is still under

construction and in the planning stage, a large amount of capital needs to be invested, and it is far from enough to rely on the financial support of local governments or the investment of state-owned capital. Although several shipping companies and trade manufacturers to the Zhoukou port area to discuss matters of cooperation, still cannot bear the huge construction capital expenditure. Besides, there is a serious shortage of high-quality shipping technology talents, foreign trade talents, and port-neighboring industrial talents, etc. The shortage of talents cannot support the sustainable development of Zhoukou's Port-neighboring economy.

Finally, the supporting role of the zhoukou industrial economies is not strong, and the development speed of the industrial cluster is relatively slow. In terms of the current industrial development in Zhoukou, the number of large enterprises is too small and the scale is small, and the supporting and driving role of the industry is not strong, while the small and medium-sized enterprises have a low degree of specialization and weak ability to support and coordination, and have not formed a coordinated and supporting industrial system with the surrounding areas. From the perspective of enterprises entering the region, there are still few enterprises that can truly form the upstream and downstream industrial chain, the industrial chain is still short, the organic connection between enterprises is not enough, and the development speed of the industrial cluster is still relatively slow.

4. COUNTERMEASURES AND SUGGESTIONS FOR THE DEVELOPMENT OF ZHOUKOU PORT-ADJACENT ECONOMY

First of all, Zhoukou municipal government should strengthen policy support, strengthen policy support for port-neighboring industries, actively support finance, and give preferential tax treatment. We will establish a strong administrative management system and a high-quality and efficient government service system, promote law-based administration in an all-round way, improve work efficiency and service level, and make ports more attractive and efficient for various factors of production.

Secondly, we should improve infrastructure construction and cultivate and develop port-neighboring industries. IN terms of industry, should be developed to port as the center of industry and modern service industries, such as speed up the growing food processing, electronic information industry and the development of the Internet financial, service outsourcing, cold chain logistics, cross-border emerging services such as electricity, perfect the intellectual property rights service center, accounting firms and other intermediary service system and so on.

Thirdly, in terms of opening to the outside world, it is necessary to enhance the functions of open ports, deepen domestic cooperation in opening up and strengthen cooperation in counterpart support. We will actively develop sea-rail combined transport, promote a seamless connection between inland waterway transport and coastal ports, and enable ships leaving Zhoukou port to reach big cities through the inland waterway. Relying on the water transport advantages, it will more effectively integrate into the water transport port and terminal system, and further deepen the docking cooperation with relevant enterprises. Expand port hinterland market actively, only grasp the market resources of the hinterland, can there be more transport and transit goods and trade and investment opportunities, to expand the market capacity.

Finally, we need to increase financing and implement the strategy of scientific and technological innovation. In terms of financing, preferential policies should be adopted to broaden investment channels and attract more private capital into economic construction. In terms of bank credit, we should strengthen credit support and actively guide financial institutions to increase credit support for industrial projects. Extensive precision investment, and large enterprises with a high degree of association with the port industry to invest, build, and operate in the port area. In terms of science and technology, we should continue to expand innovation fields, actively cultivate and strengthen innovation subjects, and vigorously strengthen the construction of innovation platforms.

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An Effective Model of English Teaching in Higher Vocational Colleges -- Student-centered Classroom Teaching

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Abstract: As a significant course in higher vocational colleges, college English teaching has been experiencing self-reform and development in recent years. According to the requirements of the new curriculum reform, the present situation of English teaching in higher vocational colleges and the new requirements of the society for English of technical talented persons, this paper makes a comprehensive analysis of some problems existing in English teaching at the present stage, probes into some changes that should be made in the corresponding classroom teaching mode, and proposes some relevant strategies.

Key Words: Higher Vocational Education; College English Teaching, Effective Model; Student-Centered Classroom Teaching

1. CURRENT SITUATION AND ANALYSIS OF ENGLISH EDUCATION IN HIGHER VOCATIONAL EDUCATION

English is becoming more and more prominent in the 21st century. English is more than just a language, and it is also an important bridge of communication and cooperation among countries. English has become one of the most basic skills, which is the premise for us to go out. At present, English comprehensive ability and application ability of vocational college students are relatively weak, and there are some problems in English teaching mode. In order to respond to the call of the new curriculum reform and to make the students more connected with the society, we are constantly changing the teaching methods and exploring better and effective English teaching modes in practical English teaching. We adhere to the student-centered concept, stimulate students' initiative, and cultivate practical talents with comprehensive language ability for our country.

1.1 The goal of higher vocational education is to cultivate skilled talents, so it pays more attention to the education of technical theoretical knowledge. English is not highly valued in higher vocational schools. It pays more attention to the teaching of professional theory, but neglects the practical teaching of English. Most of the studying is just to cope with the examination-oriented education, but ignores the practicality of English teaching and the improvement of students' English comprehensive ability. Higher vocational colleges have lower requirements for students' English proficiency, not to mention the requirements for English certificates.

1.2 In recent years, with the rapid development of national higher education, many colleges and universities are also constantly exploring diversified recruitment channels. Different channels have different requirements and evaluation standards for students which cause differences of learning level and knowledge base among the higher vocational students. The level of students is different and so is the learning acceptance of the same knowledge. It is difficult for teachers to achieve the same level of teaching, and therefore the teaching effect is also difficult to reflect.

1.3 The shortage of teachers and the shortage of "double-qualified" teachers are common problems in higher vocational colleges. With the growing number of students in higher vocational colleges, the pressure on teaching is also increasing. The intensity of teaching makes it more difficult for teachers to have spare time to carry out self-professional improvement. Based on the relevant data, most of the teachers in higher vocational colleges in China have less than 5 years of teaching experience. The teacher group as a whole is younger and lacks teaching experience. In view of the lack of teaching experience, teaching ability can not be timely improved so it is easy to affect the overall quality of teaching and a vicious circle has thus been created.

1.4 The teaching methods of English teachers in higher vocational colleges are unitary. In the classroom, teachers' lecture takes up most of the time, resulting in the lack of interests of students. The classroom atmosphere is not active, and the students' participation enthusiasm is low. All these conditions make English teaching more difficult. Many students in higher vocational colleges do not have a solid foundation in English, and it is difficult to absorb the contents of some teaching materials. However, the teachers' teaching method lacks innovation and flexibility, the attractive contents are also relatively limited, and teaching objectives are not well targeted, which will greatly reduce the teaching effects. As time passes, it is natural for students to give up English and become tired of learning.

1.5 Higher vocational colleges do not have high requirements for students' English proficiency, so many teaching materials are lack of new ideas, the update of knowledge in textbooks is very slow and too much emphasis is laid on the grasp of theoretical knowledge. Meanwhile, the connection with reality to improve students' practical application ability is ignored. The content of the textbook is old and the curriculum is not reasonable which focuses on the the content of the exam. In higher vocational colleges, the curriculum of English class is also obviously insufficient, which leads to the shortage of opportunities for actual exercise. There is not

enough emphasis on English from all aspects and it is difficult to improve students' English level.

2. THE INFLUENCE OF MASTERING ENGLISH ON HIGHER VOCATIONAL STUDENTS

2.1 With the development of economic globalization, English has long been a bridge connecting the whole industry with the world. The practical application ability of English is a stepping stone for higher vocational college students after graduation. A good command of English will not only improve our comprehensive competence in the workplace, but also provide us with more opportunities for development. Besides, it could open up a whole new world for us.

2.2 The competition for a job is more intense nowadays. Rigid requirements on English proficiency are needed not only in foreign-funded enterprises but also in more and more domestic enterprises. Many enterprises are also constantly expanding their international business, and some large enterprises need to import and purchase specialized production technology and equipment from abroad, which requires staff to have a good command of verbal communicative competence, abilities to read and write letters in English and professional translation skills. Therefore, we must attach importance to vocational college students' English learning.

3. HIGHER VOCATIONAL ENGLISH TEACHING SHOULD BE TRANSFORMED INTO STUDENT-CENTERED CLASSROOM TEACHING

3.1 More methods should be taken to improve students' learning interest and autonomous learning. It is the first step to acquire knowledge, and interest is the best teacher. First of all, it is essential to stimulate students' interest in English. Only with the enthusiasm of learning can students invest time and energy in learning English. So after a period of time, they can see the effect of learning. In the course of teaching different subjects, students' active learning is the main way to acquire knowledge. English, as a language, needs more active practice. In the process of teaching, students should be aware of the influence and significance of English to their later life and career. Only when students themselves realize the importance of English to their life and career will they take the initiative to learn and trigger their enthusiasm for learning. Secondly, more attention should be paid to the cultivation of autonomous learning. In the course of classroom teaching, the teacher, as a guide, should try to take a variety of classroom activities to achieve the purpose of activating the atmosphere and let the students participate in the class as much as possible by asking some open-ended questions to have the students exchange and discuss with each other. In this continuous participation, students can find the fun of learning, have more active desires to learn, and produce more internal motivation. Thus their learning enthusiasm will be endless, and their interest and active learning can complement each other. Finally, teachers should guide students to work together to set clear learning goals. With a goal, there is a direction, coupled with interest and self-driving. In this way, the learning effects can be as many as twice with half of the effort.

3.2 It is useful to set up a good teaching situation. The English level of most vocational college students is relatively weak, which leads to the low participation in class. Teachers should prepare classes according to the actual situation of students, improve the fun of the class, so that all students can take part in the teaching activities in class. In the course of the class, the teaching forms should be further enriched. More simulated teaching and situational teaching should be adopted, which let students speak more and practice more. The teacher should be an organizer as well as a guide in the classroom, and let the students be the main characters of the class and be the real masters of the classroom. Students can feel the charm of English and the fun of learning in the actual participation. In this information age, in addition to teaching materials, we can also make use of multimedia teaching methods, innovate teaching models, explore learning methods that students prefer, and enable students to learn knowledge in a more comfortable and enjoyable environment, which are helpful to enhance students' enthusiasm for learning.

3.3 Measures are taken to improve the comprehensive and practical ability of English. Higher vocational colleges pay attention to the training of students' skills. Therefore, in the teaching process besides the theoretical knowledge, more attention should be paid to cultivation of practical English in order to improve comprehensive language ability. In fact, English is a real practical subject, students must rely on their own to participate in a large number of practical exercises. In order to use English as a communication tool, we should comprehensively develop and improve students' English ability, improve the traditional and backward teaching methods, come up with a more innovative approach and arrange teaching courses more scientifically and reasonably, so that students can not only successfully pass the English exam, but also use English proficiently in daily life. So, in addition to the knowledge in the textbook, we should also start from the reality and connect the classroom with the real life, such as simulating more dialogues that may appear in the future life and work, and writing some work emails or documents. It is highly recommended to listen to and watch more practical foreign TV programs.

4. CONCLUSION

To sum up, mastering English as a useful communicative tool has great influence on the life and future of vocational college students. Students will face the serious employment problem after graduation, so during our school period, teachers should attach importance to students' English teaching. Teachers should keep learning, improve their teaching ability, accumulate more teaching experience and improve the teaching effect. And only in this way can students' English ability be improved effectively and lay a good foundation for their future work and study. At this stage, we should adhere to the principle of the liberal education concept, focus on the student-centered classroom format, make students become the real masters of learning and innovate the classroom teaching methods. Through adopting a series of teaching mode reform, we can let students really like English, make students learn English well and cultivate more excellent

talents for the society.

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Brief Analysis on Encouraging Teaching Method and Its Implementation

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Abstract: Encouraging teaching method is the most popular teaching method in modern teaching, especially in primary and secondary schools. It has a long history of use, is respected by many educators and educational psychologists at home and abroad, and the teaching effect is positive and effective. It is one of the commonly used teaching methods. This paper summarizes the connotation of encouraging teaching method, the basic principles of application and the matters needing attention in the course of teaching.
Key Words: Encouragement of pedagogy; Application

1. CONNOTATION OF ENCOURAGING TEACHING METHODS

Encouraging teaching method is one of the most commonly used teaching methods in the teaching process, especially in the teaching process of primary and secondary schools, which has a very significant effect on improving students' enthusiasm for learning and building up self-confidence. However, the teaching method which is often used in the history of our country is precisely the opposite of encouraging the teaching method, and the usual teaching idea is that strict teachers are highly educated. Therefore, there is little literature on encouraging teaching methods in China. In the process of teaching, most teachers directly understand the encouraging teaching method as praise and praise, and use it simply and roughly, which makes it difficult to play the great positive role of encouraging teaching method effectively, and even to the opposite effect. This paper summarizes the connotation of encouraging teaching method, the basic principles of application and the matters needing attention in the implementation of teaching process, hoping to help the actual teaching process.

Encouraging teaching method is a kind of teaching method which fully embodies the students' main position. It conforms to the students' psychological characteristics. By giving students encouragement, praise, affirmation, praise, reward and so on in the teaching process, it can stimulate students' enthusiasm for learning, cultivate students' interest in learning, help students improve their self-confidence, work harder for their own development and progress, and turn passivity into initiative.

2 BASIC PRINCIPLES OF ENCOURAGING TEACHING METHODS

2.1 Pay attention to student differences and make specific analysis

Everyone is unique, there are all kinds of differences between each other, but the difference is significant, teachers in the teaching process can not simply apply the same method of encouragement to different students. It is necessary to see that there are not only gender differences, age differences, family background differences, friends circle differences and even different class atmosphere differences between students. Because the difference exists objectively, teachers can not be subjective and arbitrary in the teaching process, can not take it for granted or according to their own habits and practices to different students mechanical praise. Otherwise, it will lose the meaning of encouragement, fail to achieve the purpose of encouragement, and even cause students' antipathy, resulting in the decline of learning motivation, lack of interest and other negative consequences.

2.2 Encouragement should be proportionate

When encouraging students, we should grasp the degree and adhere to the principle of moderation. Chen Heqin, an outstanding contemporary child education expert, believes that in teaching methods, encouraging and punishing education is one of them, and whether it can play a positive role lies in the grasp of "degree ". He believes that positive encouragement has more advantages than negative stimulation, but can not abuse encouragement, otherwise it will have a negative impact [1]. We should not easily tolerate students' mistakes, turn a blind eye to them, and not exaggerate their advantages. Teachers' encouragement should be appropriate, moderate and timely[2]. Such requirements are very high, and teachers will inevitably increase their energy and time input, but it will eventually be beneficial to teaching so that these inputs are necessary and worthwhile. The most important thing is to benefit students' learning and teachers' work.

It includes two aspects: First, students should correct mistakes in time. Although we advocate encouraging teaching methods, this does not mean to ignore students' mistakes. The use of encouraging teaching method to arouse students' enthusiasm and initiative in learning, stimulate students' interest in learning, and even cultivate students' self-confidence, in the final analysis, is to make students become talented, realize their own development, and realize their own value. However, if excessive tolerance, understanding encouragement as rejection of criticism, laissez-faire of wrong behavior, then it will violate our initial mind. Therefore, it should be emphasized that the encouraging teaching method discussed in this paper is only relative to corporal punishment, and the mistakes of students should be corrected in time, but when correcting errors, we should have confidence in the students. For students repentance attitude, error correction behavior should be encouraged. As the saying goes, knowing mistakes can improve. Second, praise should pay attention to the substance of the words, convincing. If the praise of a backward student is too exaggerated, it may cause strong dissatisfaction of the

advanced student, produce aversion, even affect the credibility and reliability of the teacher, and is not conducive to the closer relationship between teachers and students. In addition, excessive encouragement and praise will make students feel less treasured and seem to be encouraged and nothing remarkable, which will also make encouragement meaningless. Encourage teaching method can not be used too frequently, only let students feel that encouragement is not easy, is to rely on efforts to obtain, so that learning will be more treasured, not willing to lag behind, more motivation to work hard.

2.3 Encouragement for diversity and flexibility

Many teachers' encouragement to students is often stylized, always so simple a few words, at the beginning, there is a certain effect, as the number of times used, chewing wax, making students feel bored, It does n' t work as encouragement and praise at all.

There are a variety of ways to encourage, both material and spiritual, verbal, or operational, and so on. A teacher's positive eyes are encouragement, a knowing smile is encouragement, a compliment is encouragement, a hook is encouragement, and a small gift is encouragement. In short, the methods of encouragement are diverse, teachers should be flexible to use.

2.4 Encouragement from the Heart

American psychologist Rosenthal's famous experiment proves that if teacher loves the students and has good expectations for the students, the students will work harder and hope to be encouraged by the teachers and live up to the expectations of the teachers[3]. Teachers often give students affirmation, encouragement and praise, then students, after receiving positive encouragement, will arouse students to rely on and respect teachers more sincerely, and produce positive confidence and determination. Such a virtuous circle will produce the desired effect of teachers, which is the Pygmalion effect. Teachers praise students when the attitude to sincere enthusiasm, from the heart. People have the nature of true, evil and false, only sincere things, will be accepted. Praise is the same, the teacher only with a sincere attitude to praise, can arouse students' sense of sincerity, affinity, warmth, trust and friendship, happy to accept praise [4].

Teachers should not encourage students just to encourage them, which requires teachers to pay more attention to students, understand students. Especially when students answer questions, teachers should listen carefully, and make targeted praise for the bright spots of students. Don't always use a "good answer" to perfunctory. If there's more perfunctory praise, students will inevitably be dissatisfied, lack of motivation, loss of interest. Everyone has their own bright spot, teachers should be good at observation, good at discovery, help students realize their strengths and advantages. This will not only enhance students' self-confidence, stimulate learning motivation, but also promote the overall development of students.

3 POINTS FOR ATTENTION IN THE IMPLEMENTATION OF ENCOURAGING TEACHING METHODS

3.1 Teachers should be good at discovering students' bright spots

Teachers can not perfunctory in the use of encouraging teaching methods, so this requires teachers to carefully observe students and find out the bright spots on each student; teachers listen attentively to students' speeches and understand their original opinions; carefully record students' achievements and praise students' progress.

During the teaching process, teachers should use their unique vision to tap the advantages of each student, capture the bright spots on the students, be good at finding out the extraordinary from the ordinary, and create a warm environment for the students to encourage each other[5].

3.2 Teachers should grasp the degree, not only the number but also the degree

Encouraging education to give full play to the best educational effect must pay attention to grasp the "degree ", too much, too often, the degree of encouragement not only can not play a role, but also may be counterproductive [6]. Encouraging teaching methods has many advantages and is convenient to use, but teachers should grasp the frequency of use, remember not to praise as a mantra, otherwise it will make students feel a little perfunctory and insincere, or the teacher's requirements are too low. Students may lose their original value without a sense of achievement. In addition, teachers should pay attention to their own expression when encouraging students, not to exaggerate, otherwise it will not only make the praised people feel that the teacher's appreciation is a bit deliberate and insincere, but also make other students feel disgusted.

3.3 Teachers should pay attention to the time limit for encouraging students

Teachers encourage praise to students, although not too often, but this does not mean that teachers should accumulate praise for students, especially for those worthy of public praise, teachers must be timely praise, Give him encouragement when the student expects it most, much better than encouragement after the student's excitement and pride fade. When students really spend more time and energy to make a post, if they do not get the teacher's timely encouragement, not only will not produce the joy of success, stimulate learning motivation, but also may eliminate the enthusiasm of students to learn, Become negative perfunctory.

3.4 Teachers should pay more attention to value guidance and spiritual encouragement

In addition to paying attention to not being too single, teachers should pay attention to guiding students to set up correct value orientation. Especially for primary and middle school students, they are in the critical period of the formation of values. Teachers' give priority to spiritual encouragement and material encouragement, guide them to set up correct three views, and prevent students from pursuing material too much. Avoid misleading its value standards. Therefore, when encouraging students, we should pay attention to the selection of methods, not only to stimulate students' learning motivation, but also to play the role of correct values leading and edifying.

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Opportunities and Challenges of Chorus in Primary and Secondary Education

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Abstract: With the rapid development of education, as the largest number of primary and secondary schools, its music education has gradually been widely valued; among them, the gifted only account for a small proportion. How to coordinate, so that all people who like singing can experience in the way of "first person", which is worth pondering over, and popularizing chorus is the key to solve this problem Where the key is. At the same time, to measure the cultural and living standards of a country or a city, we can not only see economic growth, but also improve the quality of national music. In primary and secondary school, it is the fastest time for people to accept knowledge and new things, and it is also the best Golden Age for education. School education bears the responsibility of cultivating humanistic quality and aesthetic quality. In recent years, with the development of education, chorus has become more and more important It is accepted by the public, so how to grasp the opportunities and challenges in primary and secondary school chorus education is worth pondering, so that more people can feel the charm of chorus, at the same time, it can also integrate Chinese culture.

Key words: Chorus; Primary and Secondary Education; Opportunities and Challenges

1. THE DEVELOPMENT STATUS AND EXISTING PROBLEMS OF CHORUS IN PRIMARY AND SECONDARY SCHOOL TEACHING

The form of chorus originated in Europe. At the earliest, in ancient Greece and ancient Rome, hymns appeared, which were sung by several people together. The form of lyre accompanied by baroque, classical, romantic and mainly chamber music gradually developed to this day. However, the earliest Group singing in China appeared in the Xia, Shang and Zhou Dynasties, mainly in sacrificial activities, and now it has diversified forms. However, both at home and abroad, there is no doubt that choral music is the art form with the lowest threshold, as long as not all the notes can participate in, and this is the best way for non-music professionals to personally experience. But the status quo is backward and uneven, but it is difficult to change; As a young generation of primary and secondary schools, to improve their choral literacy, choral education and teaching reform is an urgent need to pay attention to a problem. It can not only cultivate students' personal comprehensive quality, integrate traditional elements, but also stimulate the patriotism of the next generation. The analysis of choral education in primary and secondary school related issues, we should go to ponder.

With the rapid development of China's education, there are more and more schools and educational units. As the primary and middle schools with the largest base, the music quality education is gradually paid more attention to. Which really has a gift for singing accounts for only a small proportion, but the person who love singing far more than the former, how to coordinate and balance, let all the people who like singing can be intuitive experience which in the form of "first person" is worth our music education workers to ponder, and developing and popularizing chorus is the key to solve this problem.

Measure of a country, city culture and living standard, can not only see the economic growth, the proportion of college students, is also important to improve the quality of the national music. Music school quality can reflect the national music quality, as 6 years old - 18 years of age, period of primary and secondary schools, is the person to accept knowledge and new things in life is the fastest and the best education of the golden age, school education undertakes the important task of cultivating moral quality and aesthetic quality. Leading the future generation to establish a correct world outlook and values.

The educational model is rigid. This is a deep-seated problem, involving many factors, and exam-oriented education is one of the biggest reasons. In order to study subjects, ignoring or even giving up the music they like can improve the psychological edge of the subject. Many students do not know staff, the teacher will have to teach singing sentence by sentence. Trying to get students to master the skills of reading music, but too few courses leave teachers struggling. In this case, needless to say chorus, monophonic melodies are not easy to sing, while multi-vocal chorals are difficult to achieve. In recent years, with the development of quality-oriented education, this situation has been alleviated, but from a broad perspective, there is not much improvement and improvement.

1.1 The popularity of chorus in primary and secondary schools

With the improvement of economic level and the increase of financial input, music quality education is gradually popularized, and chorus education in primary and secondary schools is developing rapidly. However, there is still a long way to go between the level of choral teaching in primary and secondary schools and that in foreign countries. Did not reflect the music curriculum standard in our country, pay attention to the section of the student's chorus curriculum and teaching put forward the following basic requirements, such as, first-year students can use the natural voice, accurate rhythm and intonation to express a solo or participate in singing, sing grade students to actively participate in, singing songs, and command, check and expression can correctly reflect the high school students to actively participate in chorus, however, alone, can listen to the voice in singing and maintain harmony and balance between parts, rehearsing

chorus song, without the specific requirements of the development of the chorus skills.

1.2 Deficiencies in chorus teaching in primary and secondary schools

There are many deficiencies in chorus education in most primary and secondary schools, and only a few schools are in the forefront of chorus development. Due to teach

The relatively chaotic education syllabus, coupled with the staff's understanding of chords and the lack of a standard training model, resulted in most people not knowing staff. In other developed countries, the concept of collectivism, rather than individualism, has been regulated in the past century by the use of all employees trained in multi-voice from the age of six. China because of promotional materials and "promotion of profits", so far there is no standard, collective thinking of young people conducive to music teaching materials. These problems have caused many "basic" gaps in middle school chorus teaching.

The content of chorus teaching is too simple, which makes it difficult for students to arouse their interest in learning. Its interest and creativity need to be improved.

The unsatisfactory quality of choral related courses is related to the limitation of choral level and teaching method of teachers themselves. At the same time, the music literacy of primary and secondary school students in China is generally not high, and the situation in frontier areas with slightly developed economy has improved and become better and better, which is also greatly related to the material basis of different regions at present.

2. OPPORTUNITIES AND CHALLENGES OF CHORUS IN PRIMARY AND SECONDARY SCHOOL TEACHING

First of all, we should increase funding and integrate teaching resources. Funding is the bottleneck of primary and secondary education. Under the reform of new education, chorus should adapt to the new situation of quality education in primary and secondary schools, increase capital input, and properly invest capital to make "money, can use money". According to the characteristics of Chinese history, it is a useful test to optimize the allocation of choral teaching resources by classifying various types of choral repertoire and establishing choirs for school students and teachers. The introduction of modern and advanced information technology can more effectively cultivate students' sense of identity and enthusiasm for singing, so that the development of choral education can achieve multiplier effect.

The second is to update the existing choral teaching concept and system. In chorus teaching in primary and secondary schools, the leading role of the conductor has always been mistaken for the main role, and the phenomenon of "full of personal ideas" has led to the suppression of students' initiative and enthusiasm, and the dull classroom teaching has become indifferent atmosphere. Conductors teach in chorus skills, sometimes neglecting the introduction and reference of relevant cultural knowledge. Therefore, at present, the ideological reform of chorus education and teaching urgently needs to solve relevant problems. For example, a teacher can

stimulate students to collect and track the rehearsal, cultural background knowledge related information or listen to radio and television programs, such as network resources and other various methods, and obtain abundant music information, and let the students use the knowledge and information theory is analyzed, according to the specific requirements of chorus rehearsal, raises the student independent thinking, let the students themselves to move up, and the teacher activity actively, achieve a win-win situation, students and teachers are in common in growth.

2.1 The state and schools attach increasing importance to choral singing

While strengthening the construction of socialist culture in China, it advocates the popularization of quality-oriented education and insists on the comprehensive development of talents. Therefore, to strengthen people's aesthetic consciousness and improve people's quality, we should promote the starting point of choral art development. To actively carry out choral communication with foreign countries, to strengthen the trend of foreign art progress and the latest achievements of contemporary Chinese education, is conducive to improving the soft power and influence of Chinese culture, and is of great significance to improving China's comprehensive national strength.

Countries mentioned four confidence in 16 years of "cultural confidence" that should go to the development of their own culture, combined with the chorus, more conducive to promoting choral music quality education as well as to the chorus of mass foundation, not only elementary and middle schools education idea, gradually spread, has good for society in the pace of life emotion adjustment.

2.2 Choral teaching among schools can form healthy competition and communication

How to carry out activities between the school and the school chorus, chorus communicate regularly play, learn from each other, let the students in the process of practice activity to promote collectivism consciousness, at the same time of experience team cooperation, the school chorus education offers students a wide field of vision, will love chorus classmates together, use after school to carry out various activities, through various games, social welfare, etc., that children get plenty of exercise, greatly improved the personal comprehensive ability, broaden the horizons, deepen the students' love and life experience of art; At the same time, the communication between schools can also form a healthy competition, which can promote the development of chorus education and teaching; Improve social recognition.

2.3 New changes in information and regional communication have brought impacts and challenges to choral teaching in primary and secondary schools

After hundreds of years of development, the European chorus has formed a certain scale and reached its peak. It has done well in the fusion of sounds, the precise pitch and the tacit understanding that characterise these Western European choruses. In contrast, choral groups in eastern Europe were capable of producing lively music; Most

choral members in these countries come from church choirs or have studied in choral schools.

China is located in Asia, so it can fully learn from the experience of neighboring countries in chorus. For example, chorus from Singapore and Indonesia often win the competition with ethnic characteristics. However, China is relatively weak in this respect, so it can learn from the teaching of chorus in primary and secondary schools by incorporating traditional Chinese cultural elements. It is believed that there will be different innovations springing up like mushrooms, which will greatly strengthen the impact on chorus education and teaching in primary and secondary schools.

3.CONCLUSION

In the current economic development of Our country, the country actually attaches great importance to quality education, and as the largest student base of primary and secondary school students, equivalent to the future of the motherland and the next generation; At the same time of learning knowledge, choral education can not only help students to be kind and friendly in spirit, but also learn to be cooperative in the process, instead of individualism. It is of great help to students' physical and mental health and

plays a positive role in regulating. Now there are many opportunities, but challenges are also difficult, we should not only seize the opportunities, but also not afraid of challenges, only in this way, our primary and secondary chorus education and teaching development can keep pace with The Times and constantly ascend to a new level.

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Analysis of Community Correction System

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Abstract: Since the 1950s and 1960s, countries in the world have continuously tried to effectively solve crimes and criminals' problems with humane penalties. Community corrections systems have emerged as an innovative form of penal systems. Since 2003, the pilot work of community corrections in our country has been carried out smoothly and the community correction system has been initially established. However, compared with western developed countries, our country lacks a systematic correction plan for community correction, so the effect of community correction is not good. Therefore, we can learn from the outstanding judicial experience of foreign countries to solve the existing problems of community corrections in accordance with the problems in practice.
Keywords: Community Correction; Problem; System Improvement

1. OVERVIEW OF THE VALUE OF THE COMMUNITY CORRECTION SYSTEM

(1) The Humanitarianism of Criminal Punishment

One of the basic value goals of punishment in modern society is the humanization of criminal punishment. The history of the development of punishment is from barbarism to civilization, from severe to lenient. The development of the humanization of punishment has paved the way for the future research on the human rights of criminals. It believes that criminals, as a component of social members, have independent personalities and should enjoy basic human rights, that is, the right of survival and development, and those who enjoy basic human rights with human dignity. Although criminals have caused more or less harm to the society due to criminal acts, they will be deprived of certain personal and property rights in accordance with the law, but those who have not been deprived of personal and property rights must be fully protected by the law. The community corrections system rarely has the same drawbacks as the imprisonment system. The community corrections system enables community corrections prisoners to realize their re-socialization in the social environment. While serving the sentence, there is no omission to reconstruct the social ability of prisoners., thus avoiding the problems of cross-infection and prisonization stigma caused by long-term prisons, which is conducive to maintaining the connection between the inmates and the family and society, so that the inmates can keep up with social development while receiving punishment. The pace of punishment embodies the spirit of humane valueism in punishment. `

(2) The Concept of Returning to Society

Due to the rapid development of society, the reform of criminals must assume the two functions of socialization and re-socialization. The socialization function can prompt criminals to continuously learn new knowledge and keep up with the development of society. The function of resocialization here refers to reforming criminals so that they can eradicate vices. However, many prisons in China are built in remote and sparsely populated areas due to the influence of ideas such as "conducive to the organization of labor reform." The layout of the prison has brought many inconveniences to the prison work, such as difficulty in absorbing high-level talents to work in the prison, difficulty in solving the study of prison guards' family members, etc. The prison even appears to be separated from the society. The re-socialization of community prisoners is not completely passive and compulsory, but has a certain degree of active participation. Focusing on the common goal of being able to maximize the re-socialization of inmates while serving sentences, correctional institutions and community inmates shall work together to engage in relevant enforcement activities, and the personal dignity of community inmates has been given sufficient attention and community inmates. Active participation and cooperation have become necessary prerequisites and conditions for corrective activities. The second is flexibility. Community corrections is aimed at the personality of community prisoners, and focuses on the individual design of the re-socialization of community prisoners. In this mode, correction subjects regularly or irregularly visit correction targets in order to understand the existence of community prisoners in the process of serving sentences. Therefore, the corresponding countermeasures can be made accurately. The advantage of this design is to greatly reduce the inherent defects and disadvantages of the penalty of imprisonment in the process of community re-socialization of prisoners. The third is openness. The community correction model is to place community prisoners in a real society, allowing community prisoners to integrate into social life in real social practice, so that they can receive help and education from family and community in social life, and receive good and positive influence brought by social fashions keeps up with the development of society and the times, thus enabling them to realize re-socialization under community corrections.

(3) Economic principles

The operation of penalties is a costly activity, but the criminal justice resources are quite limited, especially the cost of the execution of imprisonment is quite high. Community corrections can not only integrate judicial resources to reduce the cost of executing penalties and correct prisoners, but also can gather in the community to carry out various social correction education projects for criminals who do not need to apply prison corrections. China is a developing country. The implementation of community corrections requires a large amount of government investment. However, China's economic

development determines the relative shortage of financial resources. Therefore, in the implementation of community corrections, the implementation should emphasize the minimization of the penalty execution cost and the maximization of benefits, and the economics of execution should be emphasized. At present, there are many inmates in the prison and the space is limited, and the prisons are under budget for supervision and education, which has brought obstacles to the construction and long-term development of the prison, which has caused the prison to deviate from its own nature and excessively pursue income generation. This situation is not conducive to the rational use of state financial resources, nor is it conducive to improving the quality of education and reform of prisoners. There is no objection that community corrections will be an important way to effectively alleviate prison pressure and become the most feasible way to solve the problem of prison overcrowding.

2. ANALYSIS OF THE JUDICIAL PRACTICE OF THE COMMUNITY CORRECTION SYSTEM

(1) Conceptual Issues

Severe punishment ideology emphasizes the deterrent effect of punishment in the prevention and control of crime, ignoring other legal methods and social defense norms. The long-standing thoughts of severe punishment and deep-rooted concepts of retribution, the risk awareness of law enforcement agencies and the awareness of prevention of the community are very strong. Law enforcement agencies are worried about social instability, coupled with the lack of relevant non-custodial enforcement measures, so they rarely apply. Community residents instinctively have a precautionary psychology towards criminals, hold an attitude of rejection to community correction activities, and misinterpret community corrections as indulgence to criminals. Community corrections embodies the mitigation and socialization of punishment, and its localization process will inevitably be hindered by China's traditional concept of punishment.

(2) Insufficient Funding

Community corrections is a new type of penalty enforcement, financial support is the guarantee of community corrections work, or it will affect the normal development of corrections work. In most of the pilot cities of community corrections in China, the funding for community corrections is mainly the work funding of the judicial administrative organs and the temporary appropriations of various regional governments. In actual work, a common problem faced by economically underdeveloped areas is that the local fiscal revenue is tight, and the allocated funds are difficult to adjust the normal community correction work. There are obvious differences in the correction level and correction effect in various regions in my country. The main reason is the lack of clear standards to ensure the specific operation of funds in my country. The level of economic development in each region determines the state of fiscal revenue, and the funds invested in community corrections in various regions. There is also a big difference, which not only affects the sense of responsibility of community corrections staff, but

also weakens their enthusiasm for correction work, and the expected effect of community corrections is difficult to achieve.

(3) Lack of Professional Community Corrections Personnel

At present, the community corrections work in the pilot areas has absorbed part of social volunteers, but the main community corrections workers are drawn from the basic-level judicial administrative departments, labor camps, and prisons. Due to the lack of professional knowledge related to community corrections work, they have shown many deficiencies in their ability and skills in the daily correction work such as education, management, and assistance to community corrections inmates, so they need to be improved through long-term practice. The daily work of community corrections workers is to manage and educate community prisoners. The quality of community corrections workers is directly related to the overall correction effect of community corrections work.

3. NEW IDEAS FOR IMPROVING THE COMMUNITY CORRECTION SYSTEM

(1) Conceptual Update

For a long time, the thought of "severe punishment doctrine" has been deeply rooted in our country. Modern society is a society under the rule of law with a very high political, economic and cultural level. The concept of punishment has developed from heavy punishment and retribution to mitigation and education. Community corrections conform to this change in the concept of punishment and reflect modern Political civilization. Therefore, working hard to change the heavy punishment ideology in the public's mind, let them accept and help criminals with a tolerant attitude, and try to reflect their understanding of modern civilized punishment concepts, which will help improve the quality of community corrections and safeguard the society stability. We must pay attention to the intensity of publicity, increase positive publicity for community corrections, and strive to eliminate the people's ideological concerns about community corrections. In the process of propaganda, it is necessary to clarify the strictness of community corrections object selection in the judicial department, and the punishment measures for inmates in the process of community corrections, such as endangering the living order of community residents or escape. Changing the concept of punishment will make it easier for the prisoners who receive corrections in the community to be recognized by the community residents, which will help the smooth development of community corrections. Therefore, when the government actively promotes community corrections, it should increase the publicity of the concept of social punishment, so that the whole society will change the concept of execution and further develop community corrections.

(2) Establish a Guarantee Mechanism for Community Corrections Funds

The biggest problem facing the community correction work in our country is the shortage of funds. The community correction funds in the pilot areas are jointly borne by the province, city, county and even township

(street) finances, which brings certain economic pressure to the local finance. As a project of the reform of the central judicial system, community corrections should refer to the practice of prison system reform, establish a financial guarantee mechanism for community corrections, include community corrections funds in the financial budgets of people's governments at all levels, and let the state guarantee funding of community corrections work needs. In addition, with the help of social forces, the development of community corrections can enable correction subjects to avoid the pain caused by imprisonment punishment, thereby reducing the probability of re-offending and conducive to social stability. Therefore, it is necessary to increase the publicity of community corrections, so that the public truly realize the significance of community corrections work, and actively seek the help of various social groups, enterprises and institutions, overseas Chinese and other social forces. In order to ensure the smooth development of community corrections work, the government can also give certain financial support and government preferential treatment to the community corrections entrepreneurial base created in practice.

(3) Establish a Team of High-quality Community Corrections Workers

Community corrections staff belong to the management workers of national corrections institutions, and are managed by the same community corrections institutions respectively, and are responsible for the specific matters of community corrections management, such as the determination of correction objects, the acceptance of corrections, and the establishment of files. In addition to specialized community corrections staff, community corrections institutions also recruit social workers, volunteers, and retirees to serve community corrections. Community corrections institutions of different agencies bear different community corrections work, absorb relevant professionals who meet the characteristics of community corrections work to participate in community corrections work, further standardize their professional composition and refine full-time and part-time corrections workers, thereby increasing the support of all aspects of social forces. Recruiting qualified community residents, focusing on cultivating community strength, can recruit retired public officials, prosecutors, legal personnel, judicial administrative staff, teachers, and college students as volunteers, which can promote the development of publicity work and help community corrections work Went smoothly. In addition, those who have been released from prison with better reforms can also participate in community corrections and educate and guide the corrected by telling their personal feelings during corrections. Various provinces and cities can also regularly arrange education, sociology and other related knowledge training for relevant personnel of community corrections according to the actual situation of the region,

and increase the participation of the staff of grass-roots judicial offices, village committees, and neighborhood committees, and better Carry out correction work. In addition, in order to ensure the smooth implementation of community corrections and maintain social security, a certain number of people's police officers should be assigned to community corrections institutions to perform punishment enforcement duties and be responsible for implementing compulsory measures.

(4) The Introduction of Guarantee Procedures in the Pre-trial Assessment

The pre-trial investigation and evaluation system is an important standard for testing the quality of community corrections serving prisoners, and it is an important link in community corrections work. The introduction of the guarantee system in the pretrial evaluation of community corrections originated from the U.S. probation qualification investigation system. A written guarantee of joint and several liability, and the community corrections office will visit and investigate the social relations of the survey subjects. Finally, the people's court will decide whether to approve the application of community corrections to the offender based on the investigation of the community corrections office. In recent years, in the community corrections pilot work, the introduction of a guarantee mechanism in the community corrections pre-trial evaluation procedure has been actively promoted, and a more significant judicial practice effect has been achieved. Through the implementation of the guarantee procedure, the community can be mobilized to the greatest extent to participate in community corrections supervision work, while enriching supervising the power, it also controls the prisoners to commit crimes again.

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On Diversified Teaching of National Vocal Music in Normal Universities

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Abstract: National vocal music has a strong national characteristic, at the same time absorb and learn from other excellent vocal music art elements into a new form of vocal music. Therefore, in the teaching of national vocal music in normal universities, we must pay attention to the construction of diversified environment, and understand the concept of different national vocal music, so as to provide good conditions for the training of vocal music talents. This paper mainly analyzes the current situation of national vocal music teaching in normal universities in China, and expounds the ways of diversified development.
Key words: Normal University; National Vocal Music; Diversified Teaching; Cause Analysis

1. ANALYSIS OF THE CURRENT SITUATION OF THE TEACHING OF NATIONAL VOCAL MUSIC IN NORMAL UNIVERSITIES IN CHINA

The development of science and technology has enriched the teaching means and methods in colleges and universities. At present, diversified teaching has become the main trend of teaching. National vocal music teaching is an important part of music teaching in colleges and universities, so teachers must according to the change and development of The Times, adopt diversified teaching ideas, keep up with the pace of The Times, in the national vocal music teaching should not only embody the national character, and reflects the scientific and artistic, combining the reality of life, adopt diversified teaching methods, improve teaching quality and efficiency.

National vocal music teaching in colleges and universities in the current there are many shortcomings of national character, teaching content, single teaching mode and so on all have influence on the effects of national vocal music teaching, lead to China's national vocal music teaching gradually marginalized, next to the present situation of our national vocal music teaching for specific analysis.

1.1 Gradually weakening national character

Since the 1950s, China's art colleges and universities have been constantly rising, and the major of ethnic vocal music has also begun to be built and developed in art colleges, attracting and cultivating a large number of musical talents, laying a foundation for the development of China's ethnic vocal music.

In terms of the teaching of ethnic vocal music, diversified performance styles are required in the teaching of ethnic vocal music. With the development of internationalization and the entry of foreign cultures, the singing styles of Chinese songs also begin to take on diversified forms, which affects the development of Chinese ethnic vocal music. But under the impact of the diversified culture, most of the colleges and universities pay more attention to close the sound as well as the singing of popular music teaching and research, makes the national vocal music teaching gradually blurred, as the center of gravity to the transfer of western music, the position of the national vocal music more and more low, so in the development of diversified ethnic music there is a lot of difficulties.

1.2 The content of teaching materials is divorced from reality

In order to improve teaching efficiency, satisfy the market demand of talents cultivation, art college in the writing of teaching materials also need to combined with teaching practice, but from the perspective of the textbook case of ethnic vocal music, most of which does not meet the actual content, westernization is more serious, most of art colleges in compiling textbooks that are weak and marginalized due to national vocal music also caused some colleges and universities as a elective mouth, this way of curriculum to enhance students to the attention of the national vocal music. In the context of the internationalization of art and culture, art teaching in China cannot be conducted in isolation. However, if too much emphasis is placed on foreign art and culture education, national art will be neglected, which will put the cart before the horse and also affect the development of national vocal art. In order to achieve better development in the study of ethnic vocal music, students must master a lot of theoretical knowledge. Currently, due to the gap in the compilation of teaching materials among colleges and universities, students lack of professionalism in learning and mastering theoretical knowledge.

1.3 Obsolete teaching mode

Through the analysis of the development of China's art field, we can see that western music and pop music have always been the mainstream of music field, while national vocal music has gradually been marginalized. This also leads to the lack of emphasis on national vocal music in many colleges and universities, and the lack of publicity and promotion in vocal music teaching, which leads to the serious obstacles to the development of national vocal music. The national vocal music is seriously marginalized, the national characteristics are gradually weakened, and the teaching efficiency is difficult to improve. In addition, most colleges and universities still adopt traditional teaching methods in teaching, which can realize the inheritance of traditional culture, but cannot meet the development needs of The Times.

Second, the necessity of diversified teaching of national vocal music

There are mainly the following reasons why diversified teaching of national vocal music should be carried out under the new situation: First, it is an inevitable requirement for the development of national vocal music

discipline. Folk music is usually composed of musical elements such as life, culture, emotion and aesthetics, and there are great differences in the composing elements of different national vocal music, which leads to the diversified characteristics of Chinese national vocal music. Therefore, the diversification of national vocal music requires teachers to adhere to the principle of diversification in the development of vocal music teaching, showing a distinct "national" characteristic, so that students can truly know and understand China's national vocal music culture. Second, the national vocal music realizes the inheritance development inevitable request. National vocal music teaching is the main purpose is to national vocal music of imparting knowledge and skills to students systematically, only can make the students to carry out the diversified teaching for the origin, development and characteristics of national vocal music has in-depth understanding of, and an in-depth experience and comprehension is one of the artistic charm, and enable students to learn and master a solid national vocal music skills, hence leading to the inheritance and innovation of national vocal music culture.

2. IMPLEMENTATION STRATEGIES OF DIVERSIFIED TEACHING OF ETHNIC VOCAL MUSIC UNDER THE NEW SITUATION

2.1 Diversified teaching contents to broaden students' horizon

According to the survey of the current national vocal music teaching content results show that due to restricted by various subjective and objective factors, lead to national vocal music teachers are usually depends on the music teaching material in teaching, students have access to the national vocal music teaching content is extremely limited, makes the national vocal music teaching content simplification problems, difficult to effectively meet the demand of the diversity of student learning, is not conducive to broaden the students' music. China is a large country composed of 56 ethnic groups, each of which has its own unique musical culture and style. These precious traditional national vocal music arts are the precious cultural wealth created and inherited by the Chinese nation. These colorful and lively contents of national vocal music should all become the teaching contents of national vocal music, so as to realize the diversified objectives of teaching contents of national vocal music and make students' vision not only limited to textbooks. In this regard, teachers of ethnic vocal music should pay attention to the expansion of teaching content, fully absorb music works of different nationalities, present the cultural characteristics and creative background of ethnic musical works, provide sensory stimulation to students, and help them learn and master the skills and methods of ethnic vocal music.

2.2 Diversification of teaching methods and improvement of teaching quality

Class teaching of ethnic vocal music is the main position to impart traditional music knowledge to students and guide students to learn and master singing skills and methods of ethnic vocal music. We must focus on classroom teaching. However, most teachers still adopt the traditional "one to one" teaching method in the implementation of ethnic vocal music teaching, which is not only difficult to effectively improve students' learning initiative, but also not conducive to enhancing classroom teaching efficiency. Therefore, teachers must change the traditional spoon-feeding teaching methods and constantly innovate teaching methods in order to constantly improve the quality of national vocal music classroom teaching. First of all, national vocal music teachers must establish scientific educational concepts, scientific analysis of western traditional vocal music singing method and Chinese national vocal music singing method, and deeply understand the similarities and differences between them. On the one hand, as the root of national vocal music lies in the local traditional culture, it requires teachers to integrate the singing method of national vocal music into the practical teaching of national music. On the other hand, teachers should also pay attention to the integration of western vocal pronunciation, in order to help students better understand and grasp the musical works, promote the all-round development of students' comprehensive quality. Secondly, teachers should pay attention to the communication between teachers and students, establish an equal and harmonious relationship between teachers and students, and help students learn national vocal music smoothly by means of teachers' demonstration and students' performance. Finally, teachers should reasonably select situational teaching method, game teaching method, group cooperation teaching method and micro-course teaching method according to the teaching content and teaching objective and students' physical and mental characteristics in the teaching process of ethnic vocal music, so as to improve the teaching quality of ethnic vocal music.

2.3 Diversification of practical activities and cultivation of practical qualities

It should be said that the national vocal music discipline with very strong practicality, but too many teachers in the national vocal music teaching process, the interpretation of lay particular stress on theoretical knowledge in a certain extent, ignore the integration between theory and practice, it is difficult to let the national vocal music classroom teaching form a virtuous cycle, not to make the students grasp the national vocal music art charm, is not conducive to students to help students learn and master national art. National vocal music teachers, therefore, must take the initiative to break this too theoretical and ignoring the practice mode of limit sex education, adhere to the combination of theory and practice, so that the students in the national vocal music practice verify the validity of the theory of national vocal music, at the same time the national vocal music practice constantly improve national vocal music, to better guide practice.

Teachers may organize students to participate in the following practical activities to meet the diversified requirements of ethnic vocal music teaching: First, organize singing contests for ethnic vocal music works. Teachers may organize singing competitions for national vocal music works, actively encourage students to participate in the competitions, fully display and exercise

their own national vocal music expertise during the competition, and increase their learning confidence. When the competition is over, teachers should ask students to evaluate each other, reflect on themselves, and give corresponding guidance, so as to further help students to develop and improve. Second, teachers should encourage students out of the classroom, lead the students to minority colonies of the performance of folk customs activities, to visit the older generation of national vocal music singer, or watch the corresponding or documentary film and television works, so as to enable students to feel the national vocal music in the social practice of cultural essence and artistic charm. Thirdly, teachers should take the initiative to invite national vocal music singers, especially inheritors of intangible cultural heritage, to the school for lectures, teaching guidance and special performances, so as to further enhance their artistic vision and continuously improve students' artistic quality of national vocal music.

3. CONCLUSION

To sum up, national vocal music is an important part of excellent traditional culture, and we have the responsibility and obligation to inherit and develop this folk art. As a bridge to inherit the art of national vocal music, vocal music teachers should constantly innovate educational concepts, enrich teaching methods and diversify teaching of national vocal music, so as to better carry forward and develop the art of national vocal music in China.

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Research on The Construction of Executive Force in Local Colleges and Universities from The Perspective of Governance

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Abstract: The construction of executive force is an important guarantee for the implementation of major decisions and arrangements, an inherent requirement for cadres to assume their loyalty, a necessary condition for improving the effectiveness of work, and an important guarantee for the realization of healthy development. At present, China's local colleges and universities are generally not a strong executive force. To build a strong executive force, we must constantly improve our ability to make decisions scientifically, continue to stimulate executive vitality, and comprehensively optimize executive efficiency.
Keywords: Governance; Execution; Construction

1. WHAT IS EXECUTIVE FORCE

The top-level design of science is just a good beginning, just the beginning of the establishment of principles, the opening of strategies, and the foundation of the overall situation. Without strong executive force, the perfect top-level design, the perfect development strategy, and the magnificent goals and tasks can only be empty talk.

The term "executive power" was first proposed by veteran American entrepreneur Paul Thomas and business management scientist David Byrne, who believed that executive power plays an important role in the competition of enterprises. The core of executive power is the ability to put ideas, strategies, decisions, plans, and deployments into practice. It is the ability to carry out the strategic intention of the superior and achieve the predetermined goals.

Measures of executive power vary from subject to subject. For an individual, execution is to complete one's work tasks on time, with quality and quantity. To leading group character, executive force is appeal force, organization force, cohesive force, and combat effectiveness. For an organization, execution is the completion of specific operational tasks formulated and required by the organization within a predetermined time frame. For colleges and universities, execution is the normal execution of their strategic decisions and the key to the success or failure of their career development.

2. WHY SHOULD WE STRENGTHEN EXECUTION

From the political perspective, strengthening the construction of the executive force is an important guarantee for the implementation of major decisions and arrangements. The consistency between the subordinate and the superior is first reflected in the executive force. Without the guarantee of the executive force, consistency is just an empty word. To realize the great dream and promote the development of the enterprise, we need not only the guidance of strategic goals but also effective implementation. With a high sense of responsibility and a sense of mission, the faculty and staff must take out 100 percent of the executive force, quickly translate the decisions and arrangements into concrete actions, and put them into practical work.

From the perspective of cognition, strengthening the construction of the executive force is the internal requirement of employee loyalty. Loyalty and responsibility is a noble quality, which is the unity of external expression and internal demands. The most important thing for loyalty is to match words with deeds. The most important thing is to interpret and demonstrate loyalty to actions. We do not lack exciting slogans but concrete action.

From the perspective of practice, the construction of an executive force is a necessary condition to strengthen the construction of a team and enhance the effectiveness of work. Leaders are the backbone of work, the organizer of various undertakings, and the leader of the majority of employees. They play an important exemplary role. To advance your career is to seize the "critical minority" of leaders whose ability to execute determines the success or failure of an organization.

From the results of the work, the construction of an executive force is an important guarantee to realize the healthy and rapid development of the school. Some scholars believe that 30% of the development of a school depends on strategy, 40% depends on execution, and the rest is an opportunity. In the three stages of any work, namely, planning and design, implementation and result and effect, if there is no intermediate implementation and implementation, it is difficult to unify the subjective desire and objective reality, and the development of various undertakings in the school will not be guaranteed. Scientific top-level design is important, but firm and lasting execution is the key to the pursuit of ideals and the realization of goals. Therefore, the construction of a strong executive force is related to whether the school can achieve leapfrog development in the fierce competition, and more importantly, whether the fundamental interests of teachers and students can be effectively guaranteed.

3. THE CURRENT SITUATION OF LOCAL COLLEGES AND UNIVERSITIES EXECUTIVE POWER CONSTRUCTION

Through comparison, we can have a clearer understanding of the executive force construction in colleges and universities. Compared with the government, colleges and

universities are weak in execution, lacking in principle and effectiveness. The construction of the executive power of government organs has been promoted to a higher position, which is regarded as an important link to enhance the capacity of national governance modernization. The executive power of the local government is strong, which is far beyond the reach of colleges and universities. Compared with local governments, the biggest problem in colleges and universities is the lack of sense of responsibility on the part of faculty and staff and the lack of enforcement for what they have set their minds to do. Some employees think that it is the responsibility of leaders to grasp the executive force, and these wrong ideas and attitudes lead to the weak executive force of decision deployment in colleges and universities.

Compared with enterprises, the construction of executive force in colleges and universities lacks the rigorous and meticulous working attitude and improving working methods. Running education is different from running an enterprise, but the concept of efficiency and benefit, quality management, and cost accounting of an enterprise is worth learning for reference by colleges and universities. Compared with enterprises, the executive power of universities is not firm. First, the lack of overall planning, the implementation of the process of their own, work deployment is difficult to make unremitting. The second is the lack of communication, information obstruction between the organs and the grass-roots level, and unclear responsibilities between departments. Third, the control and control is ineffective, the arrangement and arrangement of work become a mere formality, and the implementation of some supervision systems is ineffective, which affects the effectiveness of work.

Compared with high-level universities, local universities have loose execution and lack the urgent pursuit of self-breakthrough. Some leaders are afraid to act in the face of difficulties. Some leaders are incompetent. When they encounter difficulties in their work, instead of actively seeking ways to communicate and coordinate, they blindly delay. Still, some cadres do not act. They work on their own and lack the big picture. They execute that which is good for them, and they turn away that which is not good for them.

4. HOW TO STRENGTHEN THE EXECUTION OF LOCAL COLLEGES AND UNIVERSITIES

To build a strong executive force, we must master the correct methods and approaches.

First of all, we should constantly improve our scientific decision-making ability. The goal determines the path of execution and the actual effect. If you don't have a goal, you will lose your way. If you don't have a clear goal, you won't be able to prioritize your work. Clear and realistic goal setting is based on the decision-making ability of the leading cadres. Strengthening theory learning is the only way to improve the ability of scientific decision-making and the first task to build a strong executive force. To strengthen learning, we must learn with a clear purpose. To learn to study policy, do accurate grasp, this is not only to strengthen the purpose of learning but also do a good job of the shortcut. Emphasis should be laid on key learning, scientific theories, and the law of higher education development as well as knowledge related to work. We should combine practical learning, pay attention to practice, based on the actual development of the unit, solve the development problems in the work.

Secondly, we must continue to stimulate the vitality of execution. Execution is competitiveness and soft power. The executive force can not only promote work innovation, but also enhance the cohesion of cadres and workers, and generate great enthusiasm for work. To build a strong executive force, we must shape the value norms of the majority of workers and seriously correct the wrong value orientation. We should cultivate the home-school feelings of teachers and students, and further enhance their sense of belonging to the school. We should condense the campus culture with the characteristics of the school, and stimulate the execution vitality of the whole school with the strong tension of the campus culture. We need to develop practical and efficient execution habits.

Finally, we need to optimize overall performance. We should cultivate the perseverance of leaders. Whatever has been determined must be resolutely carried out. We must see to it that what has been done is done. To build a strong executive force, we should not only focus on the result of execution but also the effect of execution. Efficient execution is not simply obedience, but innovation and wisdom.

Must be good at grasping the center work, must be good at highlighting their advantages. At the same time, we should grasp the main aspects of the contradiction. To build a strong executive force, the most important thing is to synchronize thinking, the most important thing is to turn statements into actual actions, the most important thing is to work pragmatically, and use practical actions to turn strategic planning into a good reality.

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Thinking on Cross-cultural Communication and Language Competence Development of Second Language Learners

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Abstract: Most languages exist for communication and exchanges. Based on the current situation of English teaching, this paper proposes strategies for cross-cultural communication and language competence development of second language learners, which can not only guide students to pay more attention to the cultural output in second language acquisition, but also directly strengthen the foundation of their English learning and finally improve their language competence.
Keywords: Cross-cultural communication; Second language learners; Language competence development

1. INTRODUCTION

This paper mainly discusses cross-cultural communication and the development of language competence of second language learners by integrating Chinese teaching cases. From the perspective of development, most cross-cultural communication exists in occasions where different cultures meet, and more participants actually exchange appropriate information better in verbal or non-verbal form. In actual cross-cultural communication, most second language learners often fail to understand the behaviors and expressions of native speakers, and ultimately fail to understand the cultural thinking behind the national language. In this context, this paper focuses on understanding cross-cultural communication and the development strategies of second language learners' language competence.

Language is not only a communicative tool among people, but also a social phenomenon. In general, language cannot exist independently of culture, let alone of the practices and beliefs existing in the society. Conventional practices and beliefs actually determine the nature of our lives. Such a series of views have been widely recognized by linguists and educators all over the world. The four main elements of conventional communicative competence are mainly composed of grammaticality, feasibility, appropriateness and reality. Among these four elements, the first two are directly related to language, while the last two are directly related to culture. Therefore, language and culture in language communication are effectively combined together.

Culture is actually composed of open culture and hidden culture. The former is mostly visible information, the latter is mostly invisible. Both France and China are high-context cultural countries. The people of these two countries share different cultural contexts in a tacit way and make them play an important role in communication. In fact, only after special training can learners better understand the deep meaning inside different languages and cultures [1]. In addition, different types of culture will produce different psychological exclusiveness. The key to second language acquisition lies in the foundation of the mother tongue. The exclusivity of the native culture will cause some psychological rejection of learners, and many people who are learning a second language will be constantly affected by the surrounding environment. Therefore, only by building a good cross-cultural communication environment can learners improve the efficiency of language training.

2. DEFINITION OF THE COMPETENCE CROSS-CULTURAL ACQUISITORS

First, the concept of cross-cultural communication and communicative competence should be defined in order to better discuss cross-cultural communication competence. The so-called cross-cultural communication means that two people with different language backgrounds can communicate more effectively, which includes not only international cross-cultural communication, but also the communication in the process of second language acquisition. However, the concept of communicative competence was put forward in the last century. After many linguists' amendments, a consensus was reached in linguistic academic circles: communicative competence is composed of language skills and language ability, and the ultimate goal of most second language learners is to effectively integrate more idiomatic speech into the situation and to effectively avoid mistakes caused by lack of knowledge.

3. IMPORTANT CONDITIONS FOR SECOND LANGUAGE LEARNERS TO DEVELOP THEIR CROSS-CULTURAL COMMUNICATION COMPETENCE

3.1 Master the most basic communication competence and language structure

The most basic requirement in the development of cross-cultural communication competence is the ability to communicate in the second language and to master the language structure. English teaching in China has laid a good foundation for the development of students. Most learners can master systematically the contents including grammar, reading, listening and other different aspects, and the ultimate purpose is to learn the translation culture more systematically. However, most of these different translation cultures are affected by the linguistic and cultural backgrounds, and are directly restricted by the thinking patterns of different nationalities. In practice, they will generate bad language barriers due to the

influence of fixed thinking, and subsequent communication cannot be carried out better. To this end, it is necessary to continuously enhance the intensity of oral practice to better enhance their own communication skills.

3.2 Master the most basic communication skills

In cross-cultural communication, even if it is the same language form, it will show different meanings for different contexts, objects and other contents. Only by storing complete communicative knowledge can learners better improve their communication skills [2]. Most communicators can find reasonable countermeasures by clearly understanding the deep meaning of each other's dialogue.

3.3 Learn to empathize

In cross-cultural communication, everyone needs to learn to empathize when facing different communicators and choose a reasonable way of communication according to the specific situation. In the end, they will not be directly affected by political, ethnic and historical factors. In actual communication, both parties need to be on an equal footing. In fact, they should not impose their own values on others, which not only seems very impolite, but also causes inconvenience to subsequent communication and exchanges.

3.4 Have a clear understanding of the cultural background of the second language country

As a common development tool, language has not only witnessed historical changes, but also witnessed the development of culture. If it is possible to effectively use a second language in a cross-cultural context, the following strategies should be followed: first, pay attention to effectively understand the different historical and cultural backgrounds of China and the West; second, the development differences in science and technology, economy and other fields have enhanced people's understanding of cross-cultural communication; third, Western culture has experienced multicultural integration in the process of development, which is fundamentally different from the cultural inheritance in China. Most people should improve their cultural communication skills by deepening their understanding of cultural differences.

3.5 Ability to switch roles

People will play different roles in the daily communication. Everyone needs to better switch roles based on analyzing different situations. This will not only effectively overcome ethnocentrism and prejudice, but also effectively integrate their own values into the practices of others. In the context of cross-cultural communication, students must be able to distinguish their own environment on the basis of cultivating the awareness of cross-cultural communication, and then effectively change their roles[3].

4. DEVELOP CROSS-CULTURAL COMMUNICATION COMPETENCE IN COMBINATION WITH SECOND LANGUAGE TEACHING

4.1 Inject cultural input into second language teaching

Attention should be paid to the direct import of cultural knowledge from other countries in second language teaching and the use of materials published by other countries as much as possible. There will be no errors in the content of these textbooks. Professionals can still choose appropriate materials from actual communication activities, and pay attention to effectively emphasizing the social knowledge, cultural knowledge and historical background of different countries in the teaching process. Only in this way can more students effectively understand the differences and improve the efficiency of cross-cultural communication. In addition, it is more necessary to effectively classify the contents in the textbook, divide different contents into life, social and other different aspects, and adapt them into short plays by combining the themes in the text, and let more learners practice in class.

4.2 Give full play to the role of professional associations

Different kinds of club activities can be organized to infiltrate different cultural information to different learners, in order to help more learners accumulate relevant cultural contents, and finally improve their cross-cultural communication ability. For example, when carrying out reading activities, teachers will recommend some suitable literary works, picture books and poems to students, and by reading these articles, learners can better broaden their horizons and enrich their inner knowledge.

In fact, the learning process of learners in the community is also a process of communication. Most of the ways of teaching through entertainment can also better enhance students' own interests. Additionally, most activities including "I love to remember words", "French Drama" and other different types of activities can also better improve the quality of the majority of learners.

4.3 Create a good communication environment by increasing the proportion of practical teaching

Better simulation training can be achieved by using more appropriate teaching tools. In the actual training, appropriate teachers can be appointed as speakers first, and the two sides can make more learners feel the differences within different cultures in the process of mutual explanation. In fact, more learners can correct their mistakes in communication. Moreover, learners' own senses can be stimulated from multiple aspects by cooperating with multimedia and other different network resources, so as to make the classroom more vivid and lively. More learners can train their expressions by listening to and watching native videos and paying attention to the context of the society at that time [4]. In this way, more learners can better overcome their fears in the process of expression and better integrate the cultures of different countries.

4.4 Improve the ability of teachers

In practice, only by effectively improving the ability of the teachers can they better integrate the cross-cultural background to improve the communicative ability of students. Teaching is a very complex project, and the effect of teaching is directly related to the teacher's own teaching level. A good teacher should not only play the role of a guide, but also better play the role of a conductor. A good teacher not only needs to have rich knowledge, but also needs to be more humorous. In the process of cultivating teachers' cross-cultural competence, the

majority of teachers need to possess the following abilities:

4.4.1 Cultivate teachers' interest through encouragement and inspiration

Only when students have a strong interest can they achieve greater success in the future. For many students, English learning is not an interesting thing, and language learning is not an immediate thing. Therefore, every teacher needs to know how to better enhance the learner's own interest in the learning process. First, teachers should have a better understanding of the difficulties each student faces in the process of learning a language, and help them better understand their own problems by using "heuristic" guidance. Second, teachers after class also need to directly shorten the distance between teachers and students through mutual communication with students, so as to better release students' own psychological pressure. In this way, more students will have enough interest to know the basic knowledge in English.

4.4.2 Input through reasonable guidance

Most people can get comprehensible input only by obtaining information beyond the current level. A simple formula is i+1. I represents the current level of the learner, and 1 represents a little more than the current level of the learner [5]. The information that the teacher inputs to the student should be slightly higher than the student's current acceptable level, but not too much or too little.

Language can be effectively integrated into culture. In practice, more teachers can also supplement students' relevant knowledge based on the analysis of different learning contents, and guide them to pay attention to the differences between Chinese culture and Western culture through the use of comparative method, so as to better enhance their awareness of cross-cultural communication. Teachers can also make use of various multimedia tools, including films, television and other different multimedia devices, to make learners better understand the relevant cultures.

5.CONCLUSION

In summary, language cannot exist independently of culture. It exists for communication. On the one hand, we need to fully understand the impact of different cultural factors on the learning effect when learning languages. On the other hand, we also need to use language and cultural output to better grasp the overall language direction. With the gradual acceleration of the process of world integration, we should change the process of language learning from only focusing on learning basic language-related knowledge to improving language communication skills, and ultimately learners are able to put what they have learned into practice.

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A study on The Strategies of Introducing Film Resources into Foreign Literature Teaching

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Abstract: The use of film resources in the teaching of foreign literature in colleges and universities can narrow the cultural gap, break the cognitive barriers caused by history, region and time, and help students better understand the cultural implications of foreign texts, but easy to cause the student to neglect the text reading. Teachers should adhere to the principle of subjectivity in text teaching, guide students to return to text reading through classic movie clips, and cultivate students' problem consciousness and deep-thinking ability of comparative literature.
Key words: Foreign Literature; Film Resources; Problem Consciousness; Comparative Literature

1.TNTRODUCTION

In the age of pictures and pictures, college students are generally enamored of the audio-visual pleasure brought by film and television products, but have no interest in reading literary classics. Many Chinese teachers make corresponding adjustments according to the characteristics of foreign literature courses and the changes of college students' aesthetic psychology, and introduce foreign films as curriculum resources into the classroom for development and utilization. The introduction of film resources in foreign literature classes helps students to intuitively perceive foreign cultures, and it is easy for students to fall into the mistake of watching films instead of reading texts. Proper use of film resources will get twice the result with half the effort, and use film and television resources to construct foreign literature classes, broaden students' cultural horizon, and cultivate students' thinking methods of comparative literature through the comparison of two media resources.

2. ADVANTAGES ANALYSIS

The introduction of film resources in foreign literature teaching provides a good medium for students to perceive foreign culture. Students grow up in the influence of traditional Chinese culture. Although cultural exchanges between China and foreign countries are more convenient and diversified under the background of globalization, cultural differences between China and foreign countries naturally exist, and students' understanding of foreign cultures only stays on some cultural symbols. The foreign literary works read by students are basically translated and separated from the original texts. Literary works themselves contain rich cultural connotations, and students' understanding and interpretation of foreign literary works is based on their understanding of foreign historical and cultural backgrounds. Foreign films is the student perception and convenient way to understand the foreign culture, film load by the customs, rituals, art, religion, history and culture information is the original rendering directly, it is a vivid cultural resources, can enrich students' knowledge of cultures, for the students to read literature humanities connotation foundation.

Growing up in the era of globalization, the new generation of college students are free and active in thinking and like novel and fashionable cultural products. It is difficult to arouse their enthusiasm and thirst for knowledge in foreign literature classes relying on traditional teaching by teachers. The audio-visual resources with sound, emotion and painting make them have a natural sense of affinity, which can add vitality and attraction to foreign literature classes and arouse students' interest in studying foreign literature. The clever embedding of film resources is helpful to break the dull classroom atmosphere, make the foreign literature class become three-dimensional and vivid, attract students to enter the world of foreign literature, and devote themselves to the study of foreign literature courses with an active attitude.

The entry of films into foreign literature classes requires teachers to update their thinking mode and cross-boundary thinking ability. As a media resource different from paper media, film has dual appeal of art and commercial, and its means of expression, narrative rhythm, appreciation and literature are different. If foreign literature teachers want to make efficient use of film resources for teaching, they need to strengthen the knowledge reserve of film theory and cultural studies. The entry of film resources into the classroom focuses on cultivating students' interdisciplinary thinking mode, exploring the variation in the transformation process from literary works to film art with the method of comparative literature, and guiding students to think about the cultural, political, poetic and other elements behind the variation. Only by strengthening the knowledge study and practice of film appreciation and criticism, improving their own comprehensive cultural literacy, and realizing the reference reading and comparison of the two texts, can teachers give full play to the advantages of film course resources.

Films adapted from literary works integrate the life experience, value orientation, artistic personality and other elements of the director. Even the films loyal to the original works have undergone various variations. The creators of the film are limited by the time of the film and the rhythm of the narrative, so the characters, contents and plots in the original works will be cut and compressed in the adaptation. The film and the original work are close in theme and artistic style, but the humanistic spirit and aesthetic connotation have been greatly reduced. Reading a novel usually takes a few days, while watching an adapted film takes only an hour or two, which gives a short, flat and fast visual experience. Although every foreign

literature teacher asks students to read the text, many students watch the film to capture the story, understand the characters, and see the film as a compressed version of the original, rather than reading the work.

After all, the film is a consumer cultural product facing the public. In the process of creation, the aesthetic taste and market factors of the public will be taken into account, and the original work will be radically adapted, resulting in a rift between the film and the aesthetic expression of the original work in terms of humanistic appeal and style presentation. If students choose such films as substitutes for text reading, they will misread the original works.

3. METHOD DISCUSSION

The entry of film resources into the classroom is only an auxiliary teaching method, which takes the service of text teaching as its ultimate goal. Foreign literature teaching is mainly based on the study of literature courses. "All teaching activities should be carried out in a reasonable and orderly way under the teaching plan of the major syllabus. Film and television teaching serves the course of literature, that is, it should give more prominence to professional characteristics and better complete the course tasks." [1] Teachers should have a correct understanding of the role and status of film resources in the teaching of foreign literature, and should not take the place of the others by watching films instead of lecturing in class. In the practice of foreign literature teaching, teachers should timely introduce film resources according to the characteristics of learning content and students' cognitive level, and give full play to the role of film in the course resources of foreign literature teaching. The romantic writers Hugo and Stendhal in the 19th century, their works have distinct characteristics of The Times, but also contain rich religious, historical, social psychological and other cultural information. Due to the gap in time and cultural differences, it is difficult for students to enter the historical and cultural scenes constructed by novels only by reading texts, imagination activities and teachers' explanations. With the help of classic films such as Notre Dame DE Paris and The Red and the Black, teachers can help students enter a rich and sensible historical context, reduce the sense of historical and cultural isolation, approach the artistic world carefully created by literary masters, and deepen their cognition of works.

There are often different film adaptations of foreign literary classics, and some of the films make great changes to the original works and inject strong commercial elements, which is not suitable for foreign literature teaching course resources. In order to make effective use of film resources for teaching, teachers need to carefully select films and "truly bring into the classroom works that successfully embody the spirit of the original works and can be generated according to the changes of the ontological characteristics of film and television art". [2] In addition, when teachers choose films, it is better to choose films with original Chinese subtitles, which can present students with original sounds and situations. "Goriot", "Madame Bovary" (1991 edition), "Notre Dame DE Paris", "Red and Black", "Anna Karenina" and other films successfully reproduced the original artistic style,

not only can bring students strong visual aesthetic experience and emotional revelation, but also can stimulate students' interest in reading the original work. "The meaning of literary classics is never fully explained, and a good film version is only one of many interpretations, encouraging students to return from images to words, to find problems in comparison and close reading, and to gain cognition and aesthetic feeling." [3] Teachers select films that are faithful to the original theme and artistic style according to specific teaching objectives, and guide students to return to text reading through the artistic gate of films. If we abandon the reliance on the basic method of text reading in the study of foreign literature, it would be like getting lost in the woods. With the help of the bridge of film art, it can guide students into foreign literary works and improve their aesthetic ability of language and literature. To cultivate students' humanistic feelings, it is impossible to bypass the basic way of reading literary works. Reading is a process of cultivating the soul and cultivating sentiment, enriching life experience and enhancing humanistic quality.

The introduction of film resources into foreign literature classes is also an effective way to cultivate students' comparative literature thinking. Teachers can also guide students to read foreign classic films and novels by reference, so as to cultivate their interdisciplinary and cross-media thinking ability. The Japanese film Rashomon reveals the depth and complexity of human nature through multi-perspective narration, and Faulkner's stream of consciousness novel The Sound and the Fury also adopts the technique of multi-perspective narration. When students are learning this part of Faulkner, teachers can recommend them to watch rasheman, through which students can gain a perceptual understanding of polyphonic novel poetics, and then guide them to read Faulkner's representative work The Sound and the Fury. Through the reference reading of the two, the teacher will guide the students to compare and analyze the differences between the two narrative arts, realize the combination of literature history and literary theory learning, and improve the students' critical thinking ability and theoretical accomplishment in the reading practice.

"The reform of foreign literature curriculum based on the concept of comparative literature is very beneficial and necessary for the cultivation of undergraduates' comparative literature concept and world literature vision, the natural connection of their professional knowledge at the postgraduate stage, and the timeliness and academicness of the curriculum itself." [4] It is an effective way to train students' thinking of comparative literature to guide students to read the film and the original works comparatively. The film adaptation based on literary works is a process of interdisciplinary reconstruction, as well as a way of personal interpretation and expression of the text, adding the aesthetic and ideological appeal of the creator himself. Teachers guide students to think about the relationship between literature and film art from an interdisciplinary and cross-cultural perspective, and help students to establish the concept of comparative literature by using film resources. For

example, as a classic work of foreign literature, the epic Iliad and the Hollywood film Troy adjust the relationship between human and god by using the modern interpretation method, highlighting human's will and power but weakening the color of God. Teachers should combine students' enthusiasm for watching movies with epic reading. Teachers in the use of films, foreign literature teaching should have a clear purpose, guide students through the novels and movies through a close reading of the text, exploring film in picture composition, the conversion scheduling, viewpoint of deep implication, exploring film in the image of the characters and the plot design of inheritance and transcendence of the original. By using the close reading of texts to discern the differences in details, the author gradually establishes the awareness of problems and explores the "heredity" and "variation" in the process of literature transforming into film art from the perspective of comparative literature. Teachers should guide students to sort out and summarize the fragmented perceptual knowledge, raise it to the level of rational thinking, and gradually cultivate students' thinking ability in comparative literature and cultural research.

4.CONCLUSION

Due to the limitation of foreign literature teaching period and teaching task, teachers can recommend selected foreign films to students for observation and appreciation in their spare time, and extend the close reading of films outside the classroom. After watching the film, students are encouraged to write appreciation or comments on the film and train their thinking and language ability, which can not only optimize the teaching effect, but also facilitate the development of students' practical skills. Can also use paper or the chance of graduation thesis writing course, stimulates the student to mobilize their knowledge reserves and aesthetic sensibilities, in literary works and films of discourse of crossover between thinking and explore the culture behind the text variation, complex associated factors such as politics, history, experience and comprehension to theoretical, systematic exposition, cultivate the students' academic thinking ability.

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Critical Discourse Analysis of Misleading Advertisements

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Abstract: Advertisement plays a pivotal role in our life, which influences our behaviors in different ways. Misleading advertisements are surely a typical social wrong, which calls for our detailed analysis to break down the disguise for a wise purchasing decision. Typical misleading advertising discourses are examined to come up with some possible solutions to improve the situation.
Keywords: Misleading Advertisement; Critical Discourse Analysis; Wise Decision; Salient Features

1. INTRODUCTION

We are living in an advertisement age. Advertisements permeates every corner of our life by means of T.V, billboards, newspapers, magazines, radios and some other possible communication means available for advertisers. Ruiz (2014) believes advertisement, as an important genre of social media and discourse, exists everywhere and put its influences on every one of us. The advertisements surely play an important role in helping people to reach the things they need. But it's also well-known that the false demand created by their exaggerating, flattering and misleading utterances would put the consumers in a very tough situation. In the social context of capitalism, the advertisements which exaggerate the uniqueness and function of certain products or services for the sake of biggest potential profit are not so uncommon. Such advertisements employ all available modern technologies to reinforce consumers' false consciousness in order to manipulate them, which surely lead to their irrational choices and decision in their consuming behaviour.

The essay focuses on the misleading advertisements and its effects on influencing consumers' decisions. As a commercial tool, the marketing strategies of advertisements surely revolve around on how to promote the highest possible sales and revenue. Advertising discourse of a product is one of the most convenient and powerful tools to reach potential customers (Kariyawasam and Wigley, 2017). Advertisements would employ all possible means to guarantee its success by combing all the important concepts of marketing which involve the knowledge in psychology, aesthtics, economics and sociology(Doborji and Hamed, 2016). Misleading advertisements play very crucial roles in seducing the potential consumers to purchase the advertised commodities at a higher price or an inferior quality, even the wrong products or less-wanted service (Kariyawasam and Wigley, 2017). The semiotic products of mass media like advertisement can change social practices (Tasmasbi & Kalkhajeh, 2013) and perceptions (Vahid and Esmae'li, 2012)

Advertisements generally are being studied on its relations to sales by exploring their original ways of packaging, unique labels, sensational press statements and pleasant customer experience etc. In recent years, research on deception effects of misleading advertisement discourses has been highlighted by some scholars who argued that the misleading discourses in advertisements are for the maximized benefits of sellers. (Faerber and Kreling, 2014; Xie et al., 2015). Misleading advertisements surely aim to persuade consumers to believe the products they intend to buy are the most rational and best alternatives for them. It's no wonder that consumers will suffer financial and emotional loss, if they are confronted with misleading marketing practice of different kinds (Sheehan, 2013). Even in the era of Internet, consumers still have relatively limited accesses to kick out products that are based on fraudulent means. Emotional, financial and medical loss is experienced by consumers when they are helpless, lonely and they are of low self-esteem (Weber, 2015).

The research focus of the article for misleading advertisement lies in its ways in seducing consumers and the falsehood can not be easily detected (Aslam, 2014). Hasan et al. (2011) argues that in some examples of fake advertisement, the claims are caused by lack of accurate information, inconspicuous information, truth, and expansive implications. As the Consumer Protection Act (2007 version) says: advertisements can be taken as misleading if they produce deceptive discourses which may lead consumers to purchase the products they might otherwise not. Advertisements are also considered false or misleading if important information that is crucial for consumers on decision-making is left out. "Misleading" is the misrepresentation of the facts and change resulting to misrepresentation results to unacceptable number of people that will get wrong information or make incorrect decisions (Doborji and Hamed, 2016). The data which can be collected for misleading advertising discourses may actually fall into various types, such as: visual advertising discourses on TV and adios, written advertising discourses on newspapers, magazines and posters, digital adverting discourses on shop signs, catalogs and big websites. To be more specific, the corpora can be a false claim or unmatched description about the features of a product whose color, size, shape, weight and producing date are not as true as advertised. The statement on how the products or service are delivered is misrepresented, such as free delivery is in the selling advertisement, but in fact, the free delivery goes with some conditions. In some cases, the given information is correct and true, but with crucial massages lost, the advertisements still fall in the scope of misleading advertising discourses.

Advertisement is actually a very competitive industry. That's why advertisers often need some creative ideas to attract consumers' attention and urge them to be

convinced by the ideas. Language is surely the most often used, just like Foucault (1975) suggested, great promises are best manifested with language. There are various kinds of misleading advertisement in terms of deceptive information. Photo bleaching is usually employed in commercials for products concerning cosmetic and weight loss. Example 1: Will you be one of the fans a body lotion whose advertising discourse says: "regular use significantly reduces body size"? Surely, a great many women would buy the trick! As a matter of fact, the producer, Nivea company, was asked to pay the fine up to $900, 000 in 2001 for the misleading discourse in its ads, and was required by the law to suspend its production of "Bio-slim Complex".

These adverts would picture some impractical beautiful results to consumers and produce an illusionary consciousness about the real abilities of the products. The advertising discourses of the products for losing weight would display some best pictures of some professional sportsmen. They are hired to demonstrate the "before and after" effects of using the weight loss products.

Based on the analytical modes of Fairclough (1992), the first dimension of discourse analysis aims at analyzing the textual features of discourses. Puffing is another common practice to overstate the worth of a product by employing some meaningless unproven terms or even over the manipulation of some experimental data. The commonest discourse examples are "the greatest of all time", "the best choice in the town" and "beyond words" etc. Medicine advertisements sometimes fall into this trick. Example Number 2: Listerine "Kills germs that cause Bad Breath, Plaque & gum disease Gingivitis". Listerine was stuck in big trouble for the reason that its advertising discourse claimed that the product could "prevent and cure sore throats". And Listerine was said to be as effective as flossing when it was rinsed to fight gum and tooth decay, which was, actually, not supported by clinical data. Pfizer was sentenced by law to put away its commercials and make its claims more accurate and scientific. Another good promise was proven to be wrong.

Discourse analysis from the perspective of social practice is built on the framework by Fairclough. Jorgensen and Phillips (2002:65) clearly point out Fairclough's approach is text-oriented concerning discourse analysis. Misleading illustrations is also a very common tactic employed by advertisers. Nowadays, more and more people are suffering from being too fat or even obesity. The literally common words like: "delicious but diet, low fat, sugar-free, healthy and good for you" are attractive labels many consumers may see on snack packaging. Example Number 3: Healthy, nutritious and quality food is always a top concern for young Moms to purchase as supplements to their babies. Enfamil, a famous milk powder producer, claimed it always tried to manufacture the best quality baby supplement. It claimed in its advertising: "Enfamil Lipil is clinically proven to improve brain and eye development". The huge claim made all the other brands of baby formulas inferior to the mentioned one.

There exists a special case in advertising discourse which uses the truth to mislead people. What it says is definitely true, however, it purposely excludes some key data or essential information which surely must be attached. It is technically named "half-truth", which surely will mislead people by the broken picture. Strictly speaking, half truths are not lies, but they are just as misleading. It is most often used inn political campaign advertisements. Example No. 4, Suppose Governor Bush is seeking for his another term, and we all know, during his last term, he tried his best to created three million jobs but the state also lost one million jobs for various reasons. His opponents would say in their campaign advertisements, "During Governor Bush's term, one million people lost their jobs!". Despite the fact that there are actually two more million people working for the state. Another good example can be: "Nine out of ten doctors advised their patients to take Yucky Pills to cure toothache." The hidden truth that they just interviewed about ten doctors and nine of them are employees in Yucky Company will never be mentioned.

Incomplete comparison is another salient feature of advertising discourse. For example: we all know there is a degree difference between better and best. "Better" means a certain item is compared to another items and it's superior in some way while "best" indicates the certain item is superior to all other items. That's why the terms like "better" and "best" can be meaningless without giving contexts. Some ad plays this trick and claims: "Our cold medicine is better" or "better than the leading brands". Few people can get a clear picture about "the cold medicine is better than what" and "what the leading brands can be". And inconsistent comparison is a quite similar trick as incomplete comparison. In the comparison advertising discourse, the strong points and the attributes where the commodity wins will be highlighted, producing an illusive impression that the commodity is the best choice in an all-round way. One good example in point is some e-commerce web sites. Many of them will list the different prices for a certain item on the website to ensure their consumers to get a best bargain. But they usually just list some prices for the searching item whose prices are higher than theirs, while they won't list the sellers whose prices are more competitive than theirs.

Messages in advertising discourses do guide consumers in making their decisions on what to buy (Hoek et al., 1997). If the consumers want to be free from the harm of misleading advertisements, they should first know some ABCs about the Consumer Protections Act in their own countries. And they should always bear in mind that sellers will try their best to maximize their profits in business and there must be some tricks if the price is lower than the normal price. And consumers must bear the trouble to go to different sellers for a right bargain. If possible, consumers should trust the quality branded products. Last but not least, they can turn to those who ever purchased the product for advice instead of trusting the advertisement immediately.

No matter what we comment on advertising discourses, the truth that can never be denied is that advertisement is a powerful tool in promoting the sales of a certain product. Another fact is that, as a powerful public media tool, advertisement can be employed for some evil purposes

without proper regulations. And the research on misleading advertisement discourse can help consumers and manufactures both. Because consumers can gain more knowledge in deciding the right commodities to purchase. And for the manufactures, the manufactures of good quality products will gain more chances to develop if the inferior manufactures can't be driven out of the market. The analysis just focused on the misleading aspects of advertising discourse. Surely, advertising discourses can play a positive role in promoting the development of a certain business. We need to have an all-round knowledge about the function of advertisements. What's more, the corpora can be collected in the analysis is just a small fraction of the whole picture. More work should be done to establish the corpora, which can easily be accessed for consumer's references.

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The Role of Chinese media in Shaping the Political Culture of Society

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Abstract: Recently, China has been showing the whole world its achievements not only in the economic sphere, but also in the sphere of culture. The country is undergoing a large-scale period of democratization and modernization. The economic reforms that China began about three decades ago have a huge impact on its traditions. They are also reflected in the political, cultural and economic spheres. The media and communications, thanks to these processes, have changed significantly in recent years. The media have become a stimulator of these processes, as they provide an important part of information exchange in modern society.
Key words: Media, Culture; Politics; China; Formation

1. INTRODUCTION

The current policy pursued by China is aimed at including it in the global information space. At the same time, China strives to preserve its national identity. In recent years, in order to strengthen the stability of its country, China has carried out a full-scale change in the activities of the media, which directly affects all layers of Chinese society. In this regard, the media have the greatest impact on changes in political culture.

The openness of Chinese society and modernization in politics have led to extensive changes in the field of political communication. Completely new principles and methods of political propaganda have emerged. Currently, there is a reassessment of values and a reform of political communications in China. It becomes more understandable for the Chinese society and, as a result, more effective.

The main goal of changing the work of the media in China is to create developed, functional, modern and effective civil and political institutions. This reform can significantly increase the efficiency and quality of international information exchange, as well as enrich the content of the media in the formation of the political culture of society.

The modern modernization of China affects not only the economy, but also the political system[1]. As a result, not only constructive cooperation between the authorities of all branches is slowly developing in the PRC, but also a public dialogue between civil and political societies is being established. Information activities of the media are very important and necessary in the life of every person, and they directly affect the development of personality[2]. People cannot be isolated from information and knowledge. Therefore, the primary role of the media is to disseminate information and knowledge[3]. The activities of the media have a great influence on the political, economic, cultural, moral and other aspects of people's lives[4]. The media should foster culture in all segments of the population by providing truthful, honest information to establish direct contacts between all members of society and to make political decisions based on the active participation of the entire society in shaping public consciousness.

High political culture is conscientiousness in presenting the point of view of a political opponent, the inadmissibility of substituting reliable information or distorting it in favor of any point of view[5]. A person has the right to receive reliable and truthful information, has the right to freedom of communication - this right is provided by television and radio, various information services[6]. Any resident of the country, be it a TV viewer, a reader of newspapers and magazines, a radio listener or an Internet user, should receive such freedom of communication. The state should not facilitate the emergence of two information systems: official information and idle rumors[7].

The media in China are called upon to protect the interests of the country's society. The Chinese media should become a modern authoritative institution that can shape the political culture of society[8].This is facilitated by the emergence of new forms of information transmission in China, more detailed descriptions of congresses of people's deputies have appeared, due attention is paid to critical analysis in journalism, and more professional interviews have appeared. The media are increasingly covering events in the field of education, corruption, economic development, the difference between the standard of living in the city and the province[9]. Each edition strives more and more to attract readers to the topical problems of the country. The Chinese media are developing mainly with financial support from the state, but in today's conditions of economic competition, the number of commercial publications is growing quite rapidly: Beijing Wanbao, Yangcheng Wanbao, Yangtze Wanbao, Xinmin Wanbao, etc. the number of articles on political and sociological topics, which was previously prohibited by the state censorship. We can say that the Chinese media have become targeted, meeting the political and cultural needs of various groups of the population.

In China's traditional media system, government departments play the role of both the drafter of the media law and the overseer of the law[10]. In addition, these institutions are also responsible for overseeing the implementation of the media organization law. This situation leads to a combination of political and regulatory functions, which makes it difficult to coordinate oversight and governance work. Therefore, the restoration of the regulatory system in this matter is crucial for the development of China's media industry. It is necessary to

strengthen the laws on the media and correctly determine the place of government for the development of the media industry[11]. Currently, in China, the government has two functions in the media development process. The government performs one function as a body of political administration and provides various public services for the media. And another function is performed by the so-called economic government, which plays the role of managing national assets [12].

For the full development of the media, China has adopted various administrative measures:

- development of policies, plans and standards in the media, including the policy of the program;
- obtaining an administrative license and approval in the relevant authorities for the opening of TV channels, radio stations, the installation of satellite dishes and other structures;
- annual control over the activities of radio and television stations;
- creation of a system of punishments for violators of laws in the field of mass media, up to termination of broadcasting, revocation of licenses, confiscation of illegal income and illegally obtained property.

Such measures by the state have become an important way to strengthen the position of the media in the media market. In China, the media industry combines economic and cultural components. The economic dimension means that the media in China can make money. And cultural dimension means that the content of the media can and should influence the worldview of people.

Since 2010, the Chinese media market has become more successful and successful in mastering social media. They began to gain more and more popularity among potential users. Information and communication technologies change the nature of a person's work, his social ties, communication between people. Currently, the Internet has become a medium not only for interpersonal interactions, but also in its vastness, political activity is actively conducted. The Internet has become a modern, high-tech tool, practically a space for an intellectual, financial and social platform. In the future, the Internet space may well become a field for the harmonious and even development of mankind.

In modern China, new information technologies and resources such as the online magazine and the blogger web service have become one of the most important sources and channels of information. All kinds of published material in Chinese blocks often raise a completely more real discussion among Chinese internet users.

In online media, forums and guest books are popular, allowing website visitors to engage in discussion with other members of the audience. The widespread use of these means of organizing interactivity is due to the fact that the Internet audience is increasingly guided by two-way communication. This gives the user the motivation for two-way communication, the ability to exchange messages, knowledge and emotions.

The modern Chinese Internet community is a unique social sphere in which social communities of users are connected, the level of political awareness of the community members of their own interests is growing[13]. As a result, the level of their general and political culture is also growing, which makes new increased demands on the organization and implementation of the policy of forming the modern political culture of the population for the activities of the party and the state. The structure of public opinion is complex and diverse, and the process of its formation is no less complicated. Ideas, penetrating the consciousness of the masses, interact with feelings, emotions, moods, traditions, the will of people. The media fulfill their political, managerial role in the political system of society by becoming a mediator between people's consciousness and their practical activities, as well as through discussion, support, criticism and condemnation of various political programs, platforms, ideas and proposals. Yes, the internet is booming, but television media are still the largest media in the Chinese market. Television workers carefully study the interests of the audience, work on the form of presentation of information, programs and monitor the response of viewers to a particular program in order to make the program even more successful and interesting.

Reflecting on the rapid changes that have taken place in the Chinese media in recent years is the foundation that needs to be developed in Chinese journalism. It is necessary that the media have the opportunity to create a developed, modern, functional and effective media system with a solid theoretical, material and technical base, trained cadres of journalists, editors, and other specialists in order to participate in the implementation of the policy of forming a modern political culture of the population ... Of course, the implementation of the reform will significantly improve the quality and efficiency of the activities of the Chinese media, including both for international information exchange and for a more active implementation of the policy of forming a modern political culture of the population within the country.

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An Analysis of The System of Chinese Contemporary Art History Theory Based on The Continuation of Traditional Painting Study Context

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Abstract: In the past art development process, our country has made certain artistic achievements, has created our country certain artistic height. In the future development process, but also the need to adhere to the traditional painting context to continue to pass on. In the analysis of this paper, on the basis of this, a systematic analysis of China's contemporary art history theory system is carried out, in order to stand in a new perspective, to reflect on the future development of China's art, to ensure that China's art circles, be Able to continue on the path of inheritance and innovation.
Key Words: Traditional Painting; Contemporary Art History Theory System; foreign culture; Art; Oil Painting; Theory Circle

1. THEORY AND CREATION CO-EXIST IN THE INTERACTION

The development of the field of art, to a large extent, will be affected by the development and transformation of the society and economy at that time, which requires effective thinking on the development and social construction of art in the process of future development and construction, with this effective exploration of the development of innovative ideas in the field of art, so that China's art field, especially the painting field, can inherit the traditional painting on the basis of higher artistic value.

In the 1980s of last century, in the field of art theory, it was first put forward that our country was facing a very important crisis, which also caused a heated discussion in the society at that time. And in this intense discussion process, but also to the fine arts creation practice, the fine arts theory research, has had the quite profound influence. And now the history of art development, China's art theory system, under the continuous impact of art creation, continuous innovation, in order to further promote the prosperity of China's art theory.

In the early days of liberation, . Some Chinese painters still think that Chinese painting is a kind of art form of Literati in feudal society, which can not serve the social life well. However, in the subsequent literature study, it was explained. Some people think that traditional Chinese painting is a kind of painting for the rich class service, which can not be accepted by the masses, and even some artists have turned to painting. This highlights, for China's traditional Chinese painting, really in the process of people's understanding, facing certain problems. For example, Chinese painting can not reflect the new life,

Chinese painting and Western painting of the scientific nature and characteristics of the lack of understanding. At the same time, in the process of inheritance and inheritance of Chinese painting, there is no in-depth study and thinking. Therefore, in the future development, we need to be able to present the form of expression of traditional Chinese painting, can effectively serve the current social environment, in order to promote the development and construction of China's art sector.

In the early days of liberation, China's "Art" magazine, published a series of Chinese painting on the progress, the improvement of the problem articles. In this paper, it is pointed out that in order to achieve the effect of improvement in the current planning and development process, two issues need to be considered effectively. First of all, in the face of conservatism, among conservatism, it is considered that Chinese painting does not need to be improved. Once Chinese painting conforms to the development and changes of the Times, it will lose the artistic quality of Chinese painting, and at the same time, it will make Chinese painting in the process of development, can Not have the effect of inheriting the traditional culture. The other is the nihilism. Some people believe that the methods used in the creation of Chinese ancient paintings are rather archaic and need to be developed in an advanced way, can effectively use some of the advanced scientific methods for the optimization and improvement of the drawing. In the eyes of these people. Some of the western painting perspective, Chiaroscuro, Anatomy and other processing methods, are based on a scientific basis, in order to carry out traditional Chinese painting techniques. As a result, in the painting industry has been more intense discussion.

2. THE ABSORPTION AND REFERENCE OF FOREIGN CULTURE

In the process of studying such problems, we need to make clear the important core content of the development of art in our country, that is, we need to promote the development of art in our country based on the dual function of theory and creation. In addition, we also need to be able to effectively influence and complement Chinese and Western painting each other, and be able to draw on the advantages of western painting, so as to effectively enhance their own advantages and make up for their disadvantages, aCHIEVE LONG-TERM Development.

After the Western conception of Art History and the

Western painting theory entered the field of our country, our country can effectively promote the art theory, from the original classical form, gradually into the modern form. Therefore, from the perspective of Art of Europe and methodology, it is necessary to conduct detailed research on a case-by-case basis, so as to effectively enable Chinese art history theories, in a reasonable environment, the researchers carried out an in-depth anatomical analysis. This kind of research method, but also under the comparative significance art research, has obtained the certain research result. For China's fine arts, the characteristics of the study, but also in the process of such research, to obtain certain results.

In the process of the construction and perfection of the art theory system in our country, it involves more kinds of art and makes the art system more complete and concrete. For example, the Chinese art, which has been compiled by many scholars, deals with many art fields, such as sculpture, folk art, applied arts and so on. At the same time, the mainstream research areas: Chinese painting Color Research, the history of aesthetics, the history of materials, as well as the history of criticism, etc. . In the past 20 years since the beginning of this century, people have made a comprehensive study of the current Chinese fine arts system from different perspectives, and many new fine arts categories have also appeared, it has effectively promoted the development of art theory circle in our country.

In such a research process, the research direction of China's arts festival is gradually planned and unified. For example, in the research process of Chinese painting, need to let the creation of the time, not only need to have a closer effect with life. At the same time, we also need to ensure that in the creation, can effectively reflect the current stage of society, new characters, new things. Moreover, from the point of view of painting creation, we need to effectively learn from some realistic creation techniques in western painting, so that we can effectively innovate and develop Chinese painting in the actual creation process, can play a certain performance effect to the present social environment.

As for oil painting, which is a kind of foreign painting, under the influence of the long-term artistic development in our country, it has achieved relatively long-term development and can effectively reflect the traditional cultural and artistic value of our country when creating, with this in today's art, the formation of the Chinese oil painting faction. In the early Chinese oil painting creation process, basically is uses the realism creation way, by this may very well carry on the performance to the revolutionary history, the socialist construction as well as the hero figure mold. At the same time, in the process of oil painting creation, it is necessary to effectively analyze the artistic spirit of the Chinese nation, as well as the characteristics of some forms of language, so as to make the public understand and identify with the art. And, for this kind of oil painting nationality's research, also has carried on certain subject matter expansion. After the founding of the People's Republic of China, oil painting long-term creation paid attention to conforming to the

historical revolution. In the current development of oil painting, it is mainly about the transformation of the current social construction and the in-depth study of some oil painting theories, this shows the unique development of oil painting in China.

3. GIVE EQUAL WEIGHT TO INHERITANCE AND INNOVATION

As far as the ancient Chinese painting science is concerned, it is an organic whole. Therefore, in the process of research, it is not only a study of art and culture, but also in line with the basic needs of cultural self-confidence at the present stage, in order to effectively in the current social development, to be able to establish a modern historical system. And for some art historians of the research process, based on the predecessors pay attention to the foundation, has made certain research results. In the system of Chinese painting in China, the data has been re-compiled as a whole, which has become a different form of data in China, in order to provide more information in the future research process of Chinese painting. At the same time, in China's art theory, but also with the development of the Times, the theory has been constantly updated. But in the recent years development process, appears more and more fine arts critic, is carrying on the curatorial aspect research and the practice. And in the process of practice, but also constantly with a variety of experts and scholars exchange and research, in order to effectively in the actual curatorial process, play the role of application.

Since the beginning of the new century, the traditional Chinese painting has been developing continuously. In the theoretical circle, it has also carried out corresponding research and analysis on the establishment of the Chinese art cause at the present stage, compared with the art theory system in the early stage of reform, it shows a more confident direction of art development, but in the process of development, there is a certain degree of lack of understanding, so in the process of art criticism, that can lead to Aphasia. The emergence of this problem is always due to the lack of in-depth research in this field, and in the process of carrying forward China's artistic spirit, there has always been a serious lack of awareness. And the actual practice is not enough. Compared with Chinese traditional culture, Chinese painting system needs to occupy an important role in order to effectively let the further development of China's aesthetic system, can play a fundamental and guiding role.

Based on the above analysis, it is found that in the process of the establishment of China's current art system, we need to pay attention to the effective inheritance of the value of traditional art, and then, in the process of development, can Be very good on the current stage of art theory, Innovative Research, so you can promote the development of art system, but also can play a good role in the inheritance of traditional culture. In the long-term theoretical research work, some contemporary young scholars and painters, basically all come from the art campus, and in the course of studying history theory, they have a good understanding of the traditional Chinese painting art, it is far from a deep understanding of the

Western art system. As for cultural tradition and traditional culture, they are two different theoretical perspectives. As for cultural tradition, its internal core ideas and internal laws are unchanging, in time, the changes of the times and the progress of history, the truth is always the truth and will not change with people's consciousness. Therefore, in the process of inheritance and innovation of traditional culture, it is necessary to effectively combine the current social background, effective analysis and evaluation based on the historical context. At the same time, there is also a need for some will not change the scope of the corresponding in-depth thinking and analysis. In the process of art development, it is necessary to avoid the situation of being too conservative, so that we can effectively innovate and think about the scope and approach of art. In the future development of Chinese art, it is based on a culture with Chinese characteristics.

At the same time, in the field of innovation, we also need to be able to carry out comparative analysis based on the differences between Chinese and Western internal cultures, so that some new things can be added to the system, thus replacing some excellent historical culture. But in our traditional culture, not all of the traditional culture will be handed down, we need to be able to attach importance to the inheritance of excellent culture, so that we can meet our own development needs in our future construction and development, in order to walk out a way in line with the development of China's art, in such a way, continuous inheritance and innovation in the form of art and connotation.

To sum up, in the course of the analysis of this article, it is mainly based on the system of Chinese Contemporary Art History Theory which continues the context of traditional painting study. It is necessary to be able to further conform to our country's historical mission in the future development of the art world, so that China's art system can continue to improve and enhance the artistry.

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Problems and Countermeasures in the development of Regional University library Alliance in Henan Province-- Taking Luoyang University Library Interlibrary Union as an example

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Abstract: The Inter-library alliance of Luoyang University libraries is a typical example in the development of henan Provincial regional university library alliance, which is of great significance to realize resource sharing, mutual benefit, improve the guarantee level of literature, and promote the development of the university library in Luoyang. This paper analyzes the existing problems in its development process, and puts forward some countermeasures and suggestions to make its sustainable development.
Key words: University Library; Alliance Sharing

1.THE SIGNIFICANCE OF THE ESTABLISHMENT OF LUOYANG UNIVERSITY LIBRARY INTERLIBRARY ASSOCIATION

Since the 1990s, under the new situation of the rapid development of information network technology, how to realize the co-construction and sharing of information resources has become a new problem faced by university libraries. Under such circumstances, university library alliances with the purpose of "joint participation, co-construction and sharing, and mutual benefit" have been established and developed rapidly. Henan University has also made some attempts in the construction of library alliance, and officially launched the construction of Henan Higher education document guarantee System (HALIS) in 2001. The typical establishment of local university library alliance is luoyang University Library Interlibrary Alliance. This paper analyzes the problems encountered in the development of the inter-library alliance of Luoyang University libraries, and puts forward some concrete countermeasures and suggestions, in the hope of making the alliance develop better and faster, and providing some reference and enlightenment to the university library alliance of other regions.

So-called university library alliance is to some university library as the main body, based on computer network technology, the joint relevant literature information resource system, based on the mutual recognition agreement and contract, in accordance with the unified technical standard and working procedure, through certain literature information transmission structure, perform the function of one or more of the cooperation of the consortium.

To improve the level of luoyang university library document resources guarantee and realize the resource sharing, three universities of luoyang, henan university of science and technology, luoyang normal college library and the luoyang institute of technology library conform to the trend of The Times and their own development needs, in the morning of April 29, 2010, held in luoyang in henan university of science and technology of university library interlibrary cooperation start ceremony, and successfully signed three school library interlibrary cooperation agreement, marking the luoyang university library composed of three school library interlibrary alliance was formally established.

Luoyang university library interlibrary union was founded ten years, we adhere to the principle of ", and sharing ", the integration of the three colleges and universities paper books, e-books, databases, such as the literature and information resources, the establishment of a unified literature and information resources retrieval platform, has the resources to coordinate construction, electronic resources group procurement, storage and operation, interlibrary loan and document delivery work with joint cataloging, personnel training, consulting and other functions, eventually build up a unified literature information resource platform.At present, 5.5 million paper books, 2 million electronic books, more than 30 Chinese and foreign language databases and "Reading show" database literature and information resources have been shared among the three universities.Three interlibrary loan school service object for college teachers, researchers and more than hundreds of ordinary full-time in school-based, specialized subject, service content is mainly for the three colleges and universities hold "luoyang college interlibrary loan card" readers with paper books borrowing and reading each, database browsing and document copy and transfer service.

Luoyang university library interlibrary alliance to build and run successfully, greatly improve the utilization rate of literature resources of university library by three, saving the cost of the literature information resource construction, to realize the resource sharing, mutual reciprocity and mutual benefit, improve the level of literature guarantee, to promote the development of university library in luoyang has an important meaning,

and other areas in henan university library alliance formed to provide the valuable experience, which can promote the further development of the national university library alliance and expand.

2. PROBLEMS EXISTING IN THE DEVELOPMENT OF INTER-LIBRARY ALLIANCE OF LUOYANG UNIVERSITY LIBRARIES

As a typical form of regional university library alliance development in henan province, luoyang university library interlibrary union in resource sharing, through collective purchasing to reduce the economic burden of individual members of the house, and personnel training to improve the professional technique to promote the cooperation between the members of the house, improve work efficiency and service quality, expand the scope of the service object, but there are some problems in the development process:

2.1 Lack of funds for alliance development and the construction of database resources for joint construction are few and backward

In university library union, database is the core way of information organization and information storage in library integrated management system.However, in the process of long-term development, the three colleges and universities due to the different management system, most of the money into the development and construction of our school is in the center, so that less money into the alliance, which can lead to alliance of database construction speed is slow, a single database sort, in addition to the bibliography database, response document content guidelines databases and full text database is too little, even buy database is not up to date, have a plenty of relatively backward and outdated, far cannot satisfy the three long-term need to the school library to a Shared resource.In addition, the lack of funds has also affected the internal union cataloging, online network, the establishment of coordination institutions, etc., seriously restricted the pace of the alliance information construction and the construction of literature resources sharing.

2.2 The coverage of the alliance is narrow, the sharing consciousness is weak, and there is a lack of union-coordination management

Up to now, the inter-library Alliance of Colleges and universities in Luoyang has provided convenience for teachers, students and readers of the three universities. However, due to various reasons, the scope of the alliance is relatively narrow, and it only covers the libraries of the three universities in Luoyang at present, which affects the continuous development and growth of the alliance.Even though, the library of henan university of science and technology, luoyang normal college library interlibrary loan, luoyang institute of technology library management method "in henan university of science and technology set up three school library interlibrary loan service center, clear contact person, contact phone number, set up a dedicated E-mail address, fully responsible for the management of three school interlibrary cooperation and coordination work.Member libraries have also established their own inter-library cooperation Services Department, which is responsible for their inter-library cooperation.But

three colleges and universities have long fragmented in terms of library management system, from management to construction not form a unified standard and good communication, coordination and cooperation mechanism, and communication links seldom, Shared awareness is weak and lack of unified coordination and administration, borrowing the degrees of freedom and circulation mechanism is not perfect, low utilization of literature resources sharing.For example, undergraduate students of Henan University of Science and Technology can borrow five books from the library of the university, but after obtaining the inter-library cooperation card, they can only borrow two books from the libraries of the other two universities, and the borrowing quantity is limited.

2.3 Lack of high-level computer talents to manage and maintain the operation of the alliance system

To realize document resource sharing, the inter-library alliance of Luoyang University needs high-quality information system, and high-quality information system needs high-level professional and technical personnel to develop, build and maintain, among which talent is the key.However, at present, the inter-library Alliance of Luoyang University lacks high-level computer talents who are professional and skilled in using modern technology. Once the system of one branch of the alliance fails, the sharing of literature resources will be severely restricted and the normal operation of the entire alliance will be hindered.

3.COUNTERMEASURES TO PROMOTE THE SUSTAINABLE DEVELOPMENT OF THE INTER-LIBRARY ALLIANCE OF LUOYANG UNIVERSITY LIBRARIES

The problems in the process of the development of the Inter-library Alliance of Colleges and universities in Luoyang seriously hinder the sustainable development of the construction of the inter-library Alliance of colleges and universities in Luoyang, how to make it full of vitality, healthy and orderly development, has become an urgent issue.In view of the above problems, the following countermeasures are proposed:

3.1 Change ideas and improve the understanding of university library union

The biggest ideological obstacle to realize resource sharing is the weak consciousness and lack of overall concept of library staff.Staff, therefore, must change the traditional management service concept, in the union on the basis of further strengthen interlibrary cooperation, enhance the consciousness of the literature resources sharing, the implementation of the alliance of ideas, pay attention to the contact and communication with the user, the user's information behavior, try to meet the needs of users, the focus from internal to external, increase cooperation with union outside of information management, strive to create a new service concept and service patterns under the network environment.

3.2 Increase capital input and strengthen the construction of database

Database construction and sharing is an important part of information resources in the development process of alliance, and the co-construction and sharing of literature

information resources must have strong database support.Through the cooperation and exchange between the alliances, on the one hand, the use right of each other's databases can be shared to expand their information resources, on the other hand, the development and use cost of databases can be reduced to a certain extent.Therefore, more funds should be invested to organize a group of professionals to build bibliographic database, literature database for two or three times, full-text database and online expert system database, etc., and foreign full-text database can also be introduced if funds permit.In addition, the member libraries in the alliance can also be strengthened to build their own characteristic data resource database, establish characteristic collections, and realize the "unique value" of resources in the alliance, so as to make the resources owned by the alliance more comprehensive, rich and able to serve readers more comprehensively. At the same time, a complete document information resource guarantee system, bibliographic information system, document transfer system, inter-library loan system and reference service system should be established to ensure the maximum of resources shared by the alliance.

3.3 Strengthen personnel training and cultivate high-level talents

Under the new situation of library alliance, the sustainable development of Luoyang University Library Interlibrary Alliance is inseparable from high-quality staff. Library staff should not only be familiar with the structure of library collection resources, skilled use of library resources service for readers, but also deal with members of the museum's collection resources, service mode, working method in-depth understanding and grasp, only in this way can truly play an overall advantage of the alliance, to better meet the diverse needs of readers of information resources. Therefore, the alliance should regularly carry out a series of trainings on the comprehensive quality, basic skills and professional skills for the staff of each member library, and carry out exchange activities within the alliance to learn from each other and make progress together. At the same time, it is necessary to train or hire some high-level computer professionals to serve for the alliance in order to maintain the normal operation of the alliance's information system.

3.4 Establish a unified standard alliance system

The standardized and standardized system is the necessary premise and important guarantee to realize the resource sharing in the Inter-library Alliance of Luoyang University libraries.Under the union system of unified standards, member libraries can adopt standardized management and service methods through the implementation of unified standards, and information resources can also be organized in a unified format, so that the integration of information resources can be achieved smoothly.Therefore, the long-term development of Luoyang University library Interlibrary Alliance cannot be separated from the establishment of standard and standard system, because this will also be the trend of the future development of the university library Alliance.

The establishment of the inter-library alliance of Luoyang university libraries has become an inevitable trend to realize the document resource sharing of Luoyang University libraries, improve the overall core advantages of the library, produce synergistic amplification effect, and expand the service space and time.Therefore, we must vigorously strengthen the regional university library alliance, exert its influence and promote the overall development of other regional alliance and even provincial and national university library alliance.

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Influence of Aerobics Exercise on Physical Fitness of Female College Students of Non-physical Education Major

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Abstract: In order to understand the changes of physical fitness of non-sports major female college students before and after taking part in aerobics exercise, 100 non-sports major female college students in Zhoukou normal university were selected as experimental subjects, and they were trained for eight weeks three times a week. The data of balance test, vital capacity measurement and standing long jump before and after the experiment were compared and analyzed, and it was concluded that the results of physical health assessment of non-sports major female college students before and after taking part in aerobics exercise were significantly improved, and their cardiopulmonary function was significantly improved, which proved that aerobics exercise has a great influence on the physical fitness of non-sports major female college students.
Key words: Aerobics; Non-Sports Major Female College Students; Quality

1. RESEARCH PURPOSE

Nowadays, college students' physique is declining, especially female college students. Female college students are an important group, and their physical strength is directly related to the future of the motherland. Most of them have more theoretical courses, less physical activity and seldom physical exercise. Most girls don't like some competitive sports, such as basketball, football and so on, which girls usually have little contact with. Aerobics is an activity that is entertaining, highly ornamental, graceful, rhythmic and capable of expressing one's feelings. It is based on aerobic, characterized by health, strength and beauty, and is mainly based on basic gymnastics, with various styles and movements. Therefore, aerobics, as a fashionable and leisure sport, is one of the main courses favored by female college students in physical education at present. In recent years, aerobics has become more and more popular in China, especially for female friends, who are not only cheerful and energetic aerobics, but also elderly aerobics, such as the popular square dance aerobics, which is deeply loved by middle-aged and elderly people. Aerobics is a kind of sports that integrates gymnastics, fitness, music and dance. It is a new type of sports that achieves fitness by using bodybuilding equipment or exercising with bare hands. Following the beat of music, it can make people forget their worries, not only achieve the purpose of keeping fit, but also cultivate people's hearts, promote their interest in learning aerobics, and deepen their knowledge and understanding of aerobics in the learning process.

2. RESEARCH OBJECTS AND METHODS

2.1 research object

The research object of this paper is the research on the influence of aerobics on the quality of female college students, and the investigation object is the female students who have no aerobics training experience in non-sports majors in zhoukou normal university. 100 students who met the requirements were screened, and all the subjects volunteered to take part in moderate-intensity aerobics exercises three times a week with the help of teachers.

2.2 research methods

2.2.1 method of documentation

Through the China Knowledge Network and the library, the domestic literature related to the research is consulted and studied, which provides a certain theoretical basis for the topic selection and theoretical analysis of this research.

2.2.2 experimental method

With the help of teachers, 100 students who are screened out to meet the requirements will do moderate-intensity aerobics exercises for eight weeks three times a week, and record the measured values before and after aerobics exercises and analyze them.

2.2.3 measurement method

With the help of zhoukou normal university's equipment and tools, the female college students are measured and evaluated at different stages. It includes the measurement of standing on one foot with eye closure, vital capacity, standing long jump, grip strength, sitting forward flexion and 50-meter sprint.

2.2.4 mathematical statistics

Statistical software SPSS12.0 was used to statistically process the measured data, and three groups of data were recorded before, after and after the experiment.

3. RESULTS AND ANALYSIS

3.1 Influence on Balance Force

If you want to analyze the influence of aerobics on balance force, you can react to balance force by closing your eyes and standing on one foot. When measuring, the subject closes his eyes, his hands droop naturally, and his body relaxes. Select the most powerful foot to stand on one foot, and start timing. If the subject is displaced, stop timing. This time period is the persistence time for the subject to close his eyes and stand on one foot.

Closing the eyes and standing on one foot is the main index to measure the balance of human body. Table 1 shows that after eight weeks of moderate-intensity aerobics exercise, the time for the subjects to stand on one foot after eye closure has been greatly improved on the

original basis, indicating that the balance of female college students can be improved after aerobics training. After pairwise comparison, it is found that after four weeks of training, the time that the subjects can persist is obviously longer than that before training, and the effect after eight weeks of training is obviously higher than that after four weeks of training. After eight weeks of training, there is still a big difference between the time spent by the subjects and the time needed before training. It can be concluded that compared with before, during and after training, the effect of eight weeks training can improve the balance of the subjects. In order to better improve people's balance ability, we need to make unremitting efforts and exercise, and do some auxiliary exercises, such as Yan-style balance, leg-hooking upright, squat, etc., as long as we can pay attention to these methods subconsciously in our daily life.

Table 1 Influence of Balance Force on Female College Students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Close your eyes and stand on one foot	20.32±4.34	21.794±.86	23.566±.59

3.2 Influence on Cardiopulmonary Function

To study the influence of aerobics on heart and lung function, we can measure vital capacity, step experiment and so on. In this test, we will choose the method of measuring vital capacity to reflect the influence on heart and lung function. 100 sterilized vital capacity blownozzles were selected. When measuring, the blownozzles were inserted into the measuring position of the vital capacity instrument, and the subjects took a deep breath and then blew as much as possible, so that the numerical range of vital capacity could be measured.

Table 2 Changes of vital capacity (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Vital capacity (mm)	2497.50±300.53	2518.56±317.26	2689.66±326.86

Vital capacity is the maximum ventilation capacity of one breath, which can reflect the potential ability of respiratory function in a certain sense. A person with large vital capacity generally has better cardiopulmonary function and healthier body, that is to say, the better the health, the greater the vital capacity. The vital capacity of an adult woman is generally about 2500-3000 ml. It can be clearly observed from Table 2 that the vital capacity indicator of female college students who participated in aerobics exercise for eight weeks has changed significantly. According to the survey data, with the increase of exercise time and number of exercises, the increase of vital capacity in the last four weeks is higher than that in the first four weeks. The results show that after eight weeks of aerobics exercise, the vital capacity of female college students is improved and the level of cardiopulmonary function is obviously increased, which indicates that regular aerobics exercise can have a good impact on the cardiopulmonary function of female college students.

3.3 Impact on explosive power

Aerobics can be divided into many types, including competitive aerobics, mass aerobics, performance aerobics and so on. In performing aerobics, it is necessary to show the audience the aesthetic feeling and the control of certain movements. To achieve this strength, it is necessary to have a certain explosive force, and the explosive force directly affects the aesthetic feeling of the whole set of aerobics. If the explosive force is weak, the whole aerobics dance gives people a soft feeling, which does not reflect the joy and music that aerobics should have.

Table 3 Changes of explosive force of female college students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Standing long jump(m)	1.58±0.12	1.63±0.15	1.66±0.18

Standing long jump is an index to reflect the strength and explosive power of lower limbs, which is mainly accomplished by waist and abdomen strength and the strength of legs to push the ground, which requires a certain degree of cooperation and coordination. This study shows that regular participation in aerobics can enhance muscle strength and improve the elasticity of tendons, ligaments and muscles, thus developing human strength and explosive power. Table 3 shows that after two months of aerobics exercise, the explosive power of the subjects has been improved. During the training period, the explosive power of the subjects is improved by practicing the basic steps of aerobics and quality training. Under the guidance of the teacher, after eight weeks of exercise, its explosive power has increased significantly.

3.4 Influence on Upper Limb Strength

In the process of aerobics exercise, sometimes some difficult movements are needed, such as lifting, right-angle support and so on. All difficult movements require a certain amount of arm strength. These require long-term and high-intensity exercise and professional training to present the difficult skill movements perfectly to the audience. This is also the need for us to persevere in aerobics exercise for a long time, from slow to fast, from easy to difficult, from simple to complicated, and during the training period, we also need to carry out physical training for the development of upper limb strength, in order to achieve the desired results.

Table 4 Changes of grip strength of female college students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
grip(kg)	26.10±2.58	26.13±2.67	26.14±2.54

Grip strength is mainly used to test the strength of people's upper limbs. Table 4 shows that after eight weeks of moderate-intensity aerobics exercise, there is no obvious change in the grip strength data of the three groups of data, which shows that the grip strength can not be improved obviously under short-time training. Without the help of external forces, aerobics has basically no effect on the strength of upper limb muscles, so it is possible to increase the practice of light equipment while practicing aerobics. Or do quality exercises after exercise, increase push-ups

or squat exercises with hand-held cleaning equipment, so as to achieve the effect of upper limb strength exercise for female college students and develop the defect of insufficient upper limb strength.

3.5 Influence on Flexibility

Most sports require warm-up activities to make the body warm and improve the flexibility of the body. At the same time, it is also to prevent injuries and avoid causing injuries. The stronger the flexibility of the body, the more it can reflect the soft beauty of music and aerobics, and the more artistic charm.

Table 5 Changes of flexibility of female college students (N=100)

	Before experiment	the Four weeks later	Eight weeks later
Sit and reach(cm)	14.2±4.1	16.3±3.8	17.2±3.9

The flexibility of students is tested by testing the flexion of sitting body. The better a person's ligament is, the better his flexibility is, and the greater the range of movement of each joint is. In order to improve flexibility, we must first pull the ligaments. In aerobics, warm-up activities are very important. When the subjects get hot or sweat slightly during exercise, they should stretch each joint and lengthen the ligaments, which will play a positive role in coordinating the body, improving skills and preventing sports trauma. From the data in Table 5, it can be observed that the flexibility of the training effect after four weeks has made rapid progress, indicating that the female college students who did not exercise flexibility before exercise, as long as they exercise a little, there is still much room for improvement; However, after training for four weeks, aerobics exercises can still make progress, but the space for progress is obviously lower than that of the previous four weeks. From these data, it can be shown that during aerobics exercise, the ligament effect in the early stage will be obvious, but on the basis of training, there is progress but lower than that in the early stage, which requires us to pay time and effort before we can make some difficult movements such as horizontal split, vertical split and split leg jump. Therefore, we should often take part in physical exercise and practice aerobics, which can not only keep the flexibility of the body, improve the coordination ability of the body, but also ensure the health of the body and cultivate the temperament of female college students from the inside out.

4 CONCLUSIONS AND SUGGESTIONS

4.1 Conclusion

1) Aerobics can not only make our life colorful, but also promote the healthy growth of the body.

2) Aerobics has a wide range of applications, both young people and middle-aged and elderly people are loved by everyone, which lays a good foundation for promoting comprehensive fitness.

3) The all-round development of female college students is the yardstick of human liberation and progress, and female college students' participation in physical exercise is the basic content of promoting the all-round development of female college students. This paper makes a comprehensive analysis of female college students'

participation in aerobics to improve their physical quality, and finds that the coordination ability and flexibility of contemporary female college students' body have increased after participating in aerobics exercise.

4) Exercise can improve their heart and lung function. Aerobics can obviously improve the explosive force, flexibility and balance of female college students, while the strength and speed of upper limbs have not improved significantly, indicating that aerobics elective courses still have shortcomings in the all-round development of the body.

5) Through the comparison and analysis of data, it can be clearly pointed out that aerobics exercise has a great impact on female college students' health, and aerobics exercise can also bring students a good mentality and relieve their worries, so as to better achieve the effect of entertainment.

4.2 Suggestions

1) The survey has clearly shown that aerobics is a very suitable sport for female college students, but due to the limitations of study and lack of suitable sports venues, most female college students cannot stick to it well. Schools should offer more aerobics courses, participate in aerobics associations or aerobics clubs and interest groups according to their own conditions, and hold various competitions to improve female college students' interest in learning.

2) Increase the input of sports funds, actively build some small venues, and set up aerobics halls and shape rooms in the gymnasium; Speaker, multiple mirrors; Provide a convenient and multifunctional exercise room for female college students.

3) It is suggested that in the teaching of aerobics, the physical grip strength of college students can be increased appropriately. For example, dumb bell exercises, push-ups, pull-ups, etc.

4) To strengthen the aesthetic education of female college students, aerobics exercise can not only achieve the effect of losing weight and shaping, but also exercise to ensure their health, which plays a great role in improving their physical quality. In addition, by exercising aerobics aerobic dance, it can also cultivate the temperament of female college students from the inside out, making students more confident.

5) To improve students' speed of 50-meter dash properly, we can make a certain plan and strengthen the training intensity through periodic and regular practice, which requires a certain degree of perseverance and hardship to persist and achieve the desired effect.

6) More small-scale aerobics competitions with rich contents should be carried out to promote the development of aerobics, so that more students can join in physical exercise and step into the ranks of fitness.

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Current Situation, Influencing Factors and Improvement Strategies of Rural School Development in China

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Abstract: Rural schools refer to the schools in towns and townships and the following areas. Influenced by the general background of China's social transformation and development, the wrong understanding of all sectors of society, various policies and management systems, low social recognition of teachers and lack of confidence in their own development, rural schools in China are faced with such survival dilemmas as hollowing out and urbanization. In order to solve these problems, the improvement strategies of rural school development are discussed mainly from two aspects of government and school.
Key words: Urbanization; Hollowing out; Endogenous model

1. RURAL SCHOOLES IN THE GAP TO SURVIVE

With the advancement of China's urbanization process and the adjustment of the layout of rural primary and secondary schools, rural schools and their development have become the focus of China's education policy. By referring to the literature of rural school development from 2015 to 2020 and reading relevant Chinese policy documents in CNKI Journal, it is found that the basic trends of rural school development in China are rural small-scale schools, rural boarding schools and rural weak schools. There are two modes in the development of rural small-scale schools: one is the school consortium based on network cooperation, that is, the consortium between a large-scale school or a central school and a small-scale school;

The other is the village school alliance, namely the rural school development Alliance or the rural small-scale school alliance, which is established by the nearby village school and the teaching point to solve the resource poverty. Rural boarding schools, the policy document called the township boarding schools. Weak schools in rural areas generally fail to meet the standard that they should normally have. Weak schools in rural areas usually have weak conditions, inefficient internal management, poor teachers, poor social reputation, and are located in remote areas with inconvenient transportation and information.

In order to adapt to the changes of rural social development, with the continuous change of relevant policy documents in China, the development of rural schools has gone through the process of cancellation, reservation and support for development, which can be said to survive in the gap. Under the influence of the standardization construction system of Compulsory education schools in China, compared with urban schools, the campus area, experimental equipment, school funding and other hardware of rural schools are gradually guaranteed. However, there are still many problems in the development of rural schools.

There is hollowing out of rural schools. The hollowing out of rural school development is the general description of the academic circle. Existing literature and rural school development practice show that the size and number of rural schools are decreasing due to the shrinking of students and classes. Rural schools are relatively weak in development, with weak teachers, few and poor students, small class size and smaller school size. In some places, there are even single-person schools and empty shell schools. As Mr. Fan describes it, the phenomenon is widespread throughout the country and varies greatly from region to region, especially in central and western China[1]. Based on the research and analysis, the academic circle agrees that hollowing out and microcosms are the true portrayal of the development of rural schools.

At present, the instrumental value tendency of rural education in China is mainly manifested as urbanization. First of all, rural education is divorced from rural culture. Farmers believe that education is a means for them and their descendants to move to cities, and that by going to school they can change their identity. At the same time, at present, a large number of rural migrant workers in China go to cities to work, and their children go to school with them. A small number of children who do not go to school with them go to school in the countryside, but their life concepts are gradually becoming urbanized under the influence of their parents or the people around them. In fact, the curriculum plan, curriculum and textbook content are seriously separated from the local rural real life. The policy of one standard and many textbooks in China has enhanced the local adaptability of Chinese curriculum. Some better cities have developed courses suitable for local areas, but education authorities or publishing institutions in rural areas lack the ability to develop courses suitable for local areas. Rural schools adopt the curriculum plan, syllabus and textbooks of urban education, which is divorced from the life of rural students. Although the state requires the establishment of school-based courses, due to factors such as teachers, rural schools offer few or even no school-based courses. Finally, it ignores its own unique rural deposits and distinctive development characteristics. In the process of development, rural schools gradually break away from the cultural foundation of rural areas, showing an obvious tendency of urbanization, and lack the cultural

characteristics that rural schools should have.

2. FACTORS INFLUENCING THE DEVELOPMENT OF RURAL SCHOOLS

Influenced by the background of social transformation and development, there are three factors affecting the development of rural schools. The first is the acceleration of the urbanization process, resulting in the rapid reduction of the size of rural schools. In his 2018 government work report, Li noted that more than 80 million rural migrants in China have become urban residents in the past five years. With the acceleration of urbanization, the rural population has poured into cities and towns, leading to the loss of high-quality teachers, the decline of students, the reduction of class size and the reduction of school size. However, small-scale rural schools will continue to exist for a long time in the future. The second is the implementation of the policy of withdrawing and merging schools, which affects the development of rural schools. From 2001 to 2011, China fully implemented the policy of withdrawing and merging schools, and a large number of rural schools were withdrawn and merged. After the emergency suspension in 2012, rural small-scale schools and boarding schools have been fully affirmed and vigorously promoted by the national policy. The third is restricted by the dual social system and economic structure of urban and rural China. Rural land income is low, rural economic development is relatively backward, and rural education funds are difficult to be guaranteed, which affects the development of rural schools.

People from all walks of life often treat the development of rural schools with the standard of urban school development and have a wrong understanding of the development of rural schools. This includes not only the government, education administration, parents, etc., but also the principals and teachers within the school. Rural parents do not trust rural schools, coupled with the psychology of keeping up with the Jock; try every means to bring their children to the city to study, which affects the overall development of rural schools to a large extent. The education in rural schools has affected the development of rural schools. The social identity of rural teachers is low. At present, teachers in rural schools in China do not have a sense of belonging due to self-denial or social denial, and their identity contradiction between rural people and urban people is low. In addition, teachers in rural schools lack motivation for self-development, which affects the professional development of teachers in rural schools.

A variety of policies, management systems, bound the development of rural schools. Firstly, policies are hampering the development of rural schools. The reform of the tax and fee system abolished the agricultural tax and tuition and miscellaneous fees for students, and reduced the income of rural schools, teachers' salaries and the pay of substitute teachers. The teacher circulation mechanism is not flexible; the rural school teachers are mostly solved by the way of special post teacher recruitment or teacher temporary employment. These aggravate the predicament of teachers in the development of rural schools. Secondly,

the limitations of the education financial system, coupled with the large and scattered rural school network, cannot guarantee the full input of rural education funds. Thirdly, there are some defects in the estimation standard of local education funds, such as the obvious gap between schools' funds and the mismatch between the supply of funds and the demand. Finally, centralized schools have concentrated various resources and centralized management power. They are in charge of the allocation of funds, equipment procurement, teacher assessment and professional title evaluation of their subordinate schools. As a result, rural schools lack the sense of independence and the right to run schools independently and cannot develop their characteristics in accordance with local conditions.

3. IMPROVEMENT STRATEGIES FOR RURAL SCHOOL DEVELOPMENT

The government should consider the actual situation of rural school development and formulate a series of rules and regulations that benefit rural school development. The government should focus on the reality of rural school development and strengthen the pertinence of system and policy. In view of the specific problems such as how rural schools attract students to return home, gather social forces and improve the conditions for running schools, the government should focus on ensuring educational funds and allocating resources. Formulation and implementation of the principal management system, teachers management system, the current teacher evaluation system, communication system of supporting services, rural teachers' promotion gradient of the honor system and evaluation system, and improve the general teachers students free education policy, etc., to establish or perfect the system of rural school teachers development of long-acting system, increase the attraction of rural teachers.

The development of rural schools should conform to their own actual situation, adhere to the education-oriented and adjust measures according to local conditions. The academic circles agree that rural schools have their own history and mission, and should not blindly pursue urbanization, but should combine with their own reality, do a good job in positioning themselves, and finally rely on their own internal growth to solve their development problems, so as to form their own unique management, characteristic culture and so on. No matter what kind of rural schools, to establish self-confidence, based on its improvement needs, take care of the interests of the community, the pursuit of characteristics of innovation, the pursuit of the theory and practice of fit and because of the value of university condition demands, rural culture education, build schools, community interaction, in to interact with the community development on the basis of Shared resources, choose to develop and optimize rural schools improve the endogenous mode [2]. No matter what type of rural schools are, they should have autonomy in running schools, formulate internal systems suitable for their own development, form the pursuit of characteristic values, create characteristic culture, and take the road of characteristic running schools and the road of connotation development.

In addition to the endogenous development model, rural schools should establish a symbiotic development model based on their own connotation development needs. Current scholars have proposed that the rural school development alliance is a relatively recognized symbiotic development mode in the academic circle, based on the actual development of rural small-scale schools. Combined with the reality of weak schools in rural areas, cooperative development mode is recognized by the academic community as an endogenous development mode. To sum up, there are four modes of cooperative development of rural weak schools in China.

The first is the community of mutual assistance between urban and rural schools. The second is the entrustment management mode of weak schools, which entrusts weak schools to other high-quality schools or educational professional institutions for management. The third is the rational flow mode of urban and rural teachers, which mainly includes the mode of volunteer teaching and the mode of short-term communication between urban and rural teachers. The fourth is the collectivized school-running mode, including the supplementing mode in the primary stage, the grafting mode in the intermediate stage and the symbiosis mode in the advanced stage.

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Development of Natural Ecological Resources and The Practice of Building Tourism Brand

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Abstract: Ecotourism is a new form of tourism developed on the basis of traditional tourism, which has rich connotation and strong vitality. Ecotourism is a new form of tourism developed on the basis of traditional tourism. It has rich connotations and has strong vitality. The emergence of eco-tourism is people's reflection on the environmental problems caused by traditional tourism, and reflects the idea of sustainable development. China's awareness of eco-tourism brands is relatively weak. Enterprises need to shape their brand image, create brand value, and improve their brand competitiveness, thereby affecting, cultivating, and satisfying marketing activities that meet specific consumer needs. By participating in observations and questionnaires, the article studies the development of ecotourism and brand marketing, and puts forward ideas such as strengthening brand management, improving marketing channels, and developing distinctive products to help tourism operators fully understand the consumption needs of ecotourism for tourism Product development and brand marketing strategy development provide useful guidance.
Keywords: Ecological Environment, Natural Resources, Consumption Demand, Brand Value, Feature Analysis

1.INTRODUCTION

The concept of "ecotourism" was introduced into China from abroad and gradually accepted. the national ecotourism demonstration zone construction and operation standard defines ecotourism as: "based on the concept of sustainable development, the premise of protecting the ecological environment, the principle of coordinating the harmony between human and nature, and relying on a good natural ecological environment and unique human and cultural ecological system, eco-friendly way is adopted to carry out ecological experience, ecological education, ecological cognition and obtain a physically and mentally pleasant tourism mode."

Judging from foreign studies, functional zoning is an important part of ecotourism planning. It is generally believed that the earliest zoning model is the concentric circle model advocated by American landscape architect Richard Forster (1973), which divides the National Park into core reserve, recreation buffer zone and intensive recreation zone from the inside to the outside (Goodwin, 1996). This model has been recognized by the World Conservation Union. On this basis, Co aogunn (1988) proposed a five circle National Park Tourism zoning model, which divides the park into key resource protection areas, low use areas of wilderness, scattered rest areas, intensive rest areas and service communities. Some scholars also discussed the principles of ecotourism rules and the delimitation of ecotourism zone boundaries (Campbell, 1999). For example, Edward Inskip (1997), consultant of the world tourism organization, once proposed the principles of ecotourism planning, such as strict protection, capacity limitation, local materials, control path, etc. (Scheyvens, 1999). Sheryl Ross and Geoffrey wall (1999) put forward a successful theoretical framework for ecotourism development. They believed that ecotourism development must coordinate the relationship among local communities, biodiversity and tourism, and the coordination of the relationship among the three depends on reasonable management (Wunder, 2000). They also put forward a series of ecotourism management strategies, such as making effective management plans implement monitoring (species, environment, number of tourists, community situation), formulate community participation plan, manage tourists (measure environmental capacity, control activities, scale, behavior of tourists), formulate relevant laws and regulations, etc. Stefan gossling (1999) believed that successful ecotourism should take comprehensive management measures such as education and control, and the number of tourists can be effectively limited by raising the threshold (Tobias et. al., 1991, Olive, 2005)

2.LITERATURE REVIEW

In January 1995, the first national ecotourism symposium was held in Xishuangbanna. After the symposium, articles on ecotourism research appeared frequently in various journals. Domestic scholars have discussed and studied ecotourism from different perspectives. In the aspect of theoretical research, it mainly discusses the concept, connotation and characteristics of ecotourism, the significance, strategy and goal of developing ecotourism, etc.; in the aspect of empirical research, it mainly includes the planning and design of ecotourism, the evaluation of ecotourism resource utilization, the change rules of tourism ecosystem, etc. Many experts in tourism, geography and forestry in China have studied the ecotourism planning and development of nature reserves (Belsky, 2009). For example, Kong Fanbin made a prospect on the particularity and future development trend of ecotourism in the reserve (Gunter et. al., 2017). Zheng Wenjun, et al. Set up a framework system of ecotourism planning for nature reserves, and discussed the specific embodiment of ecological concept in the tourism planning of nature reserves from the aspects of planning scope, nature positioning, functional zoning, etc. (Mendoza-Ramos et. al., 2017).

Ecotourism is a very important part of world tourism activities. From the perspective of tourism development, ecotourism is the fastest growing part of the world tourism industry in recent years, with an annual growth rate of 25% - 30%. Ecotourism has become the trend of world tourism

(Kusumoarto et. al., 2018). China's ecotourism is mainly based on the development of nature reserves, forest parks, scenic spots and other areas. At present, the form of China's ecotourism has developed from the original natural landscape to the semi artificial ecological landscape. The tourism objects include fields, glaciers, nature reserves, rural pastoral landscapes, etc. the form of ecotourism includes sightseeing, viewing, scientific research, exploration, hunting, fishing, rural picking and the main activities of ecological agriculture, showing a diversified pattern (Digun-Aweto et. al., 2018). At the same time, ecotourism has become a key industry for local governments to attract investment and a new supporting point for economic development (Frederico et. al., 2018, Rahakbauw et. al., 2017).

In the 12th Five Year Plan for national economic and social development, it is clearly pointed out that "comprehensively promote ecotourism" (Fatima et. al., 2017). In the outline of the 12th Five Year Plan for national tourism development, specific arrangements are made for the development of ecotourism. In order to promote the development of ecotourism, the National Tourism Administration and the Ministry of environmental protection jointly formulated the national ecotourism demonstration area construction and operation specifications, jointly issued the national ecotourism demonstration area management regulations and the implementation rules for the scoring of national ecotourism demonstration area construction and operation specifications (Nze-Nkogue et. al., 2017). The issuance and implementation of these documents will play an important role in speeding up the construction of ecotourism demonstration areas and improving the level of ecotourism in China.

3. THE INVESTIGATION AND ANALYSIS OF BRAND MARKETING OF ECOTOURISM IN CHINA

Questionnaire design and sample selection

This survey uses a self-designed questionnaire based on references. There are 18 questions in total: 13 single questions, 2 multi questions, 1 sorting question and 1 subjective question. A total of 240 questionnaires were sent out, of which 200 were valid.

The questionnaire is divided into three parts. The topics are as follows: the first part is about the statistics of the basic demographic characteristics of the research object: including the survey items of gender characteristics, age characteristics and average family income characteristics; the second part is about the statistics items of information sources and marketing channels. The third part is about the statistics of food, housing and transportation.

In this paper, the questionnaire is distributed to the people who choose ecotourism. In the tourism agency of the region, consumers are invited to fill in the questionnaire mainly in the form of questionnaire, and several tourists who have returned from ecotourism are investigated in-depth. Factors such as the independent completion of the questionnaire and the content of better geographical solutions are properly considered.

Analysis of questionnaire results

Analysis of basic demographic characteristics

According to the statistics of the filling in of the effective questionnaire, the following charts can be seen: in the 200 valid questionnaires, the proportion of women in the filling in accounts for about 54%; in terms of age, the most of them are over 45 years old, accounting for 55%; the proportion of those under 25 years old also accounts for 32%; the average family income between 5000-10000 yuan accounts for about 54%.

Brand consumption

According to the survey, in the consumption decision-making behavior of ecotourism, most tourists will choose the tourist area with brand rather than the unknown place. More than 85% of tourists think that the brand scenic spots will be more reassuring and the overall tourism level will be improved.

Among the subjective questions in the questionnaire survey, most people mentioned Shangri La, Jiuzhaigou, Wuyuan and other places, but few mentioned the areas. With the continuous improvement of consumer's cultural level, income level and consumption concept, consumer's brand awareness has been continuously enhanced, and they have more and more preference for well-known brands, and pay more and more attention to brand culture

Six elements of tourism consumption

In terms of consumption, many people's per capita consumption expenditure for travel is mainly concentrated in 1000-3000 yuan, accounting for about 45%; 3000-5000 yuan accounts for 20%; 5000-7000 yuan accounts for 10%; 7000 yuan or more accounts for 10%. The consumption of ecotourism is slightly different from that of traditional tourism. The consumption of ecotourism is mainly reflected in: eating, living, traveling and traveling; entertainment and shopping are almost rare. Most of the ecotourism travel time is 3-7 days, accounting for 65%, 10% of 1-2 days, and 35% of more than 7 days.

In tourism, the six elements include "eating" -- dining choice, "living" -- accommodation choice, "traveling" -- Transportation choice, "traveling" -- tourism attraction resources choice, "shopping" -- shopping choice, "entertainment" -- entertainment choice. The following will be analyzed by survey:

(1) "Stay" -- choice of accommodation

From the analysis, we can see that "stay" occupies a very important position in the six elements ranking. From the survey, we can see that most of them choose hotel accommodation, with star hotels accounting for 64%. The safety and comfort of accommodation conditions are the first choice for everyone in tourism.

(2) "Travel" -- the best way to travel and tourism attraction resources

Choose to travel, of course, the elements of tourism are very important. When choosing the way to travel, 60% of the tourists choose self-help travel, which is quite different from the previous group travel. 20% of the tourists choose semi self-help travel; 16% of the tourists choose to travel with the group, which doesn't matter about 4%.

Tourism resources refer to all kinds of things and factors that can attract tourists, develop and utilize tourism, and produce economic, social and environmental benefits. For people who like ecotourism, this tourism resource is

particularly important, which is the reason to attract them here. Natural scenery, folk characteristics, authentic food and so on. And some places have strong seasonality, such as Wuyuan in April, which is very beautiful. It's a good choice for tourists to stay away from noisy cities and go to a quiet and peaceful town or field.

(3) " Walking" -- choice of means of transportation

" Walking" also plays an important role in tourism. In ecotourism, about 64% of people choose to drive by themselves, 10% choose aircraft as means of transportation, and 21% choose train.

(4) "Eat" -- dining options

"Eat" ranks fourth among the six elements, of which 65% are local snacks and 24% are medium and high-end specialty restaurants. It can be seen that "eat" focuses on taste, eating characteristics and unique taste experience.

(5) "Buy" -- shopping options

"Shopping" does not occupy a very high position in ecotourism, "shopping" is not the purpose of everyone to go to ecotourism. The preferences of shopping types are as follows: famous and special products, souvenirs, clothing, etc. Among them, the proportion of the first two is 96%, far higher than other.

(6) "Entertainment" -- entertainment choice

Entertainment is the last choice in the consumption of ecotourism. For the survey of places with entertainment nature such as clubs, bars, KTV, etc., 85% of them explicitly said that they would not go, 10% of them hold an uncertain attitude, and 5% of them said they would go. The overall image building of tourist destination is the core of the brand management of tourist destination, and its main work is the accurate positioning of the overall image and visual image. To build the overall concept of tourism destination brand, establish a simple, easy to understand, easy to identify, easy to remember, outstanding brand image, so that the tourism destination has distinctive local characteristics, industry characteristics. Give full play to the unique role of visual image in the overall image of tourist destination. Visual image is the first information that tourists can perceive. It has a strong cognitive appeal to tourists and can help tourists quickly and effectively perceive the overall image of the tourist destination.

Develop characteristic products.

The continuous charm of ecotourism is due to the richness and authenticity of ecotourism products' ecological flavor. Therefore, when developing ecotourism products, we must consider the past and the future, ensure the strong ecological flavor, at the same time, excavate its personality and characteristics, achieve deep and multi-directional development and design, enhance the attraction of ecotourism products, and improve market competitiveness. At present, the participation of ecotourism is also very important. To let tourists participate in ecotourism, enhancing tourists' experience is an important means to attract tourists, and also a way to retain tourists and extend their stay time.

Strengthen brand management.

The purpose of tourism brand management is to strive for famous brand and realize the long-term economic benefits of a tourism enterprise. The essence of tourism brand management is a process management, which should be long-term, phased and systematic. The implementation of dynamic management, in the dynamic process of enhancing brand value, accumulating brand assets, building a famous brand in a specific area, and achieving the strategic objectives of the enterprise, rather than focusing on brand building and ignoring brand management. Be good at analyzing tourists' psychological motivation and demand, and find out the brand positioning.

Improve marketing channels.

Build a publicity platform, display the brand image of ecotourism, and be good at using various ways and opportunities to target tourist market and carry out multi-level combined publicity and promotion. Specific methods: invite journalists from relevant media and travel agency personnel to experience on the spot; display the beautiful scenery and culture of ecotourism through photography works, advertisements, etc.; use relevant large-scale activities to publicize, such as tourism promotion meetings, etc.; release tourism advertising information through modern information means such as TV, Internet, journals, etc. Strengthen cooperation with travel agencies, expand the influence of ecotourism, and expand the market of ecotourism tourists. Maintain market order, provide funds for publicity, create a good market environment for ecotourism brand building, and encourage and guide social capital to participate in the brand building of ecotourism enterprises.

4.CONCLUSION

Ecotourism is a new form of tourism developed on the basis of traditional tourism, which has rich connotation and strong vitality. The emergence of ecotourism is people's reflection on the environmental problems caused by traditional tourism, which embodies the idea of sustainable development. China's brand awareness of ecotourism is relatively weak. Enterprises need to create brand image, create brand value, improve brand competitiveness, so as to influence, cultivate and meet specific consumer demand of marketing activities. Through participating in observation and questionnaire survey, this paper studies the development and brand marketing of ecotourism, puts forward the views of strengthening brand management, improving marketing channels, developing characteristic products, etc., to help tourism operators fully understand the consumption demand of ecotourism, and provide useful guidance for the development of tourism products and the formulation of brand marketing strategies.

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On the Arbitrary Application of Conflict Norms

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Abstract: At present, when the courts of most countries in the world, including our country, try foreign-related cases, the decision-making power of the application of the conflict norms is completely decided by the court according to its own authority, without considering any wishes of the parties. However, although the current environment of private international law order is still that national sovereignty is in the first place, the private international law deals with the private interests of individuals in international relations, and the parties should have a certain right of disposition. Therefore, it is necessary to consider the will of the parties when applying the conflict norms. When dealing with international relations, the parties will consider their own actual cost of interests, which will make them reluctant to choose the foreign law which is more expensive than the application of domestic law in a foreign-related case.
Key words: Arbitrariness; Right of Free Disposal; Conflict Norms

1. TYPICAL COUNTRIES WITH ARBITRARY APPLICATION OF CONFLICT NORMS

The pursuit of the application of law in foreign-related cases is first to reflect that there are equal opportunities in the application of laws between countries, and only then can the judgment be recognized and enforced by other countries. Even so, we can not ignore the disposition right of the parties in the field of private international law. With the development of the international community, the degree of respect between countries is also increasing, and the international community is developing. The progress of society will make it possible for us to consider more the wishes of the parties when dealing with foreign-related civil cases.

(1) Arbitrary application of French conflict norms

France is one of the countries in continental law system where conflict norms are applied arbitrarily.The principle of arbitrary application of conflict norms in France was established in the case in 1959. From then on, it went back from the arbitrary application of conflict norms to the application of official power according to law, and then to the application state of the combination of the two, that is, whether the conflict norms are applicable in international private law cases with the right of disposition of the parties is determined by the will of the parties, such as infringement, contract, etc. It mainly reflects the property relationship cases; the cases that the parties can not dispose of, such as the marriage and family and upbringing involving the interests of the state and others, are applied by judges according to their functions and powers, which does not reflect the wishes of the parties.The arbitrariness of the conflict rules can be described as relatively reasonable. One party embodies the autonomy of the parties in the "private" relationship, and

at the same time, it gives special protection to the relations involving the interests of the state, the collective and others, so as not to excessively pursue the protection of the interests of one party and neglect the interests of other aspects taking into account the interests of all parties.

(2) The parties in Anglo American law system have the right to apply foreign law

According to the nature of foreign laws, foreign laws can be divided into facts and laws. For countries that regard foreign laws and their own laws as laws, there are often similar practices or compulsory direct application of conflict norms.However, for countries like the common law system which regard foreign law as facts, they prefer to give the decision-making power to the parties.If the parties make a request for the application of foreign laws, the court will apply them. If the parties do not request the application of conflict norms to find foreign laws, even if the judges find that there are obvious factors reflecting foreign affairs in the case, they can not directly apply the conflict norms according to their functions and powers, otherwise, the legal provisions will be violated and the judgment result of the case will be invalid.

The decision-making power of the parties is embodied in any foreign-related private law cases, including not only the property cases that the parties can dispose of, but also the marriage and inheritance cases involving the state, the collective and others.Countries that regard foreign laws as facts pay more attention to the inclination and protection of the party's autonomy of will or the protection of the parties; personal interests in foreign-related civil cases.

(3) The complexity of arbitrariness of conflict norms in Germany

The effectiveness of the German civil law enforcement law requires judges to apply conflict norms according to their functions and powers. However, the German civil procedure law does not explicitly stipulate that the application of foreign laws is the judge obligation. At the same time, the theory of arbitrariness of conflict norms has also been recognized by some courts in practice, so Germany still recognizes it to a certain extent the conflict rules are arbitrary.

2 CONSIDERATIONS OF ARBITRARY APPLICATION OF CONFLICT RULES

The realization of substantive law is carried out under the litigation system. We can simply take the litigation procedure as the tool to realize the interests of the substantive law, but also pay attention to the mutual influence between the two.The system reflecting the parties' discretion in the process of practice gradually affects the arbitrary choice of conflict norms.At present, there are two main types of litigation modes in the world, one is the principle of authority, the other is the principle of litigant.These two modes can be attributed to the litigant procedural structure, and the right to control

litigation materials and the right to participate in law play a great role in the arbitrary application of conflict norms.At the same time, the parties will also consider whether it is beneficial for them to apply the conflict rules according to the procedural and substantive needs of their own special interests in a case.

(1) The influence of the party right to control litigation materials on the arbitrary application of conflict norms

In a foreign-related case, the foreign factors decide whether to apply the conflict rules first, which directly affects the substantive interests of the parties. Therefore, the initiative of the investigation of foreign-related factors should be attributed to the parties, not to the judges. After weighing the advantages and disadvantages, the parties have the right to decide whether to submit the relevant litigation materials to the court that cause the application of the conflict norms.As long as the two parties agree not to submit relevant foreign-related litigation materials to the court, it means that the parties have no dispute on the issue of foreign-related factors. Based on the principle of civil free disposition, the court has no right to interfere, so the court can not take the initiative to investigate and intervene, and can only try the relevant litigation materials put forward by the parties.

(2) The party right to participate in the application of law is applied arbitrarily to the conflict norms

The participation right mentioned by the Department mainly refers to the financial resources that the parties "have no intention to provide" or "have to provide" when they participate in the trial of the court.For example: the nationality and residence of the parties, which may be foreign nationality and residence in a foreign country, will bring the case into the foreign-related cases; litigation materials may also require the parties to provide the place of signing the contract, the place of performance or the location of the infringement. If these factors are abroad, it will also cause the case to be a foreign-related case, and the judge may be directly suitable according to one functions and powers. With the conflict norms, these factors that the parties can not avoid can not be listed as the control right of litigation materials, but the parties can only provide truthfully. The act of "providing truthfully" is the embodiment of "litigation participation right". The participation right directly affects the formation of the judge legal views on the case, which provides a legal basis for the arbitrariness of the conflict norms According to.

(3) Eliminating the application of conflict norms increases the predictability of trial results

In foreign-related cases, it will be applied to some more complex issues than the application of domestic law. For example, the problem of identification, the nature of a case to be determined, needs to be decided by the trial; the issue of public order reservation and the identification of foreign law, only when the case is tried to the procedure can decide whether to apply foreign law. In these processes, the judge has a certain degree discretion or the specific implementation of foreign law to determine the applicable results. As far as the conflict norms themselves are concerned, they do not directly stipulate the rights and obligations of the parties, but only indicate how the parties find out the specific substantive law to be applied. Therefore, the conflict norms themselves clarify the specific rights and obligations of the parties, which reduces the predictability of the parties to the case results. These unpredictable applications of law will cause the parties can not provide timely and sufficient response, thus losing the claim of relevant rights, which is certainly not conducive to the protection of the parties own rights. Therefore, in this case, the parties are not willing to deal with them as foreign-related cases, hoping to deal with them as domestic cases, thus increasing the number of parties the predictability of the results of the case can better claim their own rights and interests.

(4) Considering the cost and time of litigation, the parties are not willing to act as foreign-related cases

Generally speaking, the trial of a foreign-related case will cost more time, materials, manpower and material resources than a domestic case of the same degree of complexity.As far as litigation costs are concerned, foreign affairs will involve a series of issues such as the identification of foreign laws. If the burden of proof lies with the parties concerned, the parties concerned will have to conduct an investigation, which is bound to generate more costs, which are not expected by the parties. Considering the trial time, cases with foreign factors need to find out foreign laws, which itself will take a certain amount of time. For a contract dispute, if the case has not been heard, the opportunity will be missed. Therefore, this is what the parties do not want to see.From these two aspects, we can think that in some cases, the parties concerned are not willing to spend more money and time in litigation, considering their actual interests.

3 THE APPLICATION OF ARBITRARINESS OF CONFLICT NORMS IN CHINA

The current conflict norms in our country mainly exist in some separate laws, such as the applicable law of foreign related civil law, general principles of civil law, maritime law, bill law and so on. Hong Kong belongs to the common law system and takes foreign law as a fact. Therefore, there are parties to find out the foreign law. If the party does not provide the foreign law, then the judge can not find out the foreign law according to his / her power, and the foreign law can not be applied. Macao belongs to the continental law system, and the parties can also agree on the content of the foreign law, and the content of the agreement can and should be applied. The inconsistency of foreign laws, in fact, is the embodiment of the arbitrary application of conflict norms, excluding the applicable foreign laws, and the parties negotiate and decide. Although there is no clear provision in Taiwan, according to the Supreme Court judgment, it can be considered that the application of conflict norms is mandatory and is decided by judges according to their functions and powers. China's attitude towards the application of conflict norms is mandatory. The parties are not allowed to choose whether to apply them freely, and all of them are subject to the jurisdiction of judges. Because China mainland is based on the principle of authority, the main responsibility of identifying foreign laws lies in the court, which has the right to decide the

application of foreign laws. At present, in China's "general principles of civil law" and other relevant laws, the application of these conflict norms by judges is an obligation, so it does not reflect the arbitrariness of the parties, and is a mandatory conflict rule.

In 2002, Hebei Shenglun import and Export Co., Ltd. sued the defendant Jinchuan international passenger and Cargo Shipping Co., Ltd. and Jinchuan international passenger and cargo shipping (Tianjin) Co., Ltd. Although this is a foreign-related case, the court did not consider the application of foreign law because the parties did not make a request to the court for the application of foreign law. Although this case can not represent our country attitude towards the arbitrary application of conflict norms in foreign-related cases, it at least represents our practice or attempt. However, whether it is the national sovereignty environment of the international social order or the embodiment of China's own national sovereignty and the best way to protect the interests of the parties concerned, China can not consider the parties' selectivity when dealing with foreign-related civil and commercial cases, but can only be applied compulsorily.

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An Approach To Entity Linking Based On Dynamic Topic Model

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Abstract: To solve the problem of properties missing and discrepancy in the process of obtaining semantic information, a dynamic topic model approach to entity linking is proposed. The unstructured descriptive text contracted from knowledge base was modeled with the usage of the dynamic topic model. Hidden parameters of the model were estimated by adding windows to text dynamically. Then, the categories of extracted features were labeled and the real data set was trained by classifier. Furthermore, extended experiments were fulfilled. Experimental results demonstrate that the proposed algorithm's accuracy, recall rate and the comprehensive coefficient F1-value outperform the traditional methods. This kind of approach could obtain the potential semantic information of unstructured texts better and improve the effect of entity linking.
Key words: Entity Linking; Dynamic Topic Model; Gibbs Sampling; Candidate Entities

1 INTRODUCTION

Name entities refer to the object that contain certain information in text, such as names, organizations, locations, etc. However, the phenomenon of ambiguous reference often appears in text, such as polysemy or multi word express the same meaning and so on. In order to make machines distinguish the information contained of named entities in the texts accurately and help users understand the named entities better, it is necessary to map them to the real entities without ambiguity in knowledge base.

Entity linking is a kind of disambiguation technology, which refers to the process of identifying ambiguous entities in passages to a specific item of knowledge base [1]. Traditional method was based on similarity, which was first proposed by Bunescu et al [2]. It could be determined whether two entities refer to the same thing in real world by calculating their similarity and estimating the similarity within bounds or not. Nguyen used the page structure and context features of Wikipedia pages and proposed a similarity calculation model to improve the efficiency of linking system [3]. An entity alignment method combining entity properties and contextual topic features was proposed by Huang [4], which could effectively improve the effect of linking when constructing Chinese heterogeneous encyclopedia knowledge base. An alignment method based on property semantic features was proposed by Wan, which could effectively link data instances with less manual intervention[5]. Reference [6] integrated the properties labels of entities to align Chinese encyclopedia entities,

which solved the problem of entity alignment in multi-source knowledge bases. In Ref.[7], a rule-based decision tree was constructed by studying the non-primary properties of entities and their association relations, which improved the efficient of entity matching.

In conclusion, entity linking has become a research hotspot in recent years. But most of current researches rely on structured text of entities and use the properties of entities to obtain semantic information. However, different knowledge bases have different descriptions of entity property names or property information. For example, both in Wikipedia and Britannica, the word of "starring" and "role" of the movie "Iron Man" are respectively described as the main performer. In addition, some entities in knowledge bases have the problem of properties missing. Chongqing municipality of China has the property of elevation in Wikipedia, while Tianjin, another city like Chongqing, has no such property in Wikipedia. These problems add the workload and difficulty of entity linking undoubtedly. Therefore, this paper proposed an entity linking method based on dynamic topic model, which could use unstructured text effectively in knowledge bases for topic modeling. The experimental results shown that the method proposed could obtain the unstructured information of entities more fully and improve the effect of entity linking more effectively.

The main work of this paper is as follows:

(1) In this paper, an entity linking method based on dynamic topic model was proposed. When modeling of entity unstructured text, the improved topic model was used to obtain the semantic information, and hidden parameters distribution was obtained dynamically when the parameters of topic model were derived.

(2) To solve the problem of imbalance between positive and negative samples, outlier detection method was used to link entities.

(3) Compared with the current popular parameters derivation methods and analyzed the experimental results.

2 RELATED WORK

2.1 LDA model

Latent Dirichlet allocation (LDA[7]) is a three-level Bayesian probability model including texts, topics and words. As it is shown in Figure 1 and table1 of LDA model, the sampling process of the document d is as follows:

(1)Generate topic distribution $\theta_d \sim Dir(\alpha)$ for current document d.

(2) Generate topic distribution $z_{d,n} \sim Mult(\theta_d)$ for each word n of document d.

(3) Generate the corresponding word distribution $\varphi_{z_{d,n}} \sim Dir(\beta)$ for each topic of $z_{d,n}$.

(4) Sampling to generate the final word $\varphi_{z_{d,n}} \sim Dir(\beta)$.
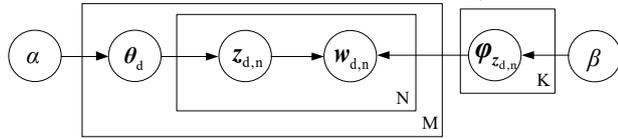
Figure.1 LDA model

Table 1 Symbol definition

symbol	meaning
M	number of documents in text set
N	number of words of a document
K	number of topics
V	number of words in text set
θ_d	topic distribution of document d
$z_{d,n}$	topic distribution of word n in document d
$w_{z_{d,n}}$	word n in document d
$\varphi_{z_{d,n}}$	word distribution of $z_{d,n}$
$\alpha, \beta,$	parameters of Dirichlet distribution

LDA model transforms the process of text generation into probability sampling, θ_d connects documents and topics while $\varphi_{z_{d,n}}$ connects topics and words. The similarity between disambiguation entity and candidate entity is calculated by obtaining topic probability distribution of the documents and thus it is necessary to estimate the two hidden parameters θ_d and $\varphi_{z_{d,n}}$ of the model to complete the process of entity linking.

2.2 Gibbs sampling

The purpose of topic model is to get topic labels of each word in a document when modeling the text sets. Gibbs sampling (GS[9]) is a common derivation method to get hidden parameters. The conditional distribution of GS in LDA model is as follows:

$$p(z_i = k | z_{\neg i}, w)$$

Through integral calculation, here is following formula(1) and formula(2):

$$p(z_i = k | z_{\neg i}, w) \propto p(z_i = k, w_i = t | z_{\neg i}, w_{\neg i})$$
$$= E(\theta_{d,k})E(\varphi_{k,t})$$
$$= \hat{\theta}_{d,k} \times \hat{\varphi}_{k,t}$$

and

$$\hat{\theta}_{d,k} = E(\theta_{d,k}) = \frac{n_{d,\neg i}^k + \alpha_k}{\sum_{k=1}^{K}(n_{d,\neg i}^k + \alpha_k)} \quad (1)$$

$$\hat{\varphi}_{k,t} = E(\varphi_{k,t}) = \frac{m_{k,\neg i}^t + \beta_t}{\sum_{t=1}^{V}(m_{k,\neg i}^t + \beta_t)} \quad (2)$$

where:

$\hat{\theta}_{d,k}$ denotes the topic distribution of document d.

$\hat{\varphi}_{k,t}$ denotes the word distribution of the text.

$w_{\neg i}$ represents the set of words without word i.

$z_{\neg i}$ indicates the set of topics without the topic i.

n_d^k represents the number of topic k appeared in document d.

m_k^t represents the number of word t appeared in topic k.

2.3 One-class SVM

When added category labels to candidate entities, the number of linked entities was far less than that of non-linked entities. In other words, linked entities are outliers

compared with non-linked entities. Therefore, this paper used outlier detection method to complete entity linking and captured outliers through anomaly detection of samples, that is, linked entities. As an outlier detection algorithm, One-class SVM[10] has the following decision functions:

$$f(x) = sign\left(\sum_{i=1}^{l} \lambda_i K(x_i, x) - \sum_{j=1}^{l} \lambda_j K(x_i, x_j)\right) \quad (3)$$

where λ is the Lagrange factor and $K(\cdot)$ is kernel function. For the disambiguation entity e_i and its candidate entity c_i^j, it could be obtained by the decision function $f(c_i^j)$. That means, it is a normal sample when $f(c_i^j) > 0$ but abnormal sample which means when $f(c_i^j) < 0$, c_i^j is the right item of candidate entities.

3.DYNAMIC TOPIC MODEL AND IMPLEMENT

3.1 Dynamic topic model

According to the principle of GS, the estimation of the distribution of current word of each topic is based on the estimation of the topic distribution of all other words which is limited by the length of the text. The dynamic topic model proposed in this paper dynamically added windows to the description text during the iteration process. When updated window, the topic and word distribution of previous window were used as prior distribution of topic distribution and word distribution of current window which introduced a priori information.

As shown in Figure 2, the generation process of a document by dynamic topic model is as follows:

(1) Initialize a window and obtain topic distribution $\theta_d \sim Dir(\alpha)$ and word distribution $\varphi_{z_{d,n}} \sim Dir(\beta)$ of the window.

(2) Obtain the previous window and topic distribution θ'_d and word distribution $\varphi'_{z_{d,n}}$ of it.

(3) Execute (4) ~ (7) for each document of current window w.

(4) Generate topic distribution $\theta_d \leftarrow \theta'_d$ for document d.

(5) Generate topic distribution $z_{d,n} \sim Mult(\theta_d)$ for each word n of the document d.

(6) For each topic of $z_{d,n}$, generate the corresponding word distribution $\varphi_{z_{d,n}} \leftarrow \varphi'_{z_{d,n}}$.

(7) Generate final word $w_{d,n} \sim Mult(\varphi_{z_{d,n}})$ until all words of current window w have been sampled.

(8) Update the window and return to step (2) until the number of updating reach the threshold.
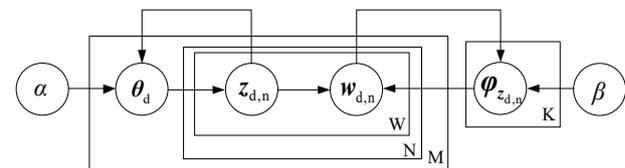
Figure 2 dynamic topic model

The main idea of dynamic topic model is to add windows for description texts of entities in the iteration process and integrate the distribution of topics and words of current window into the next iteration process.

First, the initial window size was set by users according to their needs. GS was used to obtain topic and word distribution of the initial window as prior distribution of

the next update. In the iteration process, when the conditions of window were met, executed update. The weight of current window was calculated by formula (3), and topic distribution and word distribution of the window were updated according to formula (4) as well as formula (5) where p^j was the number of word items contained in the current window, and Q was the constant set by the user.

$$\delta_j = \frac{p^{j-1}}{p^j} \times Q \qquad (4)$$

$$\hat{\theta}_{d,k}^{(j)} \propto \delta_j \theta_{d,k}^{(j-1)} \qquad (5)$$

$$\hat{\varphi}_{k,t}^{(j)} \propto \delta_j \varphi_{k,t}^{(j-1)} \qquad (6)$$

3.2 The flow of dynamic topic model algorithm

The specific process of dynamic topic model algorithm is shown in algorithm 1.

Algorithm 1: Dynamic topic model algorithm.
Input: α, β, K, describing the text sets
Output: θ_d, φ_k
1. //initialization window
2. build the initial window w0 and $\theta_{d,k}^{(0)}, \varphi_{k,t}^{(0)}$
3. $\qquad\qquad \theta_{d,k}^{(0)} \leftarrow 0, \varphi_{k,t}^{(0)} \leftarrow 0$
4. for i = 1 to t // t is the number of iterations
5. if i < T0
6. execute GS for w0 //obtain $\theta_{d,k}^{(0)}$ and $\varphi_{k,t}^{(0)}$ of w0 .
7. Else
8. update $\hat{\theta}_{d,k}^{(j)}$ and $\hat{\varphi}_{k,t}^{(j)}$ with formulas (1) and (2).
9. $\qquad\qquad \theta_{d,k}^{(j)} \leftarrow \hat{\theta}_{d,k}^{(j)}, \varphi_{k,t}^{(j)} \leftarrow \hat{\varphi}_{k,t}^{(j)}$
10. if i % interval == 0 //update windowj
11. use formula (3) to update weights δ_j
12. update $\hat{\theta}_{d,k}^{(j)}$ and $\hat{\varphi}_{k,t}^{(j)}$ with formula (4) and (5)
13. j++
14. $\qquad\qquad \theta_d \leftarrow \theta_{d,k}^{(j)}, \varphi_k \leftarrow \varphi_{k,t}^{(j)}$

When the number of iterations i < = T0, GS algorithm was executed to calculate the topic distribution and word distribution of the initial window w0 as the prior information of first window. Updated the window at every interval and the weight, topic distribution as well as word distribution were obtained and applied to the next iteration.

4 ENTITY LINKING BASED ON DYNAMIC TOPIC MODEL

4.1 Framework overview

The framework of entity linking is shown in figure 3, which mainly includes data preprocessing, obtaining candidate entity sets, topic modeling, feature extraction and classifier discrimination.

Firstly, the description texts in knowledge base and text base would be preprocessed. Secondly, the synonym dictionary and ambiguous dictionary were constructed, and the candidate entity sets were obtained through the dictionaries. Then, the dynamic topic modeling of the description text was carried out, and the hidden parameters were estimated to obtain the characteristic values. Finally, the characteristic values would be sent to the classifier for discrimination and the link result is obtained.
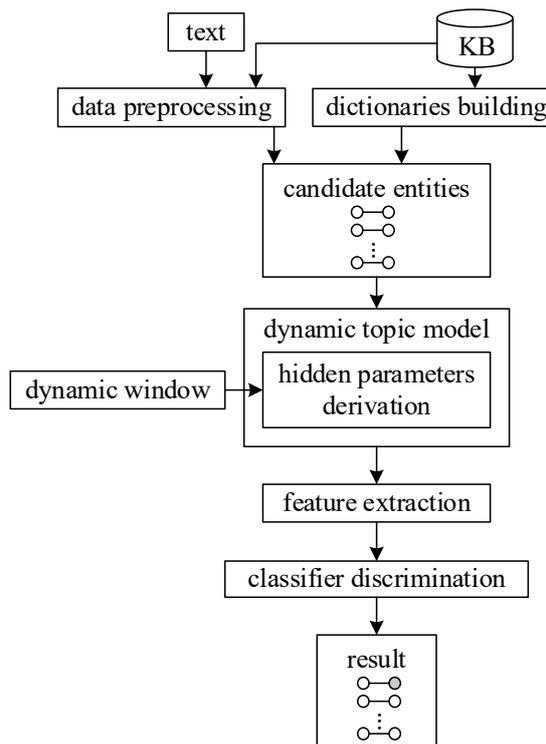
Figure 3 Entity link framework

4.2 Data cleaning and preprocessing

The unstructured text extracted from knowledge base and text base should be preprocessed before linking, such as removing stop words, and the identified entities should be restored accordingly. Meanwhile some abbreviations words should be extended and the tense of words should be restored, and the nonstandard entities and nicknames should be normalized, etc.

4.3 Construct candidate entity set

To reduce the computational space and cost, it is necessary to build candidate entity set for each disambiguation entity. At present, most researchers use the redirection page and disambiguation page of Wikipedia to construct synonym dictionary and ambiguous dictionary [11].As it shown in Table 2, disambiguation entities in the text would be map to standard named entities according to synonym dictionary, and then candidate entities of the standard entities would be find according to ambiguous dictionary in Table 3.

Table 2 Dictionary of synonyms entity

disambiguation entity	standard named entity
Jordan, Michael	
Michael J. Jordan	
Michael Jordon	Michael Jordan
Michael Jeffrey Jordan	

Table 3 Dictionary of ambiguous entity

standard entity	candidate entities
	Michael Jordan(footballer)
	Michael Jordan (Irish politician)
Michael Jordan	Michael Jordan (mycologist)
	Mike Jordan (racing driver)

4.4 Feature extraction

The topic distribution θ_d and word distribution $\varphi_{z_{d,n}}$ are

hidden parameters when using LDA model. In entity linking task, the topic distribution of each description text were needed, so the improved algorithm was to estimate θ_d. According to algorithm 1, the topic probability matrix describing the text could be obtained:

$$\theta_d = \begin{bmatrix} t_{01} & t_{02} & \cdots & t_{0K} \\ t_{11} & t_{12} & \cdots & t_{1K} \\ \vdots & \vdots & & \vdots \\ t_{n1} & t_{n1} & \cdots & t_{nK} \end{bmatrix} = (t_0, t_1, \ldots, t_n)^T \quad (7)$$

where:

t_{dk} represents the probability of the document d on topic k.

K represents the number of topics and n represents the number of description texts.

t_0 represents the topic disambiguation of entity e_i while $t_j (j = 1, 2, \ldots, n)$ represents its candidate entity c_i^j topic distribution.

In this paper, JS divergence was used to measure the difference between two distributions in the same condition. $JS(t_0 \| t_j)$ was closer to zero, t_0 and t_j were more similar which means c_i^j has a higher possibility to be the real entity mapped in the knowledge base of e_i.

4.5 Entity linking based on dynamic topic model

Tagging its category label for each <disambiguation entity, candidate entity > item (denoted as $< e_i, c_i^j >$ in the following paper). The marking method was that for each $< e_i, c_i^j >$, the feather values was obtained and expressed as $(f_i^1, f_i^2, \ldots, f_i^K; label_i^j)$ where f_i^j was feather value while $label_i^j$ was the category of c_i^j. Then calculated $JS(t_0 \| t_j)$ and when result was greater than the threshold, the $label_i^j$ was marked as 1, otherwise -1.

According to the labeling results, the disambiguation entity contained many candidate entities which means the correctly linked entity pairs were outliers compared with the non-linked entity pairs. Therefore, this paper used one-class SVM to capture outliers and obtained the correct linked candidate entities.

Algorithm 2. Entity linking algorithm based on dynamic topic model.

Input: text base, knowledge base, One-class SVM
Output: disambiguation entities and their linked results

1. Construct synonym dictionary and ambiguous dictionary according to section 4.3.
2. Extracting disambiguation entity set from text base $E = \{e_1, e_2, \ldots, e_t\}$.
3. Construct candidate entities set $C = \{c_1, c_2, \ldots, c_t\}$ of disambiguation entity E where $c_i = \{c_i^1, c_i^2, \ldots\}$
4. Construct the description text set of each disambiguation entity and its candidate entities $S = \{s_1, s_2, \ldots, s_t\}$
5. For s_i in S:
6. Obtain features according to section 4.4
7. Sign c_i^j Category label for $label_i^j$
8. for e_i in E:
9. for c_i^j in e_i:
10. Using One-class SVM to obtain $f(c_i^j)$

11. if $f(c_i^j) == -1$ and $label_i^j == -1$
12. $e_i \leftarrow c_i^j$
13. else
14. $e_i \boxplus c_i^j$

---

5 EXPERIMENT AND RESULT ANALYSIS

5.1 experimental data

To verify the algorithm proposed in this paper, the selected knowledge base was DBpedia[12] which is a structured knowledge base extracted from Wikipedia and contains entity information in many fields and has high data quality. Therefore, the knowledge base used in this paper was the English version in April 2015. The dictionary information obtained by parsing DBpedia is shown in Table 4.

Table 4 The number of entries in the dictionary

dictionary type	number of entries
synonyms dictionary	7332543
ambiguous dictionary	924380

Reuters news corpus from nltk was used as text database and statistics of entity information obtained from it are shown in Table 5.

Table 5 Statistic information of entities in experiment

data type	quantity (piece)
disambiguation entity	1245
candidate entities	21961
average number of candidate entities per disambiguation	17.64

5.2 evaluating indicator

The evaluation indicators of experiment were accuracy rate P, recall rate R and comprehensive index F1 value. The accuracy rate P is the ratio of the number of correctly labeled linked entities to the number of linked entities.

$$P = \frac{P_1}{P_1 + N_1} \quad (8)$$

Recall rate R is the ratio of the number of linked entities correctly labeled to linked entities.

$$R = \frac{P_1}{P_1 + N_2} \quad (9)$$

F1 is a comprehensive trade-off between accuracy and recall.

$$F1 = \frac{2 \times P \times R}{P + R} \quad (10)$$

where:

P1 was the number of correctly marked linked entities.

N1 was the number of non-linked entities while correctly marked.

N2 was the number of linked entities that were wrongly marked.

5.3 Analysis of experimental results

For the entity linking method proposed in this paper, the main parameters were the number of topics K and the dynamic window updating times W. Prior parameters α and β were set as empirical value 0.1.

5.3.1 The influence of K in experiment.

In the experiment of entity linking in dynamic topic model, different topic number K was set and the broken line of experimental results with K value is shown in Figure. 4. Shown as the results, when the number of topics was set

as 8, evaluating indicators of linking system were the best. However, it shown a downward trend when K was greater than 8. This is because if the length of the text set was constant, when increasing the K value, the ability of matching topic of model tends to be fuzzy which caused the evaluation indicators decreased.
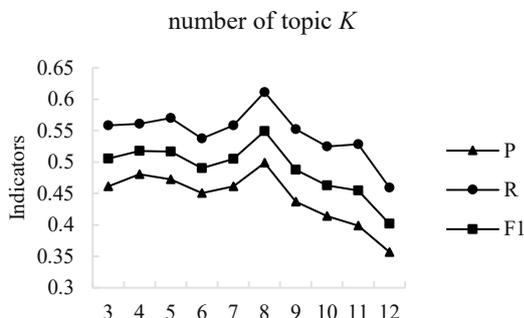
number of topic *K*

Figure. 4 Influence of topic number K in the experiment

5.3.2 Influence of window update times W on experimental results

In this section, different window update times W was set. According to the previous experiment, when the number of topics was set to 8, the result of the experiment performed best. Therefore, in this experiment, the number of topics K was set to 8 as previous. The broken lines of experimental results with W value was shown in Figure. 5.

frequence *W* of window updating
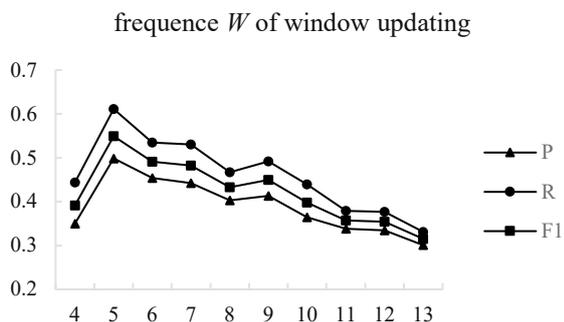
Figure.5 Influence of window number W in the experiment

Shown as the experimental results, when the update times were set to 5, each indicator performed best. With the increasing of window update times, each indicator shown a downward trend, but the decline speed was slow, and the tend to be stable in a certain range. The reason is when the update times reached a certain threshold, the topic distribution of the previous window tended to be stable, which made the topic distribution used in the current window was close to that of the previous window However, with the increase of the number of updates, the decline speed of each indicator became faster. This is because when the number of window updates was set lagger, the length of the window becomes smaller. When a relatively large number of topics was set in a small window, the matching ability of the model to topics was limited, so the decline of each indicator became faster.

5.4 Comparison with other algorithms

In addition to the GS mentioned above, there are also variable Bayes (VB [8]) which are the most popular parameter derivation methods. Therefore, to prove the effectiveness of the proposed algorithm, a comparison was made with these two parameter derivation methods. In the link framework, the topic modeling part was replaced by GS and VB. The number of window updates was set to 5 according to the result of 5.3.2. The experimental result was shown in Table 6.

Table 6 Compare to the other models

K	dynamic topic model			Gibbs			VB		
	P	R	F1	P	R	F1	P	R	F1
3	0.461	0.559	0.505	0.395	0.488	0.436	0.509	0.618	0.558
4	0.481	0.561	0.518	0.405	0.521	0.456	0.414	0.530	0.465
5	0.473	0.570	0.517	0.475	0.619	0.537	0.426	0.618	0.505
6	0.451	0.538	0.490	0.338	0.464	0.391	0.399	0.456	0.426
7	0.461	0.558	0.505	0.341	0.480	0.399	0.229	0.371	0.283
8	0.499	0.611	0.549	0.306	0.434	0.359	0.282	0.475	0.354
9	0.437	0.552	0.488	0.271	0.439	0.335	0.318	0.590	0.413
10	0.414	0.525	0.463	0.292	0.416	0.343	0.307	0.575	0.400
11	0.399	0.528	0.455	0.301	0.493	0.374	0.255	0.491	0.335
12	0.357	0.459	0.402	0.306	0.462	0.368	0.234	0.455	0.309

It can be seen from the table that for the same experimental conditions and parameters, the accuracy rate, recall rate and F1 value of comprehensive indicator of the proposed method were higher than those of VB and GS. Therefore, when using unstructured text to link entities, the entity linking method based on dynamic topic model proposed in this paper would perform better.

6.CONCLUSION

To solve the problem of missing entity properties and inconsistent expression in entity linking, this paper proposed an entity linking method based on dynamic topic model to disambiguate the entity with unknown reference in text. The method used the unstructured text of the entities, added windows for the text dynamically and obtained hidden parameters. At the same time, it used outlier detection method and One-class SVM to complete entity link on real data. Finally, it compared with traditional methods. The experimental results showed that the proposed method could obtain the potential semantic information of unstructured text better than the traditional methods and distinguish entity linking effectively.

However, the method proposed in this paper still has some shortcomings. For example, the effective information obtained is less when extracting unstructured information for short text. Therefore, in the future work, this paper would further the topic information for different length of text to make the link effect performed better.

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Research on The Art Innovation of Ceramic Clay Sculpture Dog Pottery

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Abstract: Clay sculpture dog, also known as "Ling Dog", is the general name of the mud toy in Huaiyang County, Henan Province. With the aim of "industry wins, culture goes further", this paper studies the innovation of Clay sculpture dog. While excavating the artistic spirit connotation and contemporary value of Clay sculpture dog, the author tries to endow the traditional Clay sculpture dog form with ceramic materials on the premise of keeping its original characteristics. While protecting the cultural characteristics of Huaiyang Clay sculpture dog, it instill fresh blood to make it more characteristic of The Times, enhance the cultural competitiveness of Clay sculpture dog, and better realize the cultural inheritance and development of Clay sculpture dog.
Key words: Clay sculpture dog; Ceramic; The cultural industry

1. CERAMIC CLAY SCULPTURE DOG OVERVIEW

Clay sculpture dog, as a unique folk mud play, is unique to Huaiyang County, known as "the first dog in the world", "true totem", "living fossil", "living this mountain and sea classics". Due to the problem of the mud material, the Clay sculpture dog is fragile and hard to preserve for a long time, resulting in the continuous loss of production groups and a great impact on the audience market. Although the material of Clay sculpture dog has changed, the shape, color and meaning of Clay sculpture dog have not changed. Therefore, Clay sculpture dog has certain artistic and social value.

The shape of Huaiyang Clay sculpture dog is more primitive, with rich and gorgeous colors. Its artistic language is exaggerated and unique, which gives people a strong sense of shock and mystery. However, due to the Clay sculpture dog material, it is easy to crack and break, which greatly affects its audience market.

Based on "zhiyuan industry winner, culture" for the purpose, revolves around ceramic Clay sculpture dog innovation research, to exploit the spiritual connotation of the Clay sculpture dog art and contemporary value, try to the modelling of Clay sculpture dog, decorations and colors are retained the original appearance of ancestral, and retains the Clay sculpture dog the characteristics of local, regional, totem and ancestor worship, on the premise of keep the characteristics of the true, given the traditional Clay sculpture dog form with modern connotation of clay, ceramic Clay sculpture dog walking into the life of modern people will with the characteristics of easy to save, have a certain industrial development space.

2.THE PRACTICE OF FIRING CERAMIC CLAY SCULPTURE DOGS

The making method and technological process of Clay sculpture dog are unique. The material is made of local clay in Huaiyang county, which is usually molded, sculpted, and then dried, fired, colored and other processes. To make Clay sculpture dog, the first is to select the soil, to use the local gelatinous clay, which contains very little sand, soft and fine, can be strong plastic, dry after firm and not easy to crack. The second is to practice the soil, that is, in clay add appropriate amount of water, repeatedly beat, smashed knead, practice good place for use. Traditionally, Clay sculpture dog were made by hand and later individually modeled. The Clay sculpture dog kneading type is to puncture and seal, as well as detail repair and other procedures. The process is then dried, fired, blackened, painted and, in some cases, varnished.

The production process of Clay sculpture dog is as follows:

(1) Soil selection. The soil needs careful choice. Artisans usually choose sticky and delicate clay as the raw material.

(2) Soil training. Add an appropriate amount of water and beat on the flat surface repeatedly with a wooden or iron bar until even. Practice good mud to achieve no mud nail in the mud, dry and wet uniform. In order to make the mud more viscous and tough, cotton batt, paper or honey are sometimes added to the mud to increase its toughness. After the mud is refined, it is wrapped with impermeable canvas or film to prevent the soil from drying out, and can be taken as needed.

(3)Knead billet. According to the creation needs, take an appropriate amount of clay and knead it into the shape. Then, put the kneaded Clay sculpture dog in a cool place and slowly air out the water. When the softness is right, stamp and puncture it. Turning over mold is another method of making Clay sculpture dog. Although it increases the output, it reduces the artistry and appeal of the work to a great extent.

(4) Puncture and seal. The piercing and stamping are usually done together. The kneaded mud is usually left to air for a long time before the holes are punched and sealed with the artist's seal. Among them, puncture is a necessary procedure for Clay sculpture dog. The puncture will sound when the dog blows with its mouth, which is also one of the standards to measure the level of an artist. In the past, it was not the custom to seal the dog. The seal is a product of attaching importance to and protecting intellectual property rights and commodity marks under the influence of market economy. Stamp sealing has been popular in the local area for more than 10 years, only the more famous artists have the habit of using the seal as a symbol.

(5)Let dry. Put the sealed Clay sculpture dog in the shade and let it dry. The length of time for the mud billet to dry varies. Generally, it takes about a week for the small

volume, half a month or even longer for the large volume. At the same time, the speed of wet and dry will also be affected by the weather and the season.

(6) Firing. After the Clay sculpture dog is dried, the kiln is installed. Note that the work should be placed in a space to facilitate the smooth flow of fire and uniform heating. Before firing, preheat twice:

For the first time, the kiln door was half opened after the kiln was ignited, which made the temperature rise gradually. If the kiln door is closed, the temperature will rise too fast and the clay tires will burst easily. Raise the temperature to 100℃ for 1 hour, then cease fire and close the kiln door for 3 hours.

The second preheating adopts the same method to raise the temperature to 200℃, cease fire and hold the heat for 6-7 hours, which can completely remove the adsorbed water in the work.

Preheat twice and then fire again. The firing temperature curve should be determined according to the water content of the body, the size of the product and the thickness of the body.
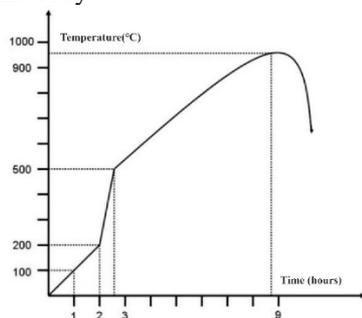
Generally, the temperature is about 150-200℃ per hour. Please note that the kiln door should not be closed after ignition. After the temperature rises to 500℃, the kiln door can be closed after the clay crystallization water is removed from the billet. If the kiln door is closed before 500℃, the blank body is very easy to burst. This stage is critical. After 500℃, the kiln door should be closed and the kiln should be fired for 5-6 hours at a temperature of 950℃ or so. The fire brake should be closed and the temperature should drop to 150-100℃ before the kiln can be opened.

(7) Black and painted.

Dye black, paint the finished product with the cooked black, usually once or twice, and then dry it or dry it in the sun. This process takes about an hour, after which other colors can be applied.

Color painting, now color painting with more advertising color. It can be dried in 10 minutes on sunny days. The Clay sculpture dog, which had previously been painted and easily faded by hand, developed the idea of painting the color into the indentation, thus greatly avoiding this shortcoming. The pigment used in this experiment is propylene, which avoids the defects of decoloration and fading due to damp.

3.VALUE ANALYSIS OF CERAMIC CLAY SCULPTURE DOG

3.1 The artistic value of ceramic Clay sculpture dog

The shape, ornamentations and colors of Clay sculpture dogs retain the original shape inherited by their ancestors.

Clay sculpture dog's illusory and grotesque, exaggerated and ancient modeling, bright and striking, calm and warm colors, varied, bold and plain decorations, and the artists' rich artistic imagination and non-stick expression techniques are in line with the Traditional Chinese aesthetics.

3.1.1 Beautiful shape.The subject matter of Clay sculpture dog is wide, unreal and weird, and the modeling of natural body beyond reality is the vivid representation of artists' needs and imagination according to reality and concept, as well as the artistic intuition and exaggerated concept. To sum up, the shape of Clay sculpture dog has realistic and freehand, decorative and illusory, symbolic and stylized aesthetic characteristics.

3.1.2 Beautiful colors. Traditional huaiyang Clay sculpture dogs with black bottom mud in the domestic most folk play clay sculpture. Our is unique, and ceramic Clay sculpture dogs also inherited the mud unique coloring traditional black apply five colors, with black as the background, the above in white, red, blue, yellow color, the color green set each other off, red and white, contrast and especially composed warm.

3.1.3 Decorative beauty. There is no established pattern for making Clay sculpture dog decorations.

"Dots" and "lines" are the basic elements, mostly decorated on the abdomen, chest, wings and back. Artists "use symmetry and balance, change and unity of the principles of beauty in form, using engraving, carving, carving, painting, stacking, printing and other techniques of expression, take the image, so that each shape strange, lifelike.

3.2 The social value of ceramic Clay sculpture dog

As a unique folk art derived from the original totem culture, the shape and color of the dog have remained unchanged for thousands of years. As a kind of cultural and creative product, Clay sculpture dog has improved the shortage of rough and hard preservation of clay material. The application of ceramic material to the production of Clay sculpture dog enables the Clay sculpture dog to be preserved for a long time and to show its artistic charm in the future across the boundary of time. Making Clay sculpture dogs in the form of pottery is conducive to the development of the cultural and creative industry of Clay sculpture dogs, promoting the development of local tourism and economy, and creating more economic benefits.

Ceramic Clay sculpture dog compared with the traditional Clay sculpture dog, its product sales and raw material supply basically unchanged, its one of the most obvious difference is that a qualitative change from the clay for ceramic, the process is not complicated, tooling cost is not high also, however, due to the change of the material, reduce the Clay sculpture dog in the process of transportation damage rate, prolong the Clay sculpture dog kept fixed number of year.If the production scale is expanded, the technical difficulty coefficient is not very strong, the production and operation cost is not very high, the site selection, the operation of the technical scheme, as well as the total amount of funds and financing are not difficult problems.

Clay sculpture dog is the self-improvement of Clay sculpture dog, and the integration of modern elements on the premise of retaining the original artistic features, so that Clay sculpture dog has its own development power, which is more conducive to realizing the economic value of Clay sculpture dog, forming Huaiyang brand effect, and promoting the regional brand construction. The cultural, regional and irreplaceable nature of Clay sculpture dog is integrated into Chinese pottery culture, making it more value-added in economy. The cultural industry represented by Clay sculpture dog is an indispensable link in Huaiyang tourism and cultural industry, and Clay sculpture dog will have a broad market prospect and development space.

4.CONCLUSION

A nation with a history is easy, a country with culture is rich, a region with a story is legendary. There is a deep sense of national identity in Huaiyang Clay sculpture dog culture. Protecting, inheriting and developing Clay sculpture dog culture can promote people's identification of national values, spiritual feelings, and promote harmony between people and society. The branding and industrialization of Clay sculpture dog is not only the preservation and development of the folk art of Clay sculpture dog, but also the inheritance of Chinese culture.

It is also an important way to protect the intangible cultural heritage and enhance the confidence of the Chinese nation. Let the Clay sculpture dog who has stepped through a thousand years of history face the world with easy steps, and walk towards the future with more fruitful posture.

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Calligraphy Style Layer Representation and Classification

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Abstract: The acquisition of writing skills is obtained by observing and copying examples with specified styles currently, these style-specified works are retrieval by its labeled metadata, instead of by the content of the image. This is because calligraphic artist describes calligraphy style emotionally, and cannot translate into computer language directly. Therefore, this paper proposes a computational way for calligraphy style representation: firstly, hierarchical features are extracted from works, individual characters and composed strokes to build calligraphy style model and to classify different styles. The style classification of 1000 single-word images and 1200-page images is carried out respectively. Compared with various style classification algorithms, the classification effect has obvious advantages. The computational calligraphy style representation and classification method can help learners observe and know calligraphy works better. It can also help to discover latent calligraphy group.
Keywords: Calligraphic style; Feature extraction; Style recognition; Neural network; Standard font classification

1. INTRODUCTION

Although the popularity of electronic equipment has reduced the chance of handwritten characters in daily life and production, the writing skills of characters are still taught in primary and secondary schools all over the world. Different nationalities and schools have different styles of handwritten characters. The current screen can not only display printed characters, but also display characters of different fonts, even calligraphy characters of different styles. However, there is still a lack of quantitative expression of the specific features and internal relations between these different styles of writing. The description of writing style is still subjective and lacks objective description. When learning writing skills, learners usually observe and copy the selected Calligrapher's works continuously. If the time of writing observation is long, it will produce the feeling of "seeing the characters as the face", that is, they can identify the works of the designated calligraphers. This is because calligraphers of the same school have similar brush writing habits, knot body embodiment and layout habits. This paper simulates the psychological process of human learning and appreciating calligraphy, and expresses and classifies calligraphy styles. In the field of image, the research on font style is increasing in recent years, but most of them focus on hard pen handwriting. Although the research objects of hard pen handwriting and soft pen handwriting are different, there are many similarities. A personalized handwritten font generation system-scfont [1] is proposed by Lian

Zhouhui research group. Users only need to input a small number of handwritten characters to systematically learn their own handwriting style and generate a large number of personalized handwritten font databases.

The differences of individual styles are mainly reflected in the change of stroke style, stroke layout, stroke width and the connectivity of two consecutive strokes. On the basis of the personalized handwritten font database, scfont system generates personalized style works. In the generated works, the same characters in different places use the same character model in the font library, and the same strokes in different characters use the same stroke model. This does not work in calligraphy works, because even if it is written by the same person, calligraphy should not be identical and pursue change. The images of each character in calligraphy works are different. For example, there are 20 'Zhi' in the 324 character preface to 'Lanting', with different writing methods and each of them is different. In other words, the style of calligraphy is not only reflected in the characteristics of strokes, but also in the composition and the whole character. But the expression of hard pen handwriting style can be used for reference in this system.In terms of soft brush calligraphy style, Zhuang Yueting's research group proposed the late style model to explore the writing style of calligraphy works [2]. They use the 32 dimensional character texture features extracted by Gabor filter to define writing style, express the extracted calligraphy style as a polynomial probability distribution of visual words, and then use polynomial fitting approximation function to construct potential style model; finally, calculate the contribution value of visual words to the expression of calligraphy style, and complete the classification of calligraphy style with the help of style similarity of visual words. Zhang Yi et al. Extracted three types of features: location feature, region feature and projection feature to establish global feature descriptor for calligraphy style recognition [3]. The position feature focuses on the balance of the whole character, the proportion feature highlights the relationship between the stroke distribution and stroke, and the projection feature represents the balance between the horizontal direction and the vertical direction.These three types of features take into account the similarities within the same type of fonts and the differences between different types of fonts, but they are all overall features, and stroke features are not considered. Zhang Fucheng et al. Proposed an algorithm based on convolutional neural network, which integrates the two processes of feature extraction and classification recognition to automatically extract style features and classify them [4].The model can identify four types of regular script style calligraphers

(Yan Zhenqing, Liu Gongquan, Ouyang Xun, Zhao Mengfu) and achieve good classification results. Although the characters are different, there are still some similarities in the research of font style at home and abroad. For the study of Latin, turialba uses handwriting features and calligraphy features to identify handwriting, and introduces five single character level features and seven letter level features to represent the writing style of characters [5]. Among them, the letter distance and the change of letter size in a word are single character level features, which are similar to those of the style of calligraphy. In the field of English, srihari establishes a model to study handwriting. It combines global features and local features to determine whether the two types of handwriting are written by one person. In the above studies, researchers only select a certain aspect in the style expression, and do not comprehensively combine the overall characteristics and local features for style representation.

In this paper, a novel classification method of calligraphy style features is proposed, which represents the calligraphy style from the three levels of composition, whole character and stroke. From the calligraphy page image to obtain the composition features, from the single character image to extract the structure feature, from the single character image to extract the stroke feature, construct the style model, and classify the calligraphy style.

2. SYSTEM ARCHITECTURE

The framework of calligraphy style expression and classification proposed in this paper is shown in Figure. 1.
1) Expression of style features: extract the stroke, knot and structure of the data source image, construct the model, and train to get the regular script style classification model.
2) Style Classification: according to the calligraphy image input by users, the features of stroke, knot and structure are also extracted, and the classification results are fed back to users by using the calligraphy style classification model.
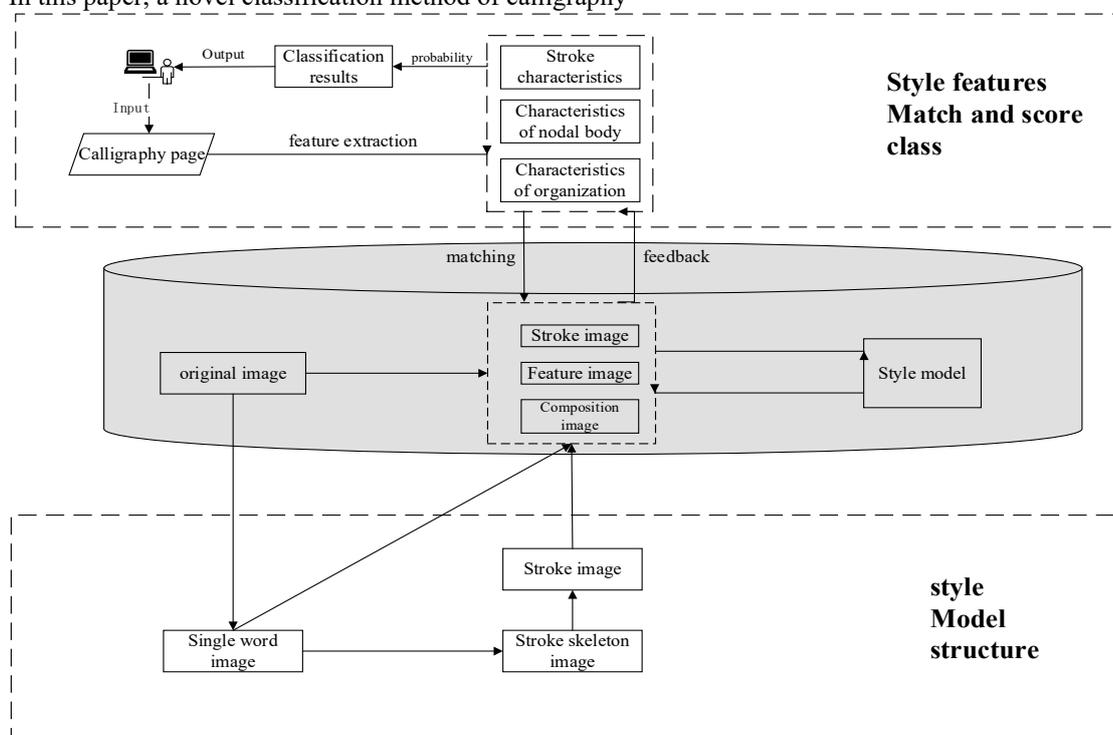
Figure. 1Ccalligraphy style expression and classification framework

3.EXPRESSION OF CALLIGRAPHY STYLE

In this paper, we use the layered method to express it from the stroke level, the knot level and the composition level. The style of Stroke layer mainly refers to the change of strokes when writing, the style of knot layer mainly refers to the characteristics of calligraphy on single characters, and the style of composition layer refers to the layout of characters in the page.

3.1 STROKE LAYER STYLE

The main character of calligraphy is the basic character of calligraphy. The characteristics of stroke level in this paper can be divided into two levels: the first layer is the basic trend of strokes, and the second layer is the ending situation under the basic trend.

3.1.1 STROKE EXTRACTION

Stroke trend is an important style feature. In this paper, the direction chain code is used to express the stroke trend, as shown in Figure 2. P in Figure 2 (b) is the current pixel.
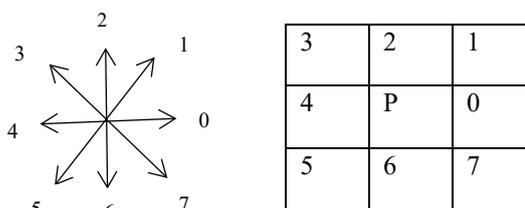
Figure. 2 Eight neighborhood directional coding

Stroke is the basic element of a single character and carries the most important style information. First, the calligraphy page image is segmented to get the single character, and then the stroke is extracted from the single character. The

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single character image is obtained by segmenting the page image as shown in Fig. 3 (a) by using the word gap, and then the single word image is binarized by Otsu method to obtain the single word as shown in Fig. 3 (b). Then, Zhang Suen thinning algorithm is used to obtain the stroke skeleton as shown in Fig. 3 (c). According to the skeleton (3) and [7], we extract the stroke width based on the skeleton.

Original image (b) single character binary image (c) skeleton image (d) stroke with width
Figure. 3 Sketch of stroke extraction

3.1.2 STROKE STYLE EXPRESSION

From thick to thin, the expression of strokes can be divided into two levels: the first layer is the basic movement trend of strokes, generally speaking, it is any of the horizontal, vertical, skimming and pressing; the second is the way of finishing strokes, such as whether there is a hook at the end of the horizontal strokes to form a "horizontal hook".

One level stroke classification

Suppose that single stroke skeleton chain codes $snake_i = a_1 a_2 ... a_j$ and $Type(snake)$ are recorded as stroke category calculation formula, and the formula is defined as formula(1):

$$Type(snake_i) = \{argmax\ c\ ount[n]\}\ mod\ 4 \quad (1)$$

Where $Type = 0, 2, 1, 3$. The main trends of strokes correspond to horizontal, vertical, skimming and pressing strokes, as shown in Table 1.

Table 1 stroke chain code display

Type	Chain code
transverse	00012000001000123
vertical	222222221222232222222
Skim	111121212151115112111

The first layer of strokes is the main stroke, which direction accounts for a high proportion is determined as that direction. In fact, different ending treatments under the same main stroke will present different states. For example, the vertical hook in Figure 3 (c) is determined as vertical according to the definition of formula (2), but it is actually called "vertical hook". Therefore, on the basis of one layer strokes, two layers of strokes are divided according to the ending. In a layer of strokes, the vertical hook and the vertical pen belong to the same category. The difference is that the appearance of the "hook" at the end of the chain code will affect the proportion of 2 and 6 codes in the direction coding. Similarly, "horizontal hook" also has a similar situation. The horizontal pen purity and

vertical pen purity are used to distinguish the horizontal hook and the horizontal pen, and the vertical hook and vertical pen are defined as formula(2):

$$\begin{cases} H_{ratio} = \dfrac{count[0] + count[4]}{length} \\ V_{ratio} = \dfrac{count[2] + count[6]}{length} \end{cases} \quad (2)$$

3.1.3 STROKE FEATURE EXPRESSION

The same school of calligraphy, because of long-term copying, has the same writing habits. According to the characteristics of calligraphy writing, the style features are extracted from three levels of strokes, knot style and composition

Pen width change

The change information of stroke width is an important feature of style classification. The minimum bounding area of strokes is used to calculate the width of the M skeleton point. Taking the current point p_m^{wid} as the center, draw a line every 2° to get 180 pairs of intersection points, and select the combination with the shortest distance is defined as formula (3)

$$d_m = min\ |\ p_{n,1}p_{n,2}|, n = 1, 2, \dots, 180 \quad (3)$$

The slope can show the trend characteristics of strokes. The slope k is defined as the coordinate of the straight line connecting the starting point coordinate (x_s, y_s) and the ending point coordinate (x_e, y_e) is defined as formula(4).

$$k = \frac{y_e - y_s}{x_e - x_s} \quad (4)$$

The relative disturbance degree of strokes [8] can show the characteristics of starting and receiving strokes, which is a stroke morphological feature. The relative disturbance degree is defined as the area formed by the line connected with the skeleton stroke starting point.

The calculation of the disturbance area is equivalent to calculating the number of pixels in the disturbed area, that is, we can replace the disturbance area by calculating the distance from each point on the skeleton to the straight line. The formula is defined as formula (5):

$$f \sum_{i=0}^{N} \frac{|Ax_i + By_i + C|}{\sqrt{A^2 + B^2}} \Bigg|_{var} \quad (5)$$

where $A = y_{ie} - y_{is}$, $B = x_{ie} - x_{is}$, $C = x_{is}y_{ie} - x_{ie}y_{is}$.
N is the number of skeleton points, and (x_i, y_i) is the coordinate of point i. $(x_{is}, y_{is}), (x_{ie}, y_{ie})$ is the coordinates of the starting point and the ending point of the skeleton stroke.

Different styles of similar strokes have similar shapes, but due to the different writing habits of calligraphers, the twisting degree of strokes is different. In this paper, stroke entropy is used to characterize the degree of stroke distortion. Through the relative chain code of skeleton strokes, the calculation process is defined as formula (6).

$$\begin{cases} E = -\sum_{i=0}^{7} sd[i] \times log(sd[i]) \\ sd[i] = \dfrac{count\{code[j] == i}{length} \end{cases} \quad (6)$$

Where, length is the length of the skeleton stroke relative

to the chain code, and code[j] is the coding value of the j position of the chain code.

Each calligrapher has different starting and finishing strokes. For example, the horizontal pen of Yan style tilts 45 ° at the beginning and droops downward when the pen is closed, and the Liuti pen starts vertically, but there is no obvious downward trend.

After extracting the long horizontal strokes, the first 1 / 5 and the last 1 / 5 of the skeleton stroke chain code are selected to calculate the ratio of 2 and 7, is defined as formula(7).

$$H_{type} = \frac{count[2] + count[7]}{\frac{2}{5} length} \qquad (7)$$

As typical strokes, horizontal and vertical strokes contain Calligraphers' strong personal writing style. For example, the horizontal and vertical strokes of the face are relatively thick, but the willow style is not obvious. Let m and n be the number of horizontal strokes and vertical strokes respectively. The thickness ratio of horizontal and vertical strokes is defined as formula(8):

$$S = \frac{\frac{1}{m} \sum_{i=1}^{m} w_{hi}}{\frac{1}{n} \sum_{j=1}^{n} w_{nj}} \qquad (8)$$

3.2 WHOLE WORD LAYER STYLE

The character level feature is knot feature, which is the structural form of font, that is, the stippling arrangement in each character. The same strokes and different knot style calligraphy characters have different styles. For example, the facial style is relatively fat, the European style is thin and long, and the Zhao style is broad and graceful. These descriptions are the characteristics of the calligraphy style. In this paper, from the following characteristics of calligraphy character knot body characteristics are characterized.

3.2.1 KNOT SHAPE

The knot shape is defined as the height width ratio of calligraphy characters and formula (9)

$$R = \frac{h}{w} \qquad (9)$$

Among h and w are the height and width of calligraphy characters.

3.2.2 CENTER OF GRAVITY POSITION

The center of gravity of calligraphy is not in the center of the smallest bounding box, as shown in Figure 8. Due to the different writing habits of each calligrapher, the center of gravity of calligraphy characters deviates in a certain direction, and there is a certain regularity in the deviation. Otherwise, the characters formed by the combination will have a sense of "staggering". Assuming that the image function of calligraphy character is $f(x, y)$, the center of gravity $G = (\overline{x}, \overline{y})$ of calligraphy character is defined as formula (10):

$$\begin{cases} \overline{x} = \dfrac{m_{10}}{m_{00}}, \overline{y} = \dfrac{m_{01}}{m_{00}} \\ m_{pq} = \displaystyle\sum_{x=0}^{w-1} \sum_{y=0}^{h-1} x^p y^q f(x,y) \end{cases} \qquad (10)$$

Where The center of gravity of $f(x,y) =$

$$\begin{cases} 1, & (x,y) \text{ is the former scenic spot} \\ 0, & (x,y) \text{ is the background point} \end{cases}$$ becomes $G = (\frac{\overline{x}}{w}, \frac{\overline{y}}{h})$ after normalization.

3.2.3 CHANGE OF PEN SPEED

Different Calligraphers' writing habits vary in the speed of moving the brush, which is reflected in the image: the longer the brush stays at a point, the thicker the stroke will be. Therefore, when the brush is moved at a calm and uniform speed, the thickness of the stroke is uniform; when the mood fluctuates, the speed of the uniform speed varies greatly, and the thickness of the stroke changes greatly, and even appears to be white in extreme cases. Let $f_{xstress}$ and $f_{ystress}$ be the variation characteristics of pen pressure on the x-axis and y-axis, and f_{xangle} and f_{yangle} be the inclination degree of the characters on the x-axis and y-axis to represent the change of the stroke force. To simplify the representation, the second-order center distance is defined as formula(11) and (12).

$$u_{mn} = \sum_{x=0}^{w-1} \sum_{y=0}^{h-1} (x - \overline{x})^m (y - \overline{y})^n f(x,y) \qquad (11)$$

$$\begin{cases} f_{xstress} = \dfrac{u_{30}^{+}}{u_{30}^{+} + u_{30}^{-}} \\ f_{ystress} = \dfrac{u_{03}^{+}}{u_{03}^{+} + u_{03}^{-}} \\ f_{xangle} = \dfrac{u_{21}^{+}}{u_{21}^{+} + u_{21}^{-}} \\ f_{yangle} = \dfrac{u_{12}^{+}}{u_{12}^{+} + u_{12}^{-}} \end{cases} \qquad (12)$$

Among them, u30+\u30- are the ink points respectively, and are divided into two parts with the center of gravity of X axis as the boundary, and the rest are the same.

3.3 COMPOSITON STYLE

Composition refers to the overall layout of the page. The space between words and lines is harmonious, which gives people a stable and solemn visual effect.

3.3.1 PROMOTING QI

In calligraphy, Xingqi is expressed as the momentum between lines in a pair of calligraphy. Focusing on the layout of separated lines, it can be expressed as the swing degree of calligraphy characters deviated from the center line. Taking the vertical line Qi as an example, taking the abscissa of the center of gravity of the first character as the measurement standard, the starting abscissa of the rest of the calligraphy characters are on the same line with the abscissa of the first character, so the deviation degree of the other calligraphy characters is defined as formula (13):

$$LW = \begin{cases} \displaystyle\sum_{i=1}^{H} |x_i - X'| \\ \displaystyle\sum_{j=1}^{W} |y_j - Y'| \end{cases} \qquad (13)$$

W and H are the number of horizontal and vertical calligraphy characters on the page image.

3.3.2 WORD SPACING

In terms of layout, the spacing between characters and lines, lines and lines tends to be even, but not equal. Each

calligrapher does not deal with the blank space between words and lines in writing. We can define the character spacing to represent the distance between calligraphy characters. Among them, it represents the horizontal spacing of calligraphy characters and represents the vertical spacing, is defined as formula(14).

$$\begin{cases} w_h = |topx_{i+1} - bottomx_i| 1 \le i \le W \\ w_i = |topy_{j+1} - bottomy_j| 1 \le j \le H \end{cases} \quad (14)$$

Two   binary   sets

$(topx_i, topy_i), (bottomx_i, bottomy_i)$ represent the coordinates of the upper left corner and the upper right corner of the minimum bounding box, respectively.

4. STYLE FEATURE VECTOR

4.1 SELECTION OF STYLE FEATURES
The style feature vector determined above may have invalid features, which needs further analysis.

4.1.1 DATA DESCRIPTIOTable 2 shows the 30 attribute names and descriptions of the style feature dataset.

Table 2. 30 attribute names and descriptions of the style feature dataset

ID	Symbol	name	explain
x_1, x_2	E	Stroke entropy	x_1 Is the stroke entropy of the whole page. If there is no such stroke on the whole page, it is set to - 1, and this feature will be omitted during the comparison (the following cases will be treated in the same way). x_2 is corresponding to the pen.
$x_3, \dots, x_8$	μ_b	Stroke width	$x_3, \dots, x_8$ Corresponding to the average stroke width of horizontal, vertical, skimming, pressing, horizontal hook and vertical hook respectively.
$x_9, \dots, x_{14}$	σ_b	variance	$x_9, \dots, x_{14}$ represent the variation variance of stroke width corresponding to horizontal, vertical, left, right, horizontal hook and vertical hook respectively.
x_{15}, x_{16}	f_{var}	Relative disturbance	The relative disturbance of horizontal pen and vertical pen respectively.
x_{17}, x_{18}	K	Slope	It corresponds to the slope of horizontal and vertical strokes respectively.
x_{19}	H_{type}	Horizontal pen type	It indicates the features of the start and end of horizontal strokes.
x_{20}	S	Stroke thickness ratio	Represents the thickness ratio of all strokes on the page.
x_{21}	R	Knot shape	Represents the aspect ratio of the whole word.
x_{22}	G	Center of gravity position	Indicates the offset position of the whole word.
$x_{23}, \dots, x_{26}$	PE	Changes in the strength of writing	Represents the stroke handling characteristics of the whole word.
x_{27}	μ_{wb}	Stroke width of whole character	Represents the stroke width feature of a whole character.
x_{28}	σ_{wb}	Stroke width variance of whole character	Represents the change information of stroke width of whole character.
x_{29}	LW	Promoting Qi	The degree to which the calligraphy character deviates from the center line.
x_{30}	DW	Word spacing	Close to the distance between two calligraphy characters.

4.1.2 FEATURE ANALYSIS
The results (Table 2) show that the features are independent of each other and conform to normal distribution, which has statistical significance. At the same time, feature normalization is carried out, including intra class normalization and inter class normalization. First line intra class normalization: in order to reduce the information loss caused by the direct normalization of the image, after obtaining the feature vector, the data is normalized, and the extracted eigenvalues are normalized by selecting 64 * 64 according to the mean approach. Compared with the direct normalization of the image, the error caused by changing the original image can be avoided. Then, the Z-score method is used to normalize the feature data to 0-1, which can reduce the influence of the huge difference of feature values on the classification accuracy and speed.

4.1.3 FEATURE SELECTIO
The ReliefF algorithm is used to calculate the weight of each feature, and the feature whose weight is less than a certain threshold is removed. In order to reduce the influence of different random samples on the result weight, the average weight value of 20 runs is used. Table 3 shows the attributes with the top eight feature weight means. The

weight threshold was 0.0332.

Table 3 Mean value of characteristic weight

attribute	Weighted mean
Stroke entropy	0.1079
Stroke width	0.0832
variance	0.0787
Knot shape	0.0643
Changes in the strength of writing	0.0694
Center of gravity position	0.0579
Stroke width of whole character	0.0458
Promoting Qi	0.0433

4.2 STYLE MODEL CONSTRUCTION
According to the probability distribution model of each type of calligraphy style in the training calligraphy style feature set, the calligraphy style directly affects the parameter value, which can effectively describe the calligraphy style characteristics.In this paper, BP neural network is used to construct the calligraphy style classification model, and the combination of genetic algorithm is used to improve the calculation speed and accuracy of the model[9-11].

4.2.1 BP NEURAL NETWORK MODEL
In this paper, a three-layer BP neural network is used,

including input layer, hidden layer and output layer. Each layer is fully connected, and there is no connection in the same layer. After learning samples are input, the weights and deviations of the network are adjusted and trained repeatedly by using back propagation algorithm to make the output vector and the expected vector as close as possible.set up$X = (x_1, x_2, \ldots, x_i)^T$ Represents the image feature set corresponding to network input, $X = (x_1, x_2, \ldots, x_i)^T$ There are five types of calligraphy styles. BP neural network includes two sub processes: forward transfer and reverse transfer.Set the hidden layer output variable vector group as and the output layer output vector group as$Y = (y_1, y_2, \ldots, y_m)^T$ The expected output vector group is $D = (d_1, d_2, \ldots, d_i)^T$ The weight matrix from input layer to hidden layer is$W = (w_1, w_2, \ldots, w_m)^T$ The weight matrix from hidden layer to input layer is$V = (v_1, v_2, \ldots, v_i)^T$ .For the output layer, there are defined as formula (15):

$$\begin{cases} h_t = f(s_t) & (t = 1, 2, \ldots, i) \\ s_t = \sum_{j=1}^{m} v_{jt} y_j & (t = 1, 2, \ldots, i) \end{cases} \tag{15}$$

For hidden layers, there are defined as formula (16):

$$\begin{cases} y_j = f(s_j) & (j = 1, 2, \ldots, m) \\ s_j = \sum_{r=1}^{m} w_{rj} x_r & (j = 1, 2, \ldots, m) \end{cases}$$

Among them, $f(x)$ is defined as formula (17):

$$f(x) = \frac{1}{1 + e^{-x}} \tag{17}$$

The error function is defined as formula (18):

$$E(w, v) = \frac{1}{2} \sum_{j=1}^{m} (d_j - y_j)^2 \tag{18}$$

The weight adjustment is defined as formula (19):

$$\begin{cases} \Delta w_{jt} = -\eta \dfrac{\partial E}{\partial w_{jt}} \\ \Delta v_{jt} = -\eta \dfrac{\partial E}{\partial v_{jt}} \end{cases} \tag{19}$$

4.2.2 CLASSIFICATION MODEL OF CALLIGRAPHY STYLE

1) Determine the number of input layer, hidden layer and output layer nodes.
According to the five types of calligraphy styles, the number of output layers is 5, and the hidden layer is 5.
2) The model algorithm flow is as follows:
Input: 30 dimensional features of calligraphy image to be classified.
Output: classification of calligraphy styles.
1.The feature data are normalize.
2. Network initialization.The weight matrix W and V are assigned random numbers by ourselves. The error E is 0 and the learning rate is 0.1.
3.Input layer input sample data to calculate the activity of hidden layer.
4.Calculate the output layer activity.
5.The output value of the model is compared with the actual value, and the error is calculated.
6.Back propagation, calculate the error of hidden layer.
7.Modify the weights between output layer and hidden layer, input layer and hidden layer respectively $w_{jt} \backslash v_{jt}$.
8.Modify the error.
Repeat steps 2 and 7 until the number of iterations reaches the upper limit or the error of the output layer reaches the threshold.

4.2.3 OPTIMIZATION OF CALLIGRAPHY STYLE MODEL

In order to avoid too much work and improve the calculation speed, genetic algorithm is applied to the classification model to optimize the threshold and weight of BP network to overcome the advantages of BP network.In this paper, the genetic algorithm is used to search the global quickly, and then the BP network is used to search the local optimum when reaching a certain convergence region to get more accurate classification results.

The experimental results show that the target error is obtained by training the BP neural network 126 times, and the classification accuracy is 95.33%. After the optimization, the target error can be obtained after 11 times of training, and the classification accuracy is 97.48%. Through the optimized style classification model, the calculation speed is fast, and the classification accuracy is more accurate.

5. EXPERIMENTAL RESULTS AND ANALYSIS

5.1 EXPERIMENTAL ENVIRONMENT

This experiment uses Visual C++, QT is used to design the program interface, and the backstage database version is mysql8.0.

5.1.1 DATA SOURCE

The original data used in the experiment were collected from 280 page images of Yan Zhenqing, 260 pieces of Liu Gongquan, 260 pieces of Ouyang Xun, 220 pieces of Zhao Mengfu and 180 pieces of Dong Qichang's calligraphic works in the CADAL project of China and the United States digital library. The page images are in JPG format and contain at most 100 single characters and at least 15 single characters.

5.1.2 OPERATION RESULTS

When the user enters a work page, the classification result is obtained, as shown in Figure 4.
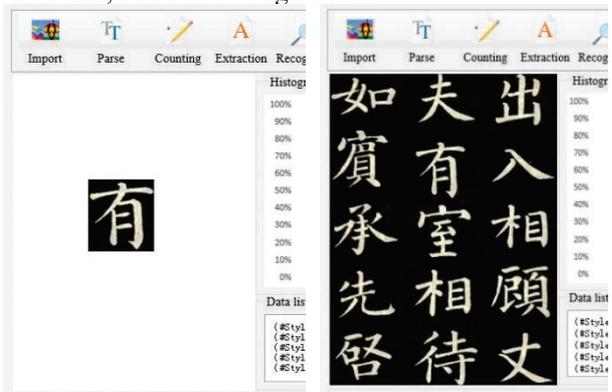
(a)Running interface - single word image (b) Operation interface
Fig. 4 system operation interface

Among them, the five categories of single character images have the highest classification probability. The first three schematic diagrams are shown in Fig 4. The third row and the third column of the third row are wrongly divided into European body, because there are similarities between European style and facial style, which leads to wrong classification in stroke characteristics. Table 5 shows the top two of the five categories of calligraphy page classification probability, but there is no wrong classification in the top ten calligraphy page classification probability.The reason is that the page is classified from three levels of stroke, knot and structure. The page contains several single characters. In the classification, the occasional misclassification of a few words has little impact on the image division of the whole calligraphy page.

Table 4 top three of single character image style probability calculation

#style1	#style2	#style3	#style4	#style5
0.9872	0.9921	0.9931	0.9879	0.9901
0.9855	0.9889	0.9917	0.9868	0.9895
0.9803	0.9872	0.9892	0.9837	0.9871

Table 5 top two of page image style probability calculation

#style1	#style2	#style3	#style4	#style5
0.992	0.987	0.985	0.991	0.987
0.990	0.983	0.979	0.989	0.984
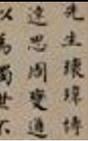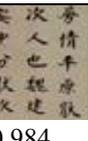
5.2 EXPERIMENTAL ANALYSIS

In order to evaluate the effectiveness of the proposed algorithm, experiments are carried out on regular script calligraphy dataset [13-16].

5.2.1 EXPERIMENTAL ANALYSIS OF SINGLE CHARACTER IMAGE CLASSIFICATION

Firstly, single character images are classified and compared according to classification accuracy. This algorithm is compared with stroke structure feature + SVM algorithm, and classification algorithm based on delay style [2], lenet-5 [19], and Google net [20]. The current experimental data set is composed of images in regular script calligraphy dataset which are cut by minimum bounding box algorithm. The normalized size is 64 × 64. Each style contains 200 single characters. It is divided into five groups and is used as training set and test set according to the ratio of 4:1. The average classification accuracy of cross experiments on five test sets is shown in Table 5 [17].

In the single word image classification, this algorithm has little advantage compared with other classification algorithms, and further carries on the comparative analysis to the page image classification experiment.

5.2.2 EXPERIMENTAL ANALYSIS OF SINGLE CHARACTER IMAGE

This experiment uses 10 times cross validation to get the average classification accuracy as the performance evaluation standard of calligraphy style classification algorithm, and also compares with the above four classification algorithms. Among them, the training set is selected from the regular script calligraphy data set, 600, 650, ..., 1100 calligraphy images are randomly selected, and the test set is the remaining image, and the average classification accuracy is obtained through ten cross experiments.

It can be seen from the above figure that when the number of samples is small, the classification accuracy rate is constantly improved, but when the number of training samples reaches 1000, the classification accuracy tends to be stable. Compared with other classification algorithms, this algorithm achieves better classification results. Table 6 shows the comparison results of the classification accuracy of this algorithm and other algorithms when the number of training samples is 1000.

From table 7, it can be found that the accuracy of the classification algorithm based on Google net and the algorithm in this paper is better than other classification algorithms, reaching more than 90%.Compared with the accuracy of single character image classification, the algorithm in this paper improves the accuracy of page image classification greatly. As mentioned above, because of the large number of single words in page image, the influence of single word error classification is small, and the fault tolerance rate is high, so the classification accuracy of calligraphy page image is obviously better than other algorithms.

Table 6 accuracy rate of single character image classification

	Stroke structure + SVM [17]	Latent style[2]	LeNet-5[19]	GoogleNet[20]	Proposed
#style1	77.00	81.41	80.40	87.12	88.90
#style2	72.00	90.28	92.42	90.54	89.30
#style3	75.00	88.30	86.58	90.08	91.00
#style4	78.00	81.80	84.75	85.35	87.35
#style5	68.00	89.21	76.85	88.25	89.65
Accuracy	74.00	86.20	84.20	88.29	89.24

Table 7 Comparison of classification results (%)

	Stroke structure + SVM [17]	Latent style[2]	LeNet-5[19]	GoogleNet[20]/	Proposed
#style1	73.00	83.25	86.28	92.33	97.90
#style2	80.00	89.78	89.64	95.67	98.30
#style3	60.00	92.25	91.30	93.00	99.00
#style4	75.00	85.28	90.63	90.52	96.3
#style5	67.00	88.85	84.55	93.44	95.9
Accuracy	71.00	87.88	88.48	93.39	97.48

Table 8 classification results

		Predicted condition				
		#style1	#style2	#style3	#style4	#style5
True condition	#style1	0.979	0.012	0.002	0.002	0.005
	#style2	0.007	0.983	0	0.005	0.005
	#style3	0.005	0	0.990	0.005	0
	#style4	0.007	0.007	0.013	0.963	0.010
	#style5	0.016	0.008	0.002	0.016	0.959

The confusion matrix of five types of regular script classification in this paper is shown in Table 8. It can be seen from the table that the Euclidean has the highest classification accuracy, and 99% can be correctly divided into Euclidean. The classification accuracy of Dong style is relatively low, and it is mostly divided into Yan style and Zhao style. The classification accuracy of Zhao style is also relatively low, and it is often mistakenly divided into European style and Dong style.The other two types of books also have wrong classification. Because the style of calligraphy is similar, there will be misclassification, but most of the styles can be classified accurately with the help of this model.

6. CONCLUSION

This paper presents a method of calligraphy style classification, which takes calligraphy image as input and classification result as output. Although the classification of calligraphy style has achieved good accuracy, there are still some problems and areas to be improved. First, it is difficult to construct the mapping relationship between feature data and strokes. Second, this paper classifies the five types of regular script, which cannot fully meet the needs of professional calligraphers. It needs to be improved automatically according to user feedback. The above two points need to be further solved in the follow-up study.

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Study on Toxicity of Cu²⁺ and Zn²⁺ to *Paramecium Caudatum*

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Abstract: The toxicity of Cu^{2+} and Zn^{2+} to *Paramecium caudatum* was studied by investigating the mortality of *Paramecium caudatum* in different mass concentrations of Cu^{2+} and Zn^{2+} and analyzing the probability units and logarithm of concentration of two ions. The results showed that the toxicity of Cu^{2+} and Zn^{2+} to *Paramecium caudatum* increased with the increase of ion mass concentration; The results of regression analysis showed that there was significant positive correlation between probability units and logarithm of concentration of two ions. The 1h half-lethal concentration(LC_{50}) value of Cu^{2+} to *Paramecium caudatum* was 0.32 mg/L, the 1h LC_{50} value of Zn^{2+} to *Paramecium caudatum* was 10.47mg/L. Cu^{2+} had more toxic effects on *Paramecium caudatum* than Zn^{2+} on *Paramecium caudatum*.
Key Words: *Paramecium caudatum*; Copper ion; Zinc ion; Toxicity; Regression analysis; Semi-lethal concentration (LC_{50})

1. MATERIALS AND METHODS

Cu^{2+} and Zn^{2+} are common heavy metals, meanwhile, they are also one of the indispensable trace elements in organisms. When their contents exceed a certain concentration, they will become one of the main pollution sources of water, which seriously threaten the health of aquatic species and human beings[1-5].

Paramecium caudatum is a typical representative species of protozoa ciliates and a common aquatic protozoa, which plays an important role in water environment ecosystem. *Paramecium caudatum* has an extremely sensitive stress system, which can truly and vividly reflect the toxic effects of chemicals in water environment. Therefore, *Paramecium caudatum* is widely used in water monitoring and it is one of the indicators of water quality monitoring[6].

LC_{50} is used as the basis for studying the toxicity of various pollutants and the sensitivity of animals to pollutants[7]. The toxicity of Cu^{2+} and Zn^{2+} to *Paramecium caudatum* was studied by investigating the mortality rate and calculating the semi-lethal concentration (LC_{50}) value of Cu^{2+} and Zn^{2+} to *Paramecium caudatum*, which provided a reliable basis for environmental safety assessment.

1.1 Materials

Paramecium caudatum: Collection from a reservoir in Chuanhui District, Zhoukou City.

1.2 Drugs for testing

$CuSO_4·5H_2O$, $Zn(NO_3)_2·7H_2O$: Two kinds of drugs were mixed into 100 mg/L mother liquor and stored in refrigerator. Dilute to desired concentration with distilled water before using.

1.3 Method

1.3.1 Collection and culture of *Paramecium caudatum*

A method described by Gao Heyi[8] was used to collect and culture the *Paramecium caudatum*. The straw solution was used as the culture solution and the *Paramecium caudatum* was cultured in a constant temperature of 25 ℃.

1.3.2 Experimental design

The approximate mass concentration range of total lethal and no death effects of Cu^{2+} and Zn^{2+} on *Paramecium caudatum* was determined by preparatory experiments, and then diluted liquids of two kinds of ions were prepared according to equal logarithmic spacing[9]. The mass concentrations of Cu^{2+} were 0.14, 0.18, 0.24, 0.32, 0.42, 0.56 mg/L respectively, the mass concentrations of Zn^{2+} were 1.8, 3.2, 5.6, 10.0, 18.0, 32.0 mg/L respectively, setting three repeat groups for each mass concentration and using distilled water as blank control group. Using 5 ml test tube as experimental container. Using capillary pipette to absorb a small amount of culture medium on the slide, using cotton thread to limit the movement of *Paramecium caudatum*, taking thirty worms, using 5 ml pipette to absorb 3 ml corresponding mass concentration test solution, the *Paramecium caudatum* on the slide was transferred to each group of test tubes with above test solution. The test tubes of each group were placed in 25 ℃ incubator for 1 h, and then the number of *Paramecium caudatum* in each test tube was counted under anatomical microscope, and the mortality rate of each group was calculated. To determine whether the data are corrected based on the presence of dead insects in the blank control group[10].

1.3.3 Method of determination

To calculate the mortality rate of *Paramecium caudatum* in each test tube of Cu^{2+} and Zn^{2+}, and to calculate the average mortality rate, to convert the average mortality rate into the probability unit according to the comparison table between percentage and probability unit. To calculate the logarithm of concentration per mass concentration, to consider probability unit as "y", and to consider mass concentration logarithm of ions as "x", the linear regression equation of probability unit and concentration logarithm was obtained by Probit method, and then the LC_{50} of Cu^{2+} and Zn^{2+} on *Paramecium caudatum* was calculated[11].

2 RESULTS AND DISCUSSIONS

2.1 Toxic effects of Cu^{2+} on *Paramecium caudatum*

Table 1 was the results of the toxic effect of Cu^{2+} on *Paramecium caudatum*. Table 1 showed that the average mortality rate of *Paramecium caudatum* increased with the increase of Cu^{2+} mass concentration, which indicated that Cu^{2+} with different mass concentrations showed different levels of toxicity to *Paramecium caudatum*.

When the mass concentration of Cu^{2+} was less than or equal to 0.18 mg/L, the average mortality of *Paramecium caudatum* was lower, so the toxicity of Cu^{2+} to *Paramecium caudatum* was lower in this concentration range, and the average mortality of *Paramecium caudatum* increased rapidly when the mass concentration of Cu^{2+} was greater than or equal to 0.24 mg/L, so the toxicity of Cu^{2+} to *Paramecium caudatum* was higher in this concentration range.

Table 1 Toxic effects of Cu^{2+} on *Paramecium caudatum*

Mass concentration / (mg/L)	Number of deaths			Average mortality rate / %	Probability unit / y	Logarithmic Concentration / lgC
	Repeat group 1	Repeat group 2	Repeat group 3			
CK(0)	0	0	0	0	--	--
0.14	2	2	3	7.7	3.57	-0.85
0.18	4	6	5	16.7	4.03	-0.74
0.24	11	14	12	41.1	4.78	-0.62
0.32	15	17	15	52.2	5.06	-0.5
0.42	18	20	19	63.3	5.34	-0.38
0.56	23	26	25	82.2	5.92	-0.25

$$y = 3.7949x + 6.8959$$
$$R^2 = 0.9766$$
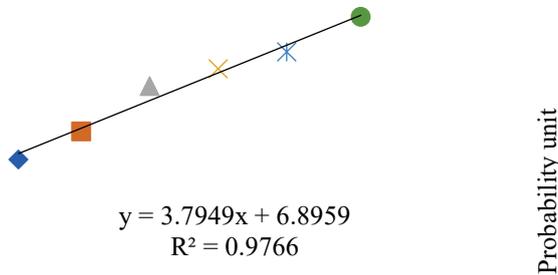
Cu^{2+} logarithmic concentration

Figure 1 Regression analysis between Cu^{2+} logarithmic concentration and probability unit

To take probability unit as y axis, and to take Cu^{2+} concentration logarithm (lgC) as x axis, doing the regression analysis on the excel, the analysis results were shown in figure 1. The figure 1 showed that there was significant positive correlation between probability unit (y) and Cu^{2+} concentration logarithm (lgC). Based on the regression equation, when y=5, the mortality rate was 50%, the 1 h semi-lethal concentration (LC_{50}) value of Cu^{2+} to *Paramecium caudatum* was 0.32 mg/L.

2.2 Toxic effects of Zn^{2+} on *Paramecium caudatum*

Table 2 was the results of the toxic effect of Zn^{2+} on *Paramecium caudatum*. Table 2 showed that there were significant differences in the toxicity of Zn^{2+} with different mass concentrations to *Paramecium caudatum*. overall, the average mortality of *Paramecium caudatum* individuals was proportional to the Zn^{2+} mass concentration. When the mass concentration of Zn^{2+} was less than or equal to 1.8 mg/L, the average mortality of *Paramecium caudatum* was lower, so Zn^{2+} had less toxic to *Paramecium caudatum*; When the mass concentration of Zn^{2+} was greater than or equal to 3.2 mg/L, the average mortality rate of *Paramecium caudatum* was significantly increased, Zn^{2+} toxicity to *Paramecium caudatum* was higher.

Table 2   Toxic effects of Zn^{2+} on *Paramecium caudatum*

Mass concentration / (mg/L)	Number of deaths			Average mortality rate / %	Probability unit / y	Logarithmic Concentration / lgC
	Repeat group 1	Repeat group 2	Repeat group 3			
CK(0)	0	0	0	0	--	--
1.8	4	2	2	8.9	3.65	0.26
3.2	10	7	8	27.8	4.41	0.51
5.6	12	10	10	35.6	4.63	0.75
10.0	16	14	13	47.8	4.94	1.00
18.0	20	18	18	62.2	5.31	1.26
32.0	25	23	22	77.8	5.77	1.51

Probability unit

$y = 1.5552x + 3.4138$
$R^2 = 0.9718$

Zn^{2+} logarithmic concentration
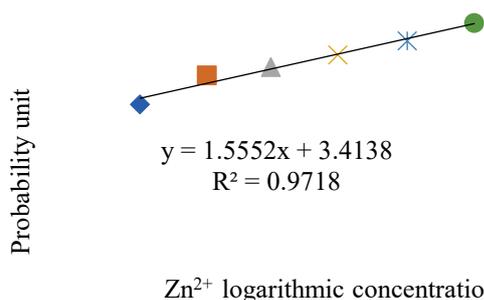
Figure 2 Regression analysis between Zn^{2+} logarithmic concentration and probability unit

To take probability unit as y axis, and to take Zn^{2+} concentration logarithm (lgC) as x axis, doing the regression analysis on the excel, the analysis results were shown in figure 2. The figure 2 showed that there was significant positive correlation between probability unit (y) and Zn^{2+} concentration logarithm (lgC). Based on the regression equation, when y=5, the mortality rate was 50%, the 1 h LC_{50} value of Zn^{2+} to *Paramecium caudatum* was 10.47 mg/L.

3. CONCLUSION

(1) There were obvious dose effects between Cu^{2+} and Zn^{2+} mass concentration and its toxicity to *Paramecium caudatum*. With the increase of Cu^{2+} and Zn^{2+} mass concentration, the toxicity to *Paramecium caudatum* increased gradually.

(2) There was significant positive correlation between the probability unit and the Logarithmic concentration of Cu^{2+} and Zn^{2+} by regression analysis.

(3) The 1 h LC_{50} value of Cu^{2+} to *Paramecium caudatum* was 0.32 mg/L, the 1 h LC_{50} value of Zn^{2+} to *Paramecium caudatum* was 10.47 mg/L.

(4) Cu^{2+} had more toxic effects on *Paramecium caudatum* than Zn^{2+} on *Paramecium caudatum*.

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Colorectal Polyp Detection Method Based on Faster_R_CNN And Attention Mechanism

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Abstract: Colorectal cancer is one of the most common malignant tumors in China. Endoscopy is an effective method for early detection of digestive system tumors, and it is very necessary to improve the detection rate of colorectal polyps for the prevention of colorectal cancer. Against colorectal cancer before the disease early screening, in order to improve the speed and accuracy of detection of colorectal polyps using deep learning target classification algorithm in the typical Faster_R_CNN network structure, in the network into attention mechanism, to classify colorectal polyp detection is converted into a target three difference problem, detection of colorectal polyps. Experimental data were collected and the experimental results were evaluated by average-like precision mAP. The colorectal polyp detection method based on Faster_R_CNN and attention mechanism had good detection effect in terms of detection accuracy and execution efficiency. Compared with the original Faster_R_CNN network, mAP improved by 6.79%. This paper provides a new idea for improving the detection rate of colorectal polyps with higher accuracy and applicability.
Keywords: Deep learning; Colorectal polyps; Faster_R_CNN; Attention mechanism

1. INTRODUCTION

Colorectal cancer (CRC) is one of the most lethal cancers in the world, and is the second leading cause of cancer death in the world [1]. Studies have shown that most colorectal cancers are caused by precancerous lesions of adenomas [2], which start from the non-cancerous growth of the inner gland tissues of the colon or rectum and are mainly caused by cancerous growths of adenomatous polyps [3]. Colonoscopy is currently one of the more reliable methods for colorectal cancer screening [4]. The detection and resection of colorectal adenomas by colonoscopy at the early stage of the disease can reduce the occurrence of CRC and thus improve the survival rate of patients. However, since colonoscopy still requires histological diagnosis by an experienced endoscope physician, the accuracy of the evaluation by a less experienced colonoscope physician may be less than 80% [5], and therefore a computer-assisted (CA) approach is required for the automatic diagnosis of colorectal cancer [6].

In traditional colorectal polyp detection methods, most of them are based on artificial image features and use low-level features to obtain candidate areas of polyps [7]. In literature [8], it is proposed to detect polyps by using the morphological and textural information of colon wall. By extracting the geometric, morphological and textural characteristics of colon polyps, suspicious patches on colon wall can be quickly identified, which has been greatly improved in virtual colonoscopy. Although these methods are helpful for the automatic detection of certain polyps, the manual feature representation ability is limited and the detection rate is low. With the revolution of computer technology, Convolutional Neural Network (CNN) attracts people's great attention to deep learning and makes a great breakthrough in medical image detection. As for the colonoscopy diagnosis task, some of the latest methods utilize the ability of learning and recognition of CNN stratified features and apply it to polyp detection [7]. Urban et al.[9] used single scan detector SSD [10] and You Only Look One (YOLO) [11] model respectively to identify polyp areas in colonoscopy images. Shin [12] et al. used a region-based CNN detector Faster_R_CNN [13] to detect polyps, and the result accuracy rate reached 91.4%, with F1 and F2 values of 83.3% and 81.5% respectively. However, in the process of using Faster_R_CNN to identify polyps, the target recommendation box obtained through RPN is not accurate enough, which affects the subsequent accurate positioning of polyps and results in the inaccurate detection results.

To solve the above problems, this paper proposes a colorectal polyp detection method based on Faster_R_CNN and attention mechanism. Firstly, Resnet50 [14] is used as the backbone network in feature extraction network, and CBAM [15] structure based on attention mechanism is introduced to enable the feature extraction network to pay attention to the characteristics of polyps on different channels and positions at the same time. Then, the length-width ratio and scale of anchor are improved in the RPN stage, precise classification and regression stage, and the lesions contained in the intercepted suggestion box are judged by the network, so as to adjust the suggestion box. Finally, the feature vector of the target suggestion box contains more accurate position information, so as to improve the accuracy of polyp detection.

2. MATERIALS AND METHODS

Faster_R_CNN is improved on the basis of R_CNN [16] and Fast_R_CNN [17] algorithms. Faster_R_CNN is a target detection algorithm based on regional suggestions. Compared with SSD, YOLO and other regressive target detection algorithms, Faster_R_CNN has a higher detection accuracy [13]. Its main advantage lies in the combination of the advantages of Fast_R_CNN network and RPN network, which is reconstructed into a new target detection algorithm.

In this paper, a colorectal polyp detection model based on

Faster_R_CNN combined with attention mechanism is proposed, as shown in Figure 1. This model is mainly composed of three stages, namely feature extraction network, RPN region recommendation network and ROI pooling layer, which can precisely adjust the generated recommendation box. After the network passes through these three stages, four parameters needed for target detection are obtained, namely the x and Y axis coordinates of the center point and the width and height of the prediction box.
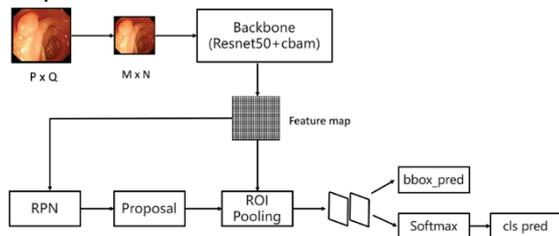
Figure 1. A colorectal polyp detection model with Faster_R_CNN combined with attention mechanism

(1) First of all, we input the original image into the colorectal polyp detection model combining Faster_R_CNN network with attention mechanism. We need to resize the original image to the minimum edge of 600. In order to prevent image distortion, we keep the length-width ratio of the image unchanged when the image is enlarged. The amplified image is then passed into the backbone-extracting network to finally obtain a common feature layer composed of several grids, each of which contains nine prior boxes in the Faster_R_CNN network.

In this paper, the feature extraction network adopts Resnet50 as the backbone network and introduces CBAM structure. There are two basic blocks in Resnet50 network, Identity block and Conv block respectively. In order to make better use of the global information of colorectal images during feature extraction, CBAM structure is introduced into each basic block of Resnet50 network, as shown in Figure 2. The dimension of the convolution image of the first 1x1 is reduced to 64. After a convolution of 3x3 and a convolution of 1x1, the image is recovered. CBAM structure is introduced, and the activation function
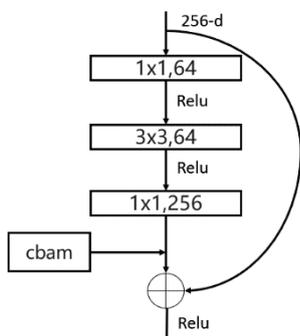
Relu is used. CBAM Attention Module is the category champion in 2018, with its main advantages including Channel Attention Module (CAM) and spatial Attention Module Spartial Attention Module (SAM) [15]. After the introduction of CBAM module, the feature extraction network can simultaneously focus on the features of colorectal images on different channels and different

location information, and the network recognition performance is improved.

Figure 2. Add CBAM structure to Resnet50 network

(2) After getting characteristic figure, will feature Suggestions in the network diagram input RPN area, first for a 3x3 convolution, again separately two 1x1 convolutions, a 1x1 convolution channel number is 9, for each prior box contains lesions, a 1x1 convolution channel number is 36, each a priori of each grid box, the parameters of the thus obtained several suggestion box, using the suggestion box, can capture on the characteristics of the layer, the different characteristics of intercepted layer on the location of different reactions in the original image, and then pass into the next step of ROI pooling layer.

(3) Since different suggestion boxes intercept feature layer areas on the common feature layer with different sizes, the ROI pooling layer first intercepts different feature layer areas with resize to the same size, so as to facilitate the fixation of parameters of the fully connected layer. The regression of the full connection layer and the bounding box was used to obtain the adjustment parameters of the suggestion box. The type of colorectal lesions contained in the suggestion box was calculated by the full connection layer and the Softmax classifier. Finally, the suggestions box was adjusted by adjusting the parameters and the identification results were output.

2.1 DATA COLLECTION AND ANNOTATION

In this study, the colorectal images provided by the Digestive endoscopy Center of East Hospital of Shanghai Sixth People's Hospital were used. The data were the images of patients undergoing white light endoscopic colorectal examination, and the time span was from June 2015 to September 2019.Under the guidance and assistance of an experienced endoscientist and gastroenterologist, a total of 1709 images containing lesions were screened out and the histological features corresponding to each image were recorded. Each image was JPG image in the format of 420x389x3 (RGB). The selected images containing lesions were examined by medical staff to ensure the accuracy of the data.
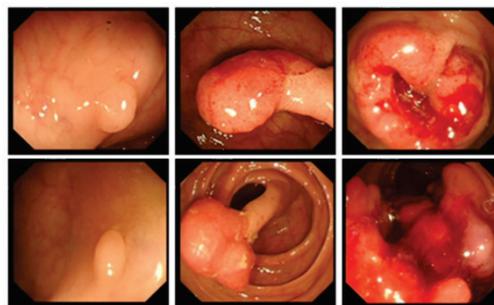
Figure 3. Colorectal polyps under white light endoscopy

After having certain pathological types of image database, still need to manually labeling these images, images to mark the location of the lesion and the corresponding category, we use Labelimg marked 1709 images, to obtain the corresponding tag data 1709 XML documents, 5083 Bounding Boxes, each image contains around the Bounding box of rectum, bounding box [xmin, ymin,

xmax, ymax] said the lower left corner of the lesion and the coordinates of the upper right corner. Finally, we created an image database for colorectal disease detection and further divided the images randomly, 80% of which were used for training and 20% were used to test the colorectal disease detection method based on Faster_R_CNN and attention mechanism.

2.2 THE WHITE LIGHT ENDOSCOPY

In the current studies on colorectal polyps, most researchers use some devices with good imaging conditions, such as blue light imaging (BLI), narrowband imaging (NBI), wireless capsule endoscope (WCE), etc. [18]. Colonoscopy of these devices can provide more details of vascular veins. In literature [19], Peng-Jen et al. designed and tested a computer-aided diagnosis system with deep neural network based on NBI endoscopy images to analyze narrow-band imaging of intestinal colon polyps. Of course, some researchers also used colorectal images under white light endoscopy (WL) for research [20]. Ruikai Zhang et al. [21] used colorectal images taken under WL and NBI endoscopy, respectively, to study the identification of polyp images from non-polyp images and the prediction of polyp histology. Pasha et al. [22] showed that NBI had a higher detection rate of intestinal metogenesis and tumor than WL.

Although NBI can provide more details of vascular lines and is more economical and effective than WL examination, most hospitals in China still adopt traditional white light endoscopy for colonoscopy due to limitations of medical equipment and other reasons. For the colorectal images obtained by white light endoscopy, the histological evaluation of polyps by experienced endoscopists is required, and the endoscopist needs to carefully examine each image of each patient, which is a relatively complicated process. Therefore, this study proposed a colorectal polyp detection method based on Faster_R_CNN and attention mechanism for traditional white light endoscopy images, with the purpose of improving the detection rate of colorectal polyps, reducing the burden of endoscopy physicians, and providing new ideas for improving the detection rate of colorectal polyps under white light endoscopy in China, which is of great significance.

3. EXPERIMENT AND ANALYSIS

The operating system used in this paper is Ubuntu 16.04LTS, the GPU is NVIDIA GeForce GTX 1080Ti, and the deep learning framework is Tensorflow 1.14.0.

3.1 EXPERIMENTS SETTINGS

In this study, a colorectal polyp detection model based on Faster_R_CNN network combined with attention mechanism was developed, and Resnet50 and CBAM structures were used as feature extraction networks. We set the epoch as 100, and in order to further optimize the network, we set the initial learning rate as 1e-4. If loss did not decrease after 10 epochs, the learning rate was adjusted by 0.8 times until it reached the optimal learning rate. Training process, we use the neural network weight can be based on iterative update training data of Adam [23] optimization algorithm, to reduce the number of model fitting phenomenon, we also adopts data of online

enhancement method, based on the iterative training data update the weights of neural network, the data is rotation, translation and reverse the operation, the operation will not change the data content and size of the original 1709 colorectal images random expansion, used for model training.

3.2 MODEL EVALUATION

The experiment in this paper simplifies the classical classification and detection of 1000 objects in Faster_R_CNN network, introduces the attention mechanism in the feature extraction stage, and divides the colorectal polyp detection into three classification problems, so as to help endoscopy physicians distinguish polyp types. According to the colorectal images provided by the Gastroenterology and Endoscopy Center of The East Hospital of Shanghai Sixth People's Hospital, under the guidance and assistance of experienced endoscopists and gastroenterologists, we simplified the pathological types of colorectal polyps into inflammatory polyps, adenomas and cancers, and the latter two types of polyps needed to be removed. The Mean Average Precision (mAP), a common metric used in target detection, was used as the evaluation index, and the traditional Faster_R_CNN network was used as the benchmark method to compare and analyze the improved method.

In order to verify the effectiveness of the method proposed in this paper, the original Faster_R_CNN network and the network based on Faster_R_CNN and attention mechanism were trained and tested using the same data set to obtain all kinds of average accuracy values. The recognition results before and after the model improvement were shown in Figure 4 and Figure 5.Original Faster_R_CNN network training to get the mAP of 69.47%, after the introduction of attention mechanism, the mAP of 76.26%, up 6.79%, polyp and cancer of the precision of the two categories, the most obvious ascension mAP, the higher the shows confidence in test results, show that test results obtained obvious ascension, we put forward based on Faster_R_CNN combined with attention mechanism, the improved method of feature extraction for more polyps is to be effective.
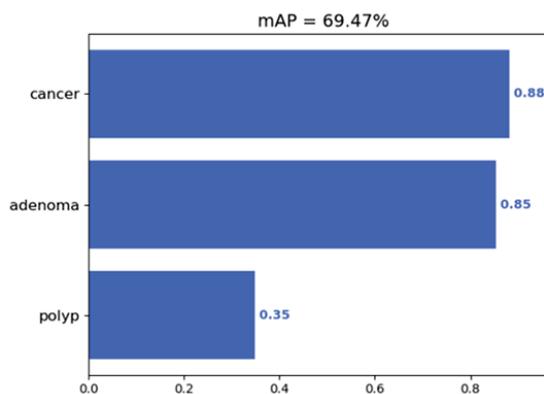
Figure 4. Faster_R_CNN model identification results
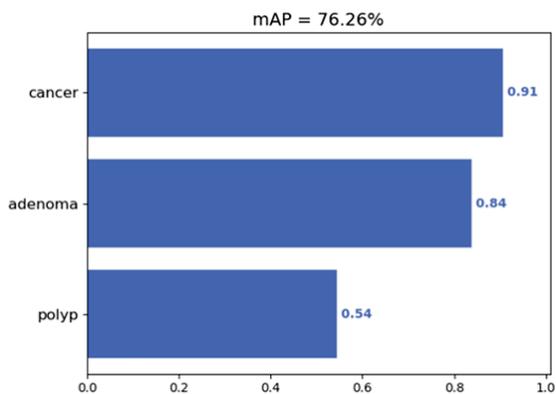
Figure 5. Faster_R_CNN+CBAM model identification results

During the detection of colorectal polyps, we compared the proposed network based on Faster_R_CNN and attention mechanism with Faster_R_CNN and Mask R_CNN [24], and used mAP, AP50 and AP75 to evaluate the performance of the image detection model. Results Faster_R_CNN combined with attention mechanism performed better than other networks, as shown in Table 1, where mAP, AP50 and AP75 were 76.26%, 93.31% and 87.22%, respectively.

Table 1. Comparison of different methods

Network	AP	AP_{50}	AP_{75}
Faster_R_CNN	69.47	88.74	80.72
Mask R_CNN	70.62	90.30	83.30
Faster_R_CNN+cbam	76.26	93.31	87.22

Through the comparison of figure 6 and figure 7 identification results can be seen, polyp detection method based on Faster_R_CNN combined with attention mechanism compared with the original Faster_R_CNN network, identify the polyp of the confidence level is higher, and more accurate positioning, especially for smaller, subtle inflammatory polyp recognition has improved a lot, to reduce the miss rate of polyps.
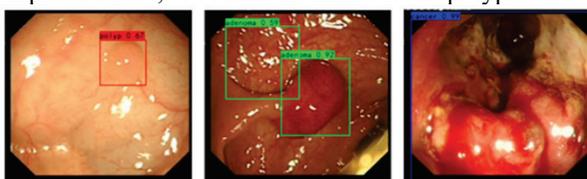
Figure 6. Recognition result of traditional Faster_R_CNN
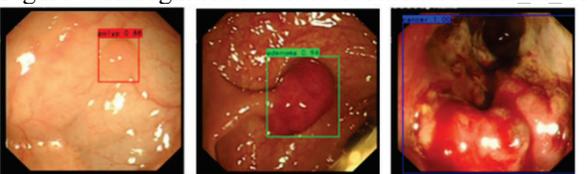
Figure 7. The recognition result of the improved model

We noticed that when using this method for polyp detection, one situation is likely to lead to missed diagnosis and low reliability of detection, that is, inflammatory polyps have small volume and small difference in characteristics from the surrounding environment, as shown in Figure 8. This type of polyp has a low risk of cancer and is not likely to develop into cancer at a later stage. Resection is usually not recommended in

medical diagnosis [25-26]. Therefore, the colorectal polyp detection method proposed by us shows better performance in detecting larger polyps, providing a new idea for the prevention of CRC.
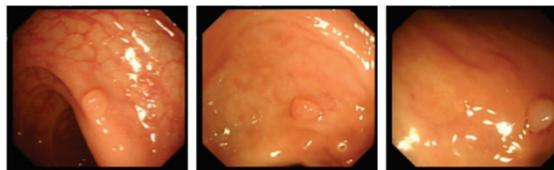
Figure 8. A condition that can easily lead to missed polyps

4. CONCLUSIONS

Aiming at the inaccuracy of Faster_R_CNN image in identifying colorectal lesions, which is difficult to meet the requirements of early screening of colorectal lesions, this paper proposed a colorectal lesion detection method combining Faster_R_CNN and attention mechanism. In the feature extraction stage, Resnet50 is used as the backbone network, and CBAM structure based on attention mechanism is introduced to make the feature extraction network focus on the features of the target in the channel and space, so as to improve the performance of the feature extraction network. In the process of accurate classification and regression, the network was used to determine the type of lesions contained in the intercepted suggestion box, and the suggestion box was adjusted to obtain the target suggestion box with more accurate location information. Through experiments, compared with the traditional Faster_R_CNN algorithm, this paper has higher positioning and recognition accuracy, and mAP has been improved by 6.79%, which can provide more reliable information for the subsequent early screening of colorectal cancer prelesions.

In this study, we conducted experiments on traditional white light endoscopy images, which is of great significance for the current situation that most hospitals in China still adopt traditional white light endoscopy for colonoscopy. This method can provide new ideas for improving the colorectal detection rate under white light endoscopy in China, which is of great significance. However, this method has a good performance in displaying polyp locations, but it cannot accurately describe the contour of polyps. Future work will include using deeper network structures to obtain more accurate and reliable results and further improve performance.

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Thoughts on the Management of College Students

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Abstract: The management of college students is an important part of achieving the goal of talent training. Under the new situation, it is necessary to change concepts according to the characteristics of existing college students, actively explore the management ideas of contemporary college students, and cultivate high-quality talents that meet the requirements of the new era.
Keywords: Colleges and Universities; College students; Management Work

1. ADAPT TO THE NEW SITUATION AND CHANGE CONCEPTS

Colleges and universities are important bases for transporting talents to the society and shoulder the important mission of talent training. The management of college students directly affects the cultivation of talents for socialist modernization construction, and is an important part of achieving the goal of talent cultivation, and it has an irreplaceable role. With the advent of the dual challenges of market economy and knowledge economy, in the process of building a harmonious society, student management should also adapt to the new situation, change traditional concepts, and actively promote the innovative and scientific development of ideas and scientific development of student management in colleges and universities to adapt to socialism The needs of market economy and the rapid development of higher education.

1.1 THE TRANSFORMATION OF THE SUBJECT IS ONE OF THE CENTRAL TASKS OF COLLEGES AND UNIVERSITIES.

In student work such as the education and management of students and the services provided to students, the "student as the main body" is truly implemented, and the value and dignity of students as human beings are respected., Fully respect students' personality, individuality, interests, needs, knowledge interests, hobbies, and strive to promote students' overall development, healthy growth, and sustainable development.[1]

1.2 MANAGING CONTENT CHANGE

The change of management content conforms to the needs of higher education reform and development under the market economy environment, and in accordance with the national education policy, formulates talent training goals and conducts comprehensive management and education for students.

1.3 CHANGE IN MANAGEMENT METHODS

It is necessary to establish a "people-oriented" educational philosophy, transform the traditional "regulatory education", and establish a "student-centered" and "student-oriented" educational philosophy. On the basis of establishing the main body status of students, with people as the starting point, all management activities are carried out around mobilizing students' initiative, enthusiasm and creativity.

It is necessary to build an emotional teacher-student relationship, change the traditional concept of "teacher dignity", and establish a good teacher-student relationship with students, which will help to give play to the leading role of teachers, with the charm of personality, through influence and influence, etc. Various ways, spring breeze and rain, moisten things silently, make college students develop good concepts and behavior habits, and promote the formation of college students' personality, the maintenance of mental health and the improvement of individual socialization.[2]

It is necessary to guide students to carry out the effective educational influence of self-education, only through the self-education of the subject can it work, so as to help achieve the goal of student success. It is also a democratic, open and humanized management method. Only by coordinating and coordinating the education management of students with the self-management of students, giving full play to the subjective initiative of the subject, and publicizing their individuality, can the best effect of the combination of education and management be truly achieved.To build an excellent campus culture. The construction of campus culture is conducive to creating a harmonious campus atmosphere and creating an all-round development of education environment. It plays a subtle role in the process of cultivating students' knowledge, affection, intention and behavior. Students' spare-time life is beneficial and has a huge and profound impact on the development of students' physical and mental health, the improvement of their spiritual realm, and the improvement of cultural accomplishments. An excellent campus culture can promote the improvement of students' comprehensive quality in all aspects.

2. NEW MANAGEMENT IDEAS AND SCIENTIFIC DEVELOPMENT

Clarify educational thoughts. Student management is a kind of "being" education. It is difficult to measure the effect of work, but the standard for judging the quality of work depends on whether the manager has clear educational thoughts and can gather students together. Guide and educate students on their political orientation, study motivation and style of study, moral cultivation, and value orientation, so as to form talents with perfect personality, noble morals, and good for society. [3]Therefore, people who can really do a good job with students need people with ideological charm. Through practical work, students can recognize and consciously practice educational ideas, so that they can touch students' hearts and arouse their emotions. Implement it in behavior. Exploring the law of work The focus of student work

under the new situation is to find the law from numerous phenomena. Grasp the characteristics of the work target and carry out targeted work. Undergraduates have unique characteristics in their age, personality, and psychological characteristics, as well as in their behavioral styles and social interactions. Management work should be carried out in accordance with the characteristics of students and explore its laws.

Clarify work thinking. The thinking of student work is student-oriented, based on the scientific development concept, centered on teaching work, and strict management as the core, so that they can become moral, wise, and responsible. People who develop in an all-round way, through educational and ideological guidance, party and league activity organization planning, and close class coordination, seize ideological student work, teaching student work, club student work, active student work, administrative student worked. The work forms the characteristics of student work.

Improving the quality of student management workers.Student workers must have a deep understanding and accurate grasp of the economic and social situation and development trends, and in the face of the impact of these changes, they can take advantage of the situation and do a good job in the education and guidance of students. First of all, college counselors who specialize in student management should strengthen their self-cultivation, clarify sacred responsibilities, strengthen their sense of responsibility, establish a sense of service, study hard, and constantly explore new ways and methods for student work under the new situation, and constantly summarize and adapt to the new The new experience and new achievements of student work under the new situation and situation will develop themselves and realize their own value in the process of fully serving students' growth and becoming talents. For those who have just stepped out of the instructors who have no work experience, they must be trained before the job, and carry out targeted professional and information training, recognize their own professional characteristics and student work rules, and improve their work method. At the same time, it is necessary to give full play to the advantages of no generation gap and easy communication between young teachers and students, and it is easier for students to have a sense of identity. [4]Do a good job in the work of the old teachers, with the rich work experience of the old teachers, to drive the new teachers to quickly grasp the methods of student management in the new era, and quickly open the work situation. Secondly, all teachers in colleges and universities have human responsibilities, and all courses have human functions. The teacher's moral support can have an impact and effect on the behavior of students to a large extent, and establish the concept that all staff are human and the whole process is human.

Strengthen professional, employment, and entrepreneurial education. First, we must strengthen professional ideological education for students. Clarifying the relationship between majors and occupations will help students learn the correct learning methods, arrange college life, and establish clear learning goals. When new students enter the school, they should invite more outstanding old teachers to conduct professional ideological education, introduce learning methods and experience, and make Freshmen establish a good professional impression and help students clarify the development prospects of their major. Second, we must strengthen the employment education of students. Career-based employment education will run through the entire college education, which is also a good time for ideal education and life outlook education for students. Third, we must strengthen student entrepreneurship education. Provide guidance for students to start their own businesses, through policy explanations, successful people's presence, and coordination of support from society, enterprises, and groups, so that students can create entrepreneurial awareness.

Strengthen the departmental work of all departments in colleges and universities should be carried out around students, in order to help shape students to become talents and consider their development. First of all, in cooperation with the Academic Affairs Office, we will offer public elective courses based on the needs of the society. The profound professional basic courses will cultivate students into "t"-shaped talents. Secondly, the cooperation with the Scientific Research Office, combined with students' social practice, practical training and graduation internship, encourages students to apply for topics jointly or separately with teachers and students, conduct scientific research under the leadership of teachers, and improve students' practical ability. Third, research with the Youth League Committee and the Logistics Department to improve students' participation in public welfare activities such as young volunteers or work-study activities.

3. REFORM THE CURRENT OPERATING MECHANISM OF STUDENT MANAGEMENT

To build a people-oriented student management work model, in addition to establishing guiding ideology, updating educational concepts, and following some basic principles, it is important to establish an effective operating mechanism. Establish a student work committee to become the decision-making core, command center and coordination center of student management. At present, schools generally adopt an operating mechanism in which the deputy secretary of the party committee (deputy principal) is in charge and the student office performs the functions of student management. There are some problems in the command and coordination of many tasks, education and management are sometimes out of touch, and some job responsibilities are not clear. At times, the Student Office has sometimes become an all-encompassing "Hundred Management Department." The establishment of a student work committee to promote student management to a school-wide work level is conducive to the command and coordination of student management work and conforms to the educational ideology of educating people for all employees. [5]

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Set up "three centers", namely the student education guidance center, the student service center and the student activity center. Re-integrate the functions of student management and reflect the idea of serving and educating people. The three centers are subordinate to the leadership of the Student Work Committee, and implement management based on rules. Individual schools have started this practice.

4.CONCLUSIONS

Build a high-quality student management team to provide organizational guarantees for student management. The party committee and the administration should attach great importance to the construction of the student management team, select teachers with good ideological quality and strong organizational ability to continuously enrich the student management team, and take practical measures to evaluate professional titles, appraise first, rank upgrades, and life benefits And so on. Leaders in the management of students at the school and department levels try to avoid part-time work and strive to be full-time. Student management workers themselves should also strengthen their learning, enhance their sense of honor and responsibility, and at the same time, they should attach importance to the scientific research of student management work, as well as the scientific research of student management work as they do in teaching and research, constantly research new situations, analyze new problems, and produce New experience to improve the level of student management.

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Try to Analyze College-led Student Work Management Model in Colleges and Universities

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Abstract: The college-led management mode of Student Affairs in colleges and universities is based on the school, with the second-level colleges as the main force, with distinct power and prestige, division of Labor and Cooperation, management and service for college students, a new mode of college student work with the function of ideological and political education. Under this model, there is a significant autonomy in the work of high-ranking students. The autonomy of college students is characterized by PERTINENCE, characteristics and education.
Keywords: College; Management; Model.

1. INTRODUCTION

At present, most of the college students in our country belong to the post-90s. They have a unique growth environment and are very resistant to tough rewards and punishments. At the same time, they hope to deal with problems in their own way. Because college students have unique characteristics, there are also some notable characteristics in the management of college students, which requires parents and teachers to use appropriate management and guidance methods to educate college students. Therefore, in view of the characteristics of college students, schools need to conduct in-depth research on how to establish a student-centered management approach, and gradually apply the idea of flexible management to the management of college students to make the management more scientific and humane.

The management model of student work in colleges and universities refers to the model of the organizational structure of student work in colleges and universities and its operating mechanism. It mainly includes two parts: organizational structure and system specifications. The former is rigid and the latter is flexible. Establishing and improving the management model of student work in colleges and universities is to improve the organizational structure of student work leadership and management systems and change the corresponding management system, establish a relatively complete decision-making, implementation, supervision, and consulting mechanism for student work, and form a goal that is consistent with the goal of talent training The organizational structure and operation mode for performing education, management, and service functions. [1]

The functional department of student work should adapt to changes in student work content, extend the work area, expand work functions, and establish a student community management centered on the community party and league organization, based on club activities, and based on student self-education, self-management, and self-service. Work system to effectively promote student party building and ideological and political work into the community. First, establish a community party branch. Community counselors and student party members rely on student dormitories to establish student party branches, establish party member responsibility areas in dormitories, and establish corresponding assessment and evaluation mechanisms in conjunction with college (department) student party building work to form a network system for party building into the community. Second, the establishment of a community league working committee. The grassroots organization that forms a group with dormitories and floors as the unit, with the building activity room as the stage, and the student club as the support, carries out colorful and lively group organization activities. [2]Third, establish a community management committee. The Community Management Committee is a student self-discipline organization established by the student union of the school. Under the leadership of the Student Life Park Management Center, it actively organizes and develops student self-education, self-management, and self-service activities.

2.THE COMPLEXITY OF STUDENT MANAGEMENT IN COLLEGES AND UNIVERSITIES

2.1 THE MULTI-FUNCTION OF STUDENT MANAGEMENT IN COLLEGES AND UNIVERSITIES

The main task of college student work in China's college student work mainly consists of college student affairs management and college ideological and political education. The former mainly includes the management and service of student status, financial aid, class work, employment, attendance and logistics, while the latter is guided by Marxism, Maoism and the theory of socialism with Chinese characteristics. To carry out the value idea of "student-oriented", which mainly includes the education of mental health of college students, the education of situation and policy, the education of employment guidance, as well as organizing students to participate in Party and league life and various activities sponsored by colleges and schools, participate in social practice activities. And take this as the carrier carries out the education.[3]

2.2 THE MULTI-FUNCTION OF STUDENT MANAGEMENT IN COLLEGES AND UNIVERSITIES

Although all colleges and universities in our country have set up special compulsory courses in ideological and political theory, which are taught by full-time teachers, the student work team of colleges and universities has independently assumed the function of ideological and Political Education for college students. It not only has courses related to it, but also integrates education into management by bringing it closer to students'life. Education in practice plays an irreplaceable role, which has become an important way besides the main channel of ideological and political education in colleges and universities.

2.3 MANAGEMENT MODE OF STUDENT AFFAIRS IN COLLEGES AND UNIVERSITIES

First, contemporary college students tend to have distinctive personalities in understanding problems, perceiving the world and conducting themselves in the world, and they pursue different ways. The higher education in our country has changed from elitism to popularization, the universities have greatly expanded their enrollment, and the number of students on campus has increased year by year, so we are faced with many new contradictions and new problems. To be able to effectively respect the different choices of college students. To address the different types of difficulties they face. Under the circumstances. The traditional school-oriented management model of student work. It is usually based on solving the general and universal problems among college students. In the Student Work Movement Mechanism emphasizes the NEAT and tidy, . It is difficult to meet the needs of personality development of college students. But | the university each institute's student work team contacts with the student directly and the Association. They go through the lives of eight students, listen to their opinions, answer their questions and solve their problems. In fact, they have an advantage in dealing with these situations. At present, the work of students in colleges and universities is mainly undertaken by the staff of each college.[4]

3.CHARACTERISTICS OF COLLEGE-LED WORK MANAGEMENT MODEL

College-led College Student Work Management Model Features college-led college student work management model. In fact, the autonomy to carry out student work should be clearly, fully and moderately distributed among the colleges, and the respective powers and responsibilities of the schools and colleges should be further delineated so that they can cooperate with each other in student work. Complementary benefit. In the college-led mode, the college fully enjoys the autonomy of student work.

With the rapid development of information technology, especially the popularization of computer network technology, introducing computer technology to information and network management of student work has become a trend in the development of college student work. At present, most colleges and universities have developed their own information management systems, but in actual operation, most are only for the purpose of information release and publicity, lack of information interaction, lack of office platforms and other issues. To

meet the requirements of informatization development, we should continuously improve the informatization model of student work. First of all, it is necessary to combine the characteristics and functions of student work to establish student education management, employment guidance and career planning services, student activities, mental health education and consultation and other modules to provide information release management, office, information sharing and other platforms; second, students Working cadres should focus on clear student work goals, relying on the application and development of information technology, and establish an information exchange mechanism for mutual exchanges and student work and student interaction, such as setting up a message board, counselor blog, student work QQ group The third is to strengthen the communication and communication within the department and between schools, through information construction, realize the sharing of resources within and between schools, promote the integration of resources, and provide guarantee for students' ideological and political education to enter the network.[5]

3.1 BUILDING A TEAM OF HIGH-LEVEL STUDENT ADMINISTRATORS

Higher education all over the world often adopts the mode of subject-based training in order to enable the students to master certain professional skills to adapt to the increasingly fine social division of Labor. To meet the needs of an increasingly diverse market, or to seek to cultivate specialized personnel engaged in research in a subject area. Under the circumstances. The major determines the future career direction of college students to some extent. The Life Vision, value orientation, thinking mode and career ideal of college students are closely related to the major they study. Therefore, there are significant differences in the above-mentioned aspects among the students of different majors, while the students of the same or similar majors have some commonness in these aspects. When carrying out ideological and political education. It must be adapted to the actual conditions of college students of different professional levels.

3.2 HIGHLIGHT THE EDUCATIONAL NATURE OF COLLEGE STUDENT WORK

As mentioned above, ideological and political education should be placed in the first place in all work of colleges and universities, and this aspect of the function of college student work is increasingly valued under the school-led model. Let's be fair. A. With the increasing enrollment of college students in recent years, the Faculty of a college is limited to the completion of a large number of "hard" tasks which can be inspected by the school, while the ideological and political education is often carried out under the ideological and political mode of the college because of its own ambiguity, long-term nature and complexity. It will make it have more ample time to strengthen and improve the ideological and political education work of the college, such as the guidance of extracurricular practice activities for college students.

3.3 HIGHLIGHT THE EDUCATIONAL NATURE OF COLLEGE STUDENT WORK

As mentioned above, the ideological and political

education should be placed in the first place in all the work of colleges and universities. Let's be fair. A. With the increasing enrollment of college students in recent years, the Faculty of a college is limited to the completion of a large number of "hard" tasks which can be inspected by the school, while the ideological and political education is often carried out under the ideological and political mode of the college because of its own ambiguity, long-term nature and complexity.[6]It will make it have more ample time to strengthen and improve the ideological and political education work of the college, such as the guidance of extracurricular practice activities for college students.

4. CONCLUSION

Today's college students are generally born after the 1990s. They have distinctive personalities, their abstract thinking ability has developed to a newer level, and their thinking is highly organized, profound, critical, and autonomous. But nowadays, colleges and universities mainly build harmonious campuses in the form of normative documents to promote the all-round development of students. This is undoubtedly more or less binding on the development of students. College students in the 21st century have strong independence, so they should keep pace with the times and change traditional management concepts, which are embodied in: First, give students more room for development on the basis of management, strengthen student confidence, and cultivate student autonomy. To create more conditions for students' growth and development; the second is to emphasize the "people-oriented" and humanistic care; the third is to focus on student management, supplemented by teachers. In short, under the new situation, there are still certain problems and difficulties in the management of student work in colleges and universities, but the work of counselors must keep pace with the times, and strive to explore and form effective work ideas and methods to more effectively promote the development of student work.

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Teaching Reform of PLC Applied Technology Course

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Abstract: Aiming at the current teaching situation of the "PLC Application Technology" course, this article reconstructs and adjusts the curriculum system based on the existing problems in teaching, implements reforms in each teaching link, realizes the docking of teaching content and teaching materials, and improves student's Professional ability promotes the sustainable development of talents. Practice has proved that the teaching effect of the reformed course is obviously.
Keywords: PLC; Curriculum; Teaching reform

1. INTRODUCTION

PLC is the controller of the automated production line.It is programmable, modular, easy to maintain, and highly reliable. It is widely used in industrial intelligent manufacturing systems.The PLC course is the core skill course for automation majors, and it is a professional subject with strong practicality.In addition, the programmable logic controller (PLC) is reliable and has good applicability and has been widely used.As a key indicator, the application status of PLC application technology can measure the advanced degree of a country's industry to a certain extent. In the talent training program, it is the practical application of the prerequisite courses "Electrical Control Technology" and "Sensor Detection Technology and Application", as well as the basic pillar of the follow-up courses "Automatic Line Installation and Debugging" and other courses.It occupies a core position in professional courses..

2.PROBLEMS IN THE TEACHING OF TRADITIONAL "PLC APPLICATION TECHNOLOGY" COURSE

(1) Unreasonable design of teaching links
The teaching content of the traditional "PLC Application Technology" course generally includes: first, the origin, function, and characteristics of the PLC; second, the hardware performance and software use of the PLC; third, the instructions of the PLC.These teaching contents cannot be synchronized with practical teaching in structure, and their teaching mainly focuses on students' memory learning.Most of the time in class, students are comprehending and digesting the relevant instruction content, and then follow the teaching and training content prescribed by the teacher for practical application.[1]There is less practical operation time, which cannot allow students to better use instructions to complete control tasks related to actual production and life.There are three shortcomings in the setting of this kind of teaching content.One is mainly based on memory, which cannot attract the attention of students and cannot increase students'interest in learning; the second is relatively simple in content setting, and students have no sense of accomplishment after finishing; third The content setting is less related to actual production and life, and cannot meet the actual production needs of enterprises.

(2) Single practice equipment
The practice place of the traditional "PLC Application Technology" course teaching is mainly the laboratory.The laboratory is mainly to fix the complete set of experimental equipment, namely the PLC, on a module, and all the practical teaching content is presented in the module board.The actual operation is mainly based on analog and jack wiring, and basic wiring and functional verification experiments are carried out on the experimental module.The main advantage of this kind of laboratory equipment is that it is convenient to use, highly repeatable, and not easy to damage the equipment during use.The disadvantage is that students cannot see the actual PLC, especially the wiring of the input and output terminals, and cannot know whether the power supply model is DC or AC., The difference of each model PLC, etc.In the actual production of enterprises, PLC equipment is in kind and not connected modules in the school laboratory.The backwardness of this practice place decouples the experimental equipment from the equipment actually used by the enterprise, which cannot meet the needs of the enterprise, and it cannot improve the students' The adaptability of the enterprise.In addition to the inconsistency between the PLC fixed on the module and the actual equipment used by the enterprise, the practice site is backward.The backwardness of the practice site is also reflected in the slow update of the experimental equipment that cannot meet the requirements of the enterprise.[2]The school training equipment is difficult to update with the industrial development.In the application process, there are many models of manufacturers and faster iteration speed.PLCs of different manufacturers have different basic functions, peripheral device connections, communication station establishment, programming software, development environment, and command systems.School training equipment generally uses 1 to 2 types of PLC, which is difficult to cover many manufacturers, and it is even more difficult to keep up with the high-end models used in large-scale projects in the industry.In addition, PLC training equipment mostly uses small motors, LED lights, digital tubes, relays, etc.as control objects, while the number and complexity of control objects for actual projects produced by enterprises is much greater, and it also involves multidisciplinary integrated applications.

(3) Teaching mode cannot activate student autonomy
The teaching of the "PLC Application Technology" course, which is based on practical courses, mainly adopts an integrated mode of teaching aimed at cultivating

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students' hands-on ability.However, in the actual implementation, there are mainly the following problems: First, the teaching content is relatively simple, usually the verification exercises of basic instructions, which cannot arouse the enthusiasm of students in learning; Second, highlight the teaching content of memory-based courses so that Students spend most of their time memorizing and verifying basic instructions, and they cannot really learn and operate more in-depth practical content in the classroom; third, there are more cases of teachers' hands-on practice exercises in practical operations.Can't really learn independently.

(4) Single teaching evaluation

The traditional "PLC Application Technology" course teaching evaluation methods generally have two types: first, the final exam is a theoretical test paper to determine the student's final score; second, the final exam is a practical test question, which is determined by the student's practical test score Determine the student's course grades.No matter which of these two teaching evaluation methods are relatively simple.[3]This single mode of teaching evaluation either does not take into account the practice-oriented characteristics of this course, or is like a college entrance examination, it completely ignores the performance of students in practice, and ignores the management and management of students' daily learning.In the development of professionalism, there has even been a bad phenomenon that some students can cope when they can cope with sneaking and rape in class.As long as they memorize the main points carefully or prepare the practical content required by the teacher at the end of the semester, they can achieve better results.

3.RESEARCH ON CURRICULUM TEACHING REFORM

Aiming at the problems in the teaching of this course, combined with the current skill competition environment, the teaching reform of the "PLC Application Technology" course has been studied and applied in practice.The main measures are as follows.

(1) Optimize the teaching content of the course

In order to solve the shortcomings of the traditional "PLC Application Technology" course teaching, the course teaching content has been optimized, mainly by integrating the content of the competition items into the course teaching, and setting specific items from simple to complex according to the level of the content of the competition.At present, there are many projects involving PLC application technology in manufacturing competitions.Here, we take the integration of the "Modern Electrical Control System Installation and Commissioning" competition as an example to optimize the teaching content of the course.According to the content of the competition, the teaching content of the "PLC Application Technology" course is divided into three types:

First, basic projects.The main content includes PLC hardware and software knowledge, PLC basic instructions, and PLC control of three-phase asynchronous motors.

Second, complexity items.The main content includes the operation control of stepping motor, the motion control of

servo motor, etc.

Third, comprehensive projects.The main content includes PLC and inverter combined with MCGS to control the operation of three-phase asynchronous motors, PLC and inverter combined with MCGS to control the operation of stepping motors and servo motors.

After this optimization, the level of the entire teaching content is more obvious, and the individual differences of different students can be fully considered.Students who are able to study can not only study deeper project content, but also guide other students to complete simpler project content.This can not only bring students a sense of accomplishment in completing project tasks, but also promote the training of students' practical ability, the cultivation of team spirit, and the development of students' basic qualities.

(2) Update training equipment

In order to better participate in various skill competitions at all levels, the school has purchased a large number of competition equipment based on the original simulation-verified experimental equipment.These equipments have been certified by experts in related industries in the early stage, and are consistent with the production sites of industry enterprises, and can meet the production needs of enterprises.In the course of practical teaching, the competition equipment is appropriately introduced to adjust the practice teaching place, and the teaching of part of the course content is completed on the competition equipment, so that the problem of the disconnection between the learned content and the actual production of the enterprise can be solved.In the specific implementation of the "PLC Application Technology" course teaching, the exercises of basic project content such as basic functional instructions can be completed on the simulated experimental equipment, and the exercises of complex projects and comprehensive project content require students to complete on the competition equipment.This method can not only make full and reasonable use of laboratory resources, but also complete different practical projects from person to person, reflecting the idea of teaching students in accordance with their aptitude and people-oriented.In addition, in the course of practice, according to the different teaching content and levels, all students can experience the challenge of the project task and the sense of accomplishment in completing the task.

(3) Reform curriculum teaching mode

In fact, the integrated teaching mode of traditional teaching is quite in line with the teaching needs of the "PLC Application Technology" course, but due to the outdated teaching content, this teaching mode has not achieved the expected teaching effect.The author introduces the competition mechanism into the course teaching, and reforms the traditional teaching mode into a four-in-one teaching mode that integrates the content of competition items into the course teaching.Under this teaching mode, students can practice and practice competition items while learning the content of the course, and then participate in skills competition projects. When they obtain course results, they can also get skills

competition rewards, so that students are truly willing to learn and practice. Learn voluntarily and want to learn.[4]

(4) Reform the teaching evaluation system

In order to better highlight the student-oriented thinking in curriculum learning and emphasize the importance of curriculum practice teaching, a diversified teaching evaluation method combining multiple assessment methods is used to reset the curriculum in the teaching of "PLC Application Technology" Evaluation System. In specific implementation, students' course scores are broken down into four parts: usual class attendance, usual practical performance, usual personal literacy performance, and final practical performance. Table 1 shows the appraisal personnel and the percentage of each part.At the same time, the diversified curriculum evaluation system also evaluates the actual situation of students completing tasks on the online teaching platform, the length of watching videos, the number of discussions and interactions, the number and quality of homework completed, and the evaluation results are shown in Table 1.All results Increase or decrease on the basis of synthesis, and the final grade will be the final grade of the student's course.

4. CONCLUSION

Through the use of modern teaching methods to carry out teaching reform and implementation of the PLC course, a good teaching effect has been achieved. Practice has proved that the reformed course teaching has played a very good role in improving students' interest in learning, training of practical skills, training of teamwork spirit, and development of students' basic qualities. It has not only improved students' ability in PLC engineering. The level of practical skills in the application has also laid a solid foundation for the further improvement of the PLC course teaching system.

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MACGAN: Cartoon Style Transfer Based on Mixed Domain Attention

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Abstract: Image style transfer is a method to transform images from one style to another. With the development of generative adversarial network in deep learning, it's application in the image style transfer has attracted much attention. However, the existing methods usually have some problems and major problems mainly include: 1) the generated images have not obvious cartoon style; 2) the generated images lose some important textures of the original image; 3) the chromatic aberration inside the generated image is not obvious. To solve the above problems, we propose a generative adversarial network based on mixed attention called MACGAN. In this network, we first introduce the mixed attention module to make the internal chromatic aberration of the generated image more obvious. And the skip connection structure is adopted to preserve the important textures of the original image in the process of style transfer. In addition, a new residual block is introduced to reduce the number of model parameters and speed up the image generation. Finally, three datasets of Hayao, Paprika and Shinkai are used for experimental evaluation. The results show that our method is able to generate high-quality cartoon images from real-world photos. And we get the better FID than other methods.
Keywords: Image style transfer; Deep learning; Generative adversarial network; Attention mechanism

1. INTRODUCTION

Cartoon is a common art form in daily life. The cartoon style transfer refers to the transformation of real-world images into cartoon images. And in the process of transformation, the original image structure must not be destroyed. Figure 1 shows an example of our method converting a real-world image into a Hayao style image. But in real life, it takes not only special expertise but also a lot of time for an artist to turn a realistic image into a cartoon-style image. Moreover, it is difficult for existing software to achieve satisfactory results. Therefore, it is necessary to propose a method that can transform real-world images into high quality cartoon style images.

Since the pioneering work of Gatys et al[1], the style transfer of image has received increasing attention. And with the development of deep learning, some algorithms [2, 3, 4, 5] based on Convolution Neural Network (CNN) are widely applied to image style transfer, However, these existing neural network style transfer methods are usually only suitable for specific style transfer tasks. When they are used for cartoon style transfer, the generated images have no obvious cartoon style.

Then Goodfellow et al.[6] proposed generative adversarial network, many image style transfer methods based on

GAN[7-11] have been proposed. CycleGAN [9] was the first to propose a style migration algorithm for unpaired images, which broke the limitation that the training set in Pix2pix [7], Pix2PixHD[8] must be paired, making the training set easier to obtain. CycleGAN has a good result on style transfer. However, in the cartoon style transfer, the generated cartoon image loses some important texture features of the original image, such as the outline of facial features, the edge outline of leaves and so on. The CartoonGAN [10] and AnimeGAN [11] are specially designed for cartoon style transfer, which can generate cartoon image well. However, there are still some defects in the chromatic aberration of the generated image. For example, the lipstick color of the lips on the face is not separated from the skin color, which results in the lipstick color of the lips being the same as the skin color.

(a) real-world image　　　　(b) our result

Figure 1. An example of cartoon style transfer. (a) A real-word image, (b) The image (a) transfer to Hayao cartoon style by our algorithm

Figure 2. The generator and discriminator of MACGAN

The above methods are able to convert real-world images into cartoon images, but there are still some problems. 1) The generated images have no obvious cartoon style. 2) The generated image loses some important texture features of the original image; 3) The internal chromatic aberration of the generated image is not obvious. In order to solve these problems, we propose a cartoon style transfer method based on the mixed domain attention mechanism, which can better transform real-world images

into cartoon images. Our MACGAN is similar to the AnimeGAN, the biggest difference between both methods is the generator structure. In order to make the model more stable, we also used VGG network [12] to pre-train the generator before training MACGAN.

The main contributions of our work are:

1) We propose to add a mixed domain attention mechanism to the first layer of MACGAN generator, which can keep the internal chromatic aberration of cartoonized images unchanged;

2) The skip connections are used between inverted residuals;

3) We propose a new inverted residual block which can reduce the number of model parameters and speed up the image generation.

2. RELATED WORK

2.1 Neural Style Transfer (NST)

NST use the convolutional neural network (CNN) to transfer the input image from one style to another. Gatys et al.[14, 15, 16, 17] proposed a series of image style transfer technique based on CNN, but their network model often have a great number of parameters, which make the process of style transfer time consuming. Huang et al.[18] propose a effective approach, named AdaIN, which aligns the mean and variance of the content image features with those of the style image features. However, those methods only suitable for specific style transfer tasks. They can't obtain satisfactory results when used for cartoon style transfer.

2.2 Image style transfer with GANs

In recent years, a series of GAN based approaches for image style transfer have been proposed [7, 8, 9, 10, 11], which can be divided into two categories: style transfer of paired and unpaired. The traditional approaches of paired are Pix2pix [7] and Pix2PixHD [8]. Their training datasets require pairs of images with consistent content but inconsistent style, which have the disadvantage of insufficient datasets. Until the emergence of unpaired image style transfer, such as CycleGAN [9], CartoonGAN [10] and AnimeGAN [11], These approaches can be trained by using only two datasets with different styles, which greatly reduces the difficulty of obtaining datasets. CycleGAN first proposed the cycle architecture, which consists of two pairs of generators and discriminators. The first pair of generator and discriminator learn the mapping from the original style to the target style, and the second pair learns the mapping from the target style to the original style. CycleGAN is able to perform some style transfer tasks excellently. However, when generating cartoon style images, a large number of original image features are often lost, resulting in the migrated images having cartoon style but unclear texture. CartoonGAN and AnimeGAN are specially used for cartoon style transfer, which have a good result in generate cartoon image, but the internal chromatic aberration of generated image will be inconsistent with the original image. Furthermore, it's time consuming to achieve cartoon style transfer.
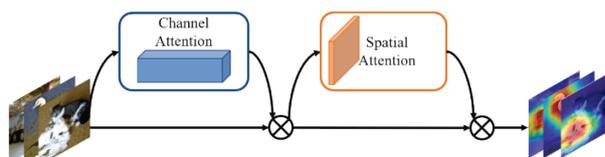
Figure 3. Mixed attention block

2.3 Attention mechanism

The attention mechanism can process visual information adaptively and focus on significant areas by imitating the process of human observation. This mechanism can quickly extract important features of image, so it is widely used in computer vision tasks [19-24]. The mixed domain attention mechanism includes the channel domain attention mechanism and the spatial domain attention mechanism, as show in figure 3. The channel attention mechanism focuses on the channel characteristics of the image while the spatial attention mechanism focuses on the spatial characteristics of the image. According to [24], we have the best result on the order of channel attention and spatial attention.

3 OUR METHOD

3. 1 MACGAN architecture

In this paper, we present a better and more efficient generative adversarial network called MACGAN. MACGAN contains two convolution neural networks, as show in figure 2: one is generator G which is used to transform real-world images into cartoon styles, another is discriminator D which is used to distinguish the input image is real cartoon image or not.

In Figure 2, the first layer of the generator is a mixed domain attention mechanism which include domain attention and spatial domain attention. This mechanism can extract the chromatic aberration feature of the origin images. Inspired by the U-net network [13], the following generator structure is composed of encoder, residual blocks and decoder. The skip connections well solve the detail loss during the down sampling of our network.

In the encoder, the head contains two layers of Conv-Block. And the downsampling (Stride-Block) is carried out twice. After each downsampling, a Conv-Block is included. Furthermore, there is a DSConv Block between the two downsamplings. The structure of Conv-Block and DSConv block are the same with[11].Stride-Conv is shown in Figure 4(b), where the convolution kernel size is 3×3 and the stride is 2.
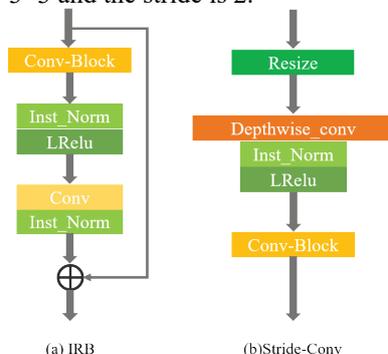
(a) IRB   (b)Stride-Conv

Figure 4. IRB block and Stride-Conv block

The specific structure of the IRB block is shown in Figure 4(a). Compare to the IRB block in [11] we removed the

Depthwise_conv to reduce the parameters of our model. 8 IRB blocks are used in our generator.

The decoder and the encoder present a symmetrical structure. The convolution kernel size and stride of Stride-Conv in decoder is 3×3 and 1/2.

Our discriminator is the same as [11]. As shown in Figure 3, all convolutional layers in the discriminator are standard convolution, and spectral normalization is used for each layer to make the training more stable.

3.2 Mixed domain attention mechanism

As shown in Figure 3, the mixed domain attention mechanism consists of a channel domain attention and a spatial domain attention. The feature map of the input image, Mixed attention block sequentially infers a 1D channel attention map and a 2D spatial domain attention map, The whole calculation process is:

$$F' = M_C(F) \otimes F,$$

$$F'' = M_S(F') \otimes F' \tag{1}$$

where $\otimes$ represents element-wise multiplication, F' is the result of the original image feature map passing through the channel domain attention, F'' is the final refined output. The complete structure of channel domain attention and spatial domain attention are similar to [24].

3. 3 Loss function

We formulate the process of learning to transform real-word photo to cartoon images as a mapping model which maps the real-world photo domain X to the cartoon domain Y. The mapping model is trained with unpaired training data $S_{data}(x) = \{x_i | i = 1, \cdots, N\} \subset X$ and $S_{data}(y) = \{y_i | i = 1, \cdots, M\} \subset Y$, where the N and M are the numbers of real-word photos and cartoon images in the train dataset, respectively.

The loss function employed in this paper is the same as [11], which consists of four losses:

$$L(G,D) = \omega_{adv} L_{adv}(G,D) + w_{con} L_{con}(G,D)$$
$$+ \omega_{gra} L_{gra}(G,D) + \omega_{col} L(G,D) \tag{2}$$

where ω_{adv}, ω_{con}, ω_{gra}, ω_{col} are the weights to balance four given loss functions. And in all our experiments we set $\omega_{adv} = 300$, $\omega_{con} = 1.5$, $\omega_{gra} = 3$, $\omega_{col} = 10$.

$L_{adv}(G,D)$ is the adversarial loss to make the process od training more stable and make the MACGAN to generate higher quality images. The least squares loss function in LSGAN [25] is employed as $L_{adv}(G,D)$.

$L_{con}(G,D)$ is the content loss:

$$L_{con}(G,D) = E_{x_i \sim S_{data}(x)}[\|VGG_l(x_i) - VGG_l(G(x_i))\|_1] \tag{3}$$

where $VGG_l(\bullet)$ is the lth layer of $VGG19$ and the "$\bullet$" is input. The $G(x_i)$ means the generated images and x_i means real-word photos.

$L_{gra}(G,D)$ is the gray style loss:

$$L_{gra}(G,D) = E_{x_i \sim S_{data(x)}}, E_{g_i \sim S_{data(g)}}$$

$$[\|Gram(VGG_l(G(x_i))) - Gram(VGG(g_i))\|_1] \tag{4}$$

where Gram means the Gram matric of features. g_i means the color cartoon image y_i in $S_{data}(y_i)$ is transformed to grayscale image. $VGG_l(\bullet)$ and $G(\bullet)$ are the same to the $L_{adv}(G,D)$.

$L_{col}(G,D)$ is the color reconstruction loss:

$$L_{col}(G,D) = E_{x_i \sim S_{data}(x)} \begin{bmatrix} \|Y(G(x_i)) - Y(x_i)\|_1 \\ + \|U(G(x_i)) - U(x_i)\|_H \\ + \|V(G(p_i)) - V(p_i)\|_H \end{bmatrix} \tag{5}$$

where $Y(x_i), U(x_i), V(x_i)$ represent three channels of x_i in YUV format, respectively. And the H represents Huber Loss.

3.4 Training

The proposed MACGAN can easily realize the cartoon style transfer of unpaired images. However, the GAN model is highly nonlinear and easy to fall into a local minimum. The pretraining phase of the generator can make the generative adversarial network to converge better. In the pre-training of the generator, we only trained one epoch and the learning rate was set to 0.0001. In the formal training stage, we set the learning rate of the generator to 0.00008 and the learning rate of the discriminator to 0.0001. 100 epochs was trained. The deep learning framework we used is TensorFlow, and the GPU is Tesla T4.

4 EXPERIMENTS

4. 1 Data

The experimental data can find in https://github.com/TachibanaYoshino/AnimeGAN/releases/tag/dataset-1. The training data include real-world images and cartoon images, and the size of the images was cropped to 256×256. while the testing data are only real-world images. In our experiment, there were 7, 493 real-world images. 6, 657 of which were used for training and the rest for testing. For the cartoon images, 1553 cartoon images from the movie "Paprika" are used for training the Kon Satoshi style model, 1650 cartoon images from the movie "Your Name" are used for training the Makoto Shinkai style model and 1792 cartoon images from the movie "The Wind Rises" are used for training the Miyazaki Hayao style model.

4. 2 Ablation experiments

4.2.1 Mixed domain attention mechanism:

We used 6, 657 real life images and 1, 792 Hayao Miyazaki style images to train the model with and without mixed domain attention mechanism respectively, and the results are shown in figure 5. figure 5(a) represents the real-image, figure 5(b) represents the results of the unapplied mixed domain attention mechanism, and figure 5(c) represents the results of the added mixed domain attention mechanism. Comparing figure 5(b) and figure 5(c), we can conclude that the model with mixed domain attention mechanism can well retain the chromatic

aberration of the original image. Furthermore the colors of the generated images are more cartoonish.

(a) Origin   (b) Without attention   (c) Ours
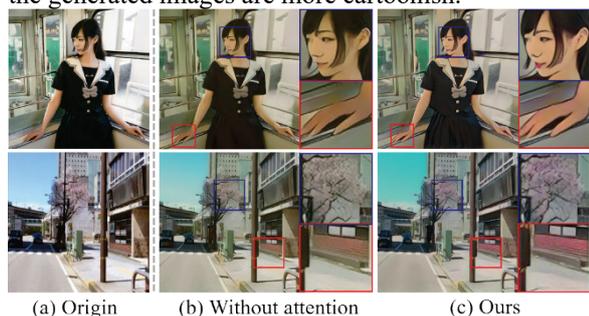
Figure 5. The effects of mixed attention mechanism

4.2.2 Skip connections

The dataset is the same as 4.2.1. Models with and without skip connections are trained respectively, and the results are shown in figure 6. figure 6 (a) represents the real-world image, figure 6(b) represents the results of the model without skip connections, and figure 6(c) represents the results of the model with skip connections added. Comparing figure 6(b), it can be seen in figure 6(c) that the model without skip connections loses most of the texture of the original image. The addition of skip connections able to retain the important texture of the original image.

(a) Origin   (b) Without skip connection   (c) Ours
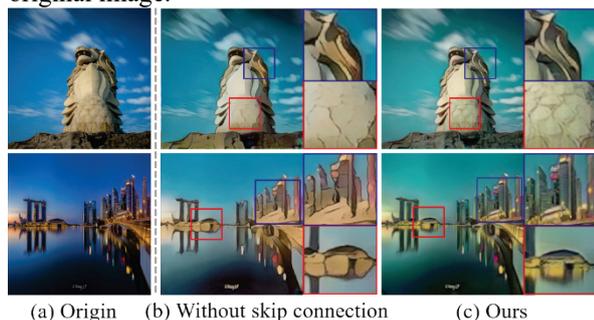
Figure 6. The effects of skip connections

4.2.3 New IRB block:

We added the new IRB block to MACGAN's generator, and then compared the size and performance of the three generator models, respectively. Since there was no IRB block in CycleGAN we compared it only with CartoonGAN and AnimeGAN. All the testing images are resized to 256×256. As show in Table 1, Our model has the smallest size of parameters and model size. And our inference time is the shortest than other models. We can conclude that our model is smaller and more efficient.

Table 1 Indicators of generator

Network	Params	Model Size	Inference Time
CartoonGAN	12253152	46.74M	51ms/image
AnimeGAN	3956096	15.09M	43ms/image
Ours	3911149	14.92M	41ms/image

4. 3 Comparison with state of the art

4.3.1 Qualitative comparison

We compared with CycleGAN, CartoonGAN and AnimeGAN, respectively. To be fair, we used a uniform training set to train their respective models separately. The

training set include 6, 657 real-world images and 1, 792 cartoon images of Miyazaki Hayao style. The results of our experiments are shown in figure 7. Infer from figure7(b), although CycleGAN generates cartoonized images, the texture structure of the cartoonized image is not clear, resulting in the difficulty in identifying the image content. As show in figure7(c), the cartoon images produced by CartoonGAN have a reddish brown color, which differs from Miyazaki Hayao style. In figure7(d), the textural features of AnimeGAN is better than Cartoon, but some details of the texture are not clear enough. Furthermore, the internal chromatic aberration of images are not obvious. In the first row of figure 7(d), the lipstick color of the lips on the face is not separated from the skin color. In figure7(e), the proposed MACGAN can not only generate cartoon-style images with clear texture, but also retain the chromatic aberration of the original image.

4.3.2 FID

Frechet Inception Distance (FID)[26] is widely used to evaluate the quality of the generated images.Pre-trained Inception-V3 model[27] can extract the advanced features of an image and calculate the distance between two image distributions. The FID value is smaller when the characteristics of two images are more similar. As the facial data have not been trained in the CartoonGAN model, FID was calculated only on the landscape dataset for the purpose of equitable comparisons. As table 2 shows, CycleGAN has the smallest FID to Cartoon images. And our has the second FID to Cartoon images. This indicates that the images generated by CycleGAN are the closest to cartoon images. The images generated by our method are more cartographic than those generated by AnimeGAN and CartoonGAN. Our method has the smallest FID to real-world photo while the CycleGAN is the largest. CartoonGAN and AnimeGAN have the middle FID to real-world. It shows that the image generated by CycleGAN loses a lot of features of the original image, while our method can well retain the important features of the original image. Furthermore, our method was able to maintain significant features of the original images while maintaining better cartoon performance than CartoonGAN and AnimeGAN.

4.4 Verify the cartoon style transfer of different dataset

In order to effectively verify the cartoon style transfer of our proposed MACGAN, we trained our model on three different cartoon datasets respectively. In figure 8, we have a high-quality cartoon transfer on the three styles of Paprika, Shinkai and Hayao.

Table 2. Performance evaluation based on the FID metric. See also the manuscript for expositions about the FID metric. Lower is better for the FID metric.

Methods	CycleGAN	CartoonGAN	AnimeGAN	Ours
FID to Cartoon	238.44	273.36	279.71	278.84
FID to Photo	310.52	272.79	244.89	241.40

Note: Black bold font indicates the smallest FID, the red indicates the second smallest FID.

| | | | | |
| (a) Origin | (b) CycleGAN | (c) CartoonGAN | (d) AnimeGAN | (e) Ours |
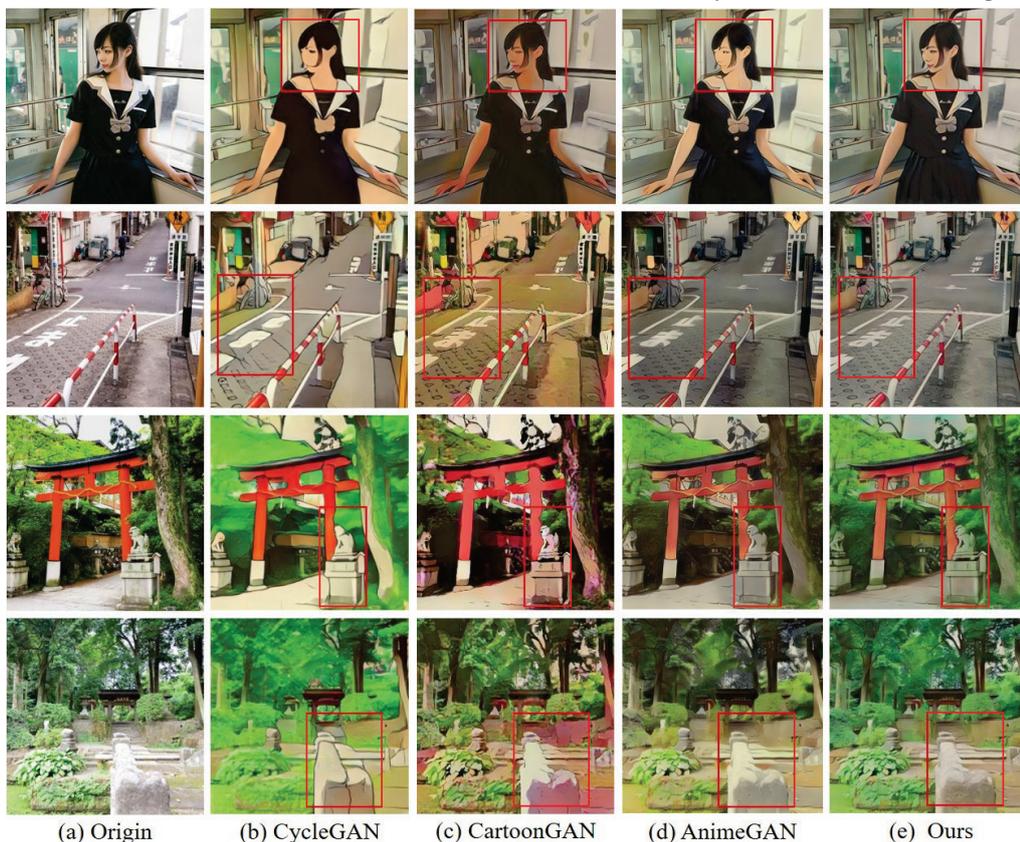
Figure 7. Comparison with state of the art

| | | | |
| (a) Origin | (b) Paprika | (c) Shinkai | (d) Hayao |
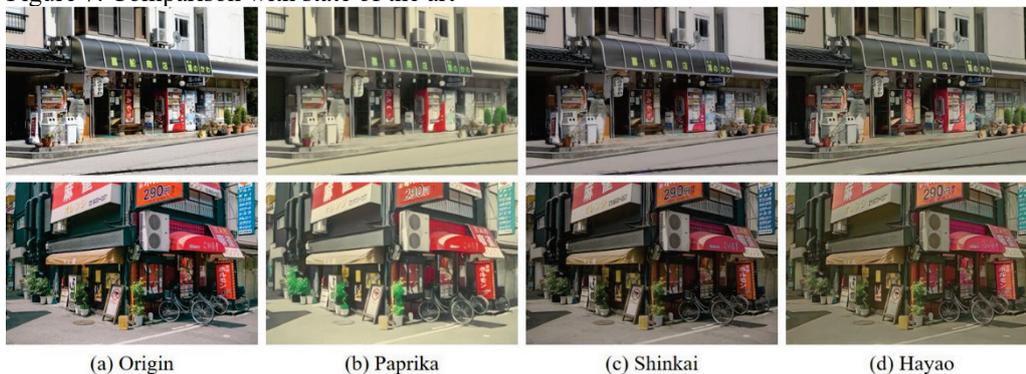
Figure 8. Cartoon style transfer on different datasets

5. CONCLUSIONS

In this paper, a method of image style transfer based on mixed domain attention is proposed, which can effectively transfer the real-world images to cartoon style images. In addition, MACGAN can ensure that the original image's chromatic aberration and texture features are well preserved on the basis of cartoon style transfer, and the image generation more efficiently than other generative adversarial networks. We proposed three optimization schemes: 1) A mixed domain attention mechanism is introduced to preserve the original realistic image chromatic aberration; 2) The skip connections structure is used to preserve the important texture of the original images; 3) The new IRB blocks is introduced to make image generation faster. The experimental results show that the proposed MACGAN can realize the style transfer of cartoon images with high quality and efficiency.

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Research on Chinese Electronic Medical Record Named Entity Recognition based on Lexicon Enhancement

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Abstracts: Aiming at the problems of named entity nesting, unclear entity boundary recognition and inaccurate Chinese word segmentation existing in Chinese electronic medical records, the performance of electronic medical records Named Entity Recognition (NER) is poor. We propose a named entity recognition method based on lexicon enhancement in Chinese Electronic Medical Records (EMRs), the BiLSTM-CRF model is used as the benchmark model, the character-based BERT pre-training model and the pre-trained word vector dictionary are introduced. The word vector dictionary preserves all possible matching words for each character. In addition, the medical dictionary is combined to better improve the problems of fuzzy entity boundaries and inaccurate word segmentation. The EMRs dataset provided by CCKS2017 evaluation task two is used as experimental data, experimental results prove that the model has achieved good results in the task of Chinese electronic medical records NER, and the F1 value is as high as 90.49%.
Keywords: Chinese electronic medical records; BiLSTM-CRF; Named entity recognition; Pretraining model

1. INTRODUCTION

With the rapid development of medical information, electronic medical records have also shown explosive growth. The large-scale EMRs record the entire medical process of patients, and contain a large amount of diagnosis and treatment information of the patients, which is an important data source for clinical medical research. Electronic medical records NER is to use computers to automatically identity and extract medically related named entity from unstructured clinical medical texts, such as body parts, check, diseases, symptoms, treatments etc. These named entities have identified the working foundation for the follow-up medical system construction and related research. At present, NER has achieved certain results in the general field, but the effect of NER for Chinese EMRs is not very good. Due to the particularity of the medical field, there are many unregistered words in the EMRs, which caused a great error in Chinese word segmentation, and the word segmentation will lead to the wrong downstream works. Besides, due to the personal writing habits of the doctors, the electronic medical record text does not have a unified and standardized writing format, and there are different expressions for the same entity, resulting in unclear entity recognition boundaries. Moreover, there are large number of English representations and abbreviations for entities such as

check, symptoms, and drug. These problems will increase the difficulty of identifying named entities in Chinese electronic medical records.

2. RELATED WORK

Named entity recognition is a basic task of Natural Language Processing (NLP), which refers to the recognition of entities with specific meanings in the text, it plays a key role in the post-structuring of the text.[1] The application of NER to EMRs has greatly promoted the research of medical systems. The traditional NER method is based on machine learning methods, such as Conditional Random Field[2][3] (CRF), but the method has high requirements for the quality of feature selection, requires domain experts to design features, which is time-consuming and labor-intensive. With the rise of deep learning technology, the deep neural network method is used in the electronic medical record NER task. Its advantage is that it can automatically train and extract features through a built neural network model. For the processing of sequence text, the most effective neural network model is the Long and Short-Term Memory [4] (LSTM) network, which effectively solves the long-distance dependence of the sequence through the "gating mechanism". Xia Y et al.[5] applied the LSTM network model to medical record NER and found that the F1 value of LSTM was 7.47% higher than that of CRF that relied on manually defined features, thus proving the effectiveness of the LSTM model; Zhang C et al.[6] based on the LSTM model of the embedded CRF, effectively identified five type of named entities in the electronic medical record: body part, disease, check, symptom and treatment.

In Chinese NLP tasks, word segmentation is a necessary basic task. For Chinese EMRs NER task, because of the particularity of the field, there are a large number of medical professional terms in the medical record, which will accumulate to entity recognition errors due to word segmentation errors, especially for named entities such as diseases and drugs. Wang R et al [7] constructed BiLSTM-CRF model based on word embedding to recognize named entities in EMRs, and the recognition effect of disease entities was not ideal. Research shows that the character-based Chinese NER method is better than the word-based method, because the character-based model dose not cause word segmentation errors, but it loses the semantic information contained in the word itself. Therefore, merge lexicon information on the character-based model has become research trend in Chinses EMRs

NER. On the BiLSTM-CRF model based on character embedding, Li G et al [8] introduced external dictionary resources to improve the recognition effect, and also had certain ability to discover unregistered words; Zhang Y et al[9] proposed Lattice-LSTM network model, which effectively leverages the information of characters and words, and achieved very obvious entity recognition effects in the general filed.

Based on the above research, the superiority of NER based on the deep neural network of character and word combination, especially for the medical domain. Therefore, we will introduce word vector information corresponding to each character on the BERT-BiLSTM-CRF model based on character embedding. It not only considers the problem of polysemous words, but also improves the problems of unclear entity boundary recognition and entity nesting in EMRs.

3. CHINESE ELECTRONIC MEDICAL RECORDS NER MODEL

The model contains four layers: Character embedding layer, Fusion word embedding layer, BiLSTM layer, CRF layer. The main function of character embedding layer is to use the BERT model to train the input text to obtain character vector representation containing context information; The function of fusion word embedding layer is to integrate the vocabulary information corresponding to each character into the character embedding to solve the problem of unclear recognition of named entity boundaries. The role of the BiLSTM layer is to extract the semantic features of text, and CRF layer is to consider the order between tags and decode to a globally optimal tag sequence. The overall structure of the model is shown in Figure1.

3.1 Character embedding layer

The traditional word embedding model (like word2vec [11]) uses only one global embedding representation for each word in the text, that is the same word in different contexts is represented by the same vector, which is context-independent, but in the EMRs text, the same word in different contexts may have different semantics. To solve the problem, Devlin et al [12] proposed BERT pre-trained language model, it uses bidirectional transformer as a feature extractor. Each character representation integrates the information on the left and right sides of the character, and train deeper layers, then we can obtain a dynamic embedding that changes constantly according to the context of the text, and effectively improve the problem of polysemous words. The character embedding in the model is composed of three embeddings: Token Embeddings, Segment Embeddings, Position Embeddings. The BERT model input representation is shown in Figure 2. Among then, Token Embeddings use WordPiece to segment the text, converts each character in the text into one-dimensional vector in query vector table; Segment Embeddings is used to distinguish different sentence; Position Embeddings records each the unique overall information of the sentence.
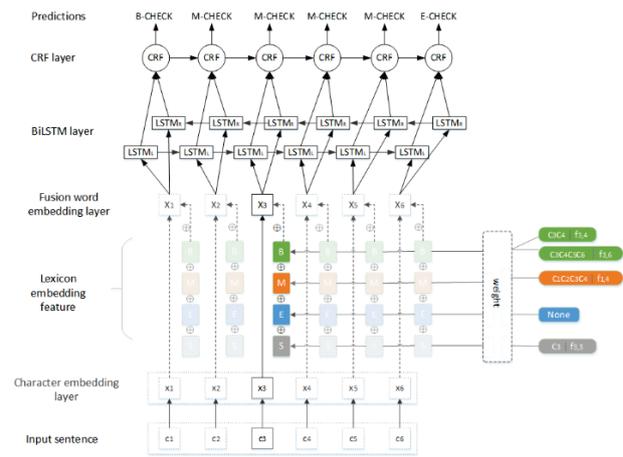
Figure 1 The overall structure of the mode
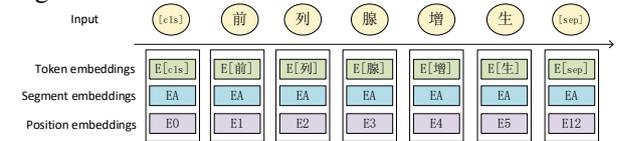
Figure 2 BERT pre-training model input representation

The input vectors are trained by the transformer feature extractor to obtain the output vectors of the model. The most important part of the transformer coding unit is the self-attention part. In the self-attention mechanism, each character corresponds to 3 different embeddings, as Query(Q), Key(K), and Value(V). The calculation formula of the attention mechanism between characters is as follows:

$$Attention(Q, K, V) = soft\,max\left(\frac{QK^T}{\sqrt{d_k}}\right)V \qquad (1)$$

dk denotes the dimension of the input vectors, QK^T denotes the relationship between computing input character vectors, after $\sqrt{d_k}$ dimensionality reduction, then softmax normalization to get the weight representation, finally the output is the weighted sum of all character embeddings in the sentence. In the way, the representation of each character contains information about other words in the sentence, which is context-dependent.

3.2 Fusion word embedding layer

In EMRs text, owing to the different writing habit of different doctors, there are many different expressions for the same entity. For example, "Bilateral biceps brachialis and tendon reflexes of the heel knee" and "Bilateral biceps brachialis and tendon reflexes of the heel knee", these two terms have the same meaning and are both in the category of "CHECK". But only the character embedding based on BERT can easily identify the "Bilateral biceps brachii" in the first term as a "BODY" category, causing entity recognition errors, which affecting the efficiency of NER in EMRs. Therefore, we consider using the "BMES" word embedding to embed matching vocabulary information to solve the problem of unclear entity boundary recognition. In order to better embed word embedding information in the character-level model, this paper uses the word2vec model to train the unlabeled EMRs text and a large number of general field texts to obtain a word vector dictionary containing medical professional terms. By scanning the matching dictionary for each input sentence,

"BMES" word embedding set is obtained for each character in the sentence. For the word embedding training of EMRs text, it is impossible to use jieba word segmentation to obtain accurate results, so we consider adding a customized medical dictionary to better improve word segmentation accuracy. Since there is no unified and complete medical dictionary in the research of Chinese EMRs, the source of medical dictionaries in this paper include ICD-10, crawling of related named entities on health and medical websites, and has labeled entities in the experimental dataset.

For the input sentence s, use the pre-training BERT model to train the vector representation xi of each character ci, and then scan the matching dictionary for the input sentence to obtain the four words embedding set of each character in different position of "BMES", the specific formula is as follows:

$$B(c_i) = \{w_{i,k}, \forall w_{i,k} \in D, i < k \le n\}$$
$$M(c_i) = \{w_{j,k}, \forall w_{j,k} \in D, 1 \le j < k \le n\} \quad (2)$$
$$E(c_i) = \{w_{j,i}, \forall w_{j,i} \in D, 1 \le j < i\}$$
$$S(c_i) = \{c_i, \exists c_i \in D\}$$

D denotes matching dictionary, B(ci) denotes word embedding collection corresponding to the starting position of ci, M(ci) denotes corresponding to the middle position of ci, E(ci) denotes corresponding to the end position of ci, S(ci) denotes a word embedding collection composed of ci alone.

Then the word embedding collection is compressed, the word embedding of each category is compressed into an overall word embedding. Each word is given different weight according to the frequency z(w) of each word in training dataset, weighted and summed to obtain each category word embedding, the specific formula for the overall word embedding of type B is as follows:

$$v^s(B) = \frac{4}{Z} \sum_{w \in B} z(w) e^w(w), Z$$
$$= \sum_{w \in B \cup M \cup E \cup S} z(w) \quad (3)$$

Finally, the four words embeddings collection are connected to represent a whole, and they are added to the character embedding. The specific formula is as follows:
$$e^s(B, M, E, S) = [v^s(B) \oplus v^s(M) \oplus v^s(E) \oplus v^s(S)]$$
$$x^c$$
$$\leftarrow [x^c; e^s(B, M, E, S)] \quad (4)$$

3.3 BiLSTM layer

Long Short-Term Memory (LSTM) is a variant of Recurrent neural network, it solves the problem of gradient disappearance or gradient explosion when processing long text sequences through the gating mechanism[13]. LSTM is composed of three "gate" (forgetting gates, input gates, output gates) and a memory cell. Its cell structure is shown in Figure 3. The state is maintained and updated through these three gate structures to ensure better capture of long-distance text sequence information.
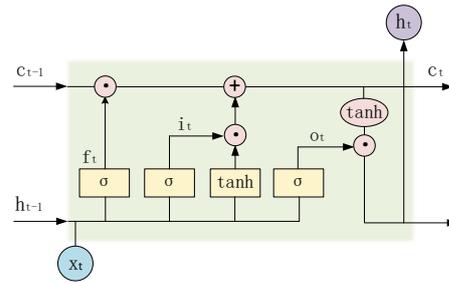
Figure 3 LSTM cell structure diagram

After training the character embedding layer and fusion word embedding layer, the vector representation sequence X is obtained, vector representation sequence X= {x1, x2, x3, …, xn}, xt denotes the vector representation corresponding to the tth character in the text sequence. The calculation of the hidden state of the tth character is not only related to the vector representation xt, but also related to the hidden layer output ht-1 and the memory cell state ct-1 of the previous character xt-1. The calculation formula of the hidden state $\overrightarrow{h_t}$ of the tth vector representation is shown in (5) ~ (10):

$$f_t = \sigma(W_f h_{t-1} + U_f x_t + b_f) \quad (5)$$
$$i_t = \sigma(W_i h_{t-1} + U_i x_t + b_i) \quad (6)$$
$$\tilde{c}_t = tanh(W_c h_{t-1} + U_c x_t + b_c) \quad (7)$$
$$o_t = \sigma(W_o h_{t-1} + U_o x_t + b_o) \quad (8)$$
$$c_t = f_t \odot c_{t-1} + i_t \odot \tilde{c}_t \quad (9)$$
$$\overrightarrow{h_t} = o_t \odot tanh(c_t) \quad (10)$$

where xt represents the input vector representation of the tth character, ct denotes tth character cell state, $\overrightarrow{h_t}$ is the hidden state. Wf, Wi, Wo, Wc $\in R^{4d_h \times d_x}$, Uf, Ui, Uo, Uc $\in R^{4d_h \times d_h}$, and bf, bi, bo, bc $\in R^{4d_h}$ are the parameters of the LSTM; σ is the sigmoid function and $\odot$ represents element-wise product.

For the research of EMRs NER, the information of the current entity is not only related to past information, but also related to future information. Therefore, single LSTM can only learn the history information of the current state, and the future information cannot be obtained. Considering the reason, we use BiLSTM network to extract the features of the input sequence. The BiLSTM network adds a backward LSTM propagation network on the basis of the forward LSTM. The backward LSTM shares the same definition as forward one but in an inverse sequence order. The concatenated hidden states at the tth character of the forward $\overrightarrow{h_t}$ and backward $\overleftarrow{h_t}$ LSTMs $h_t = [\overrightarrow{h_t} \oplus \overleftarrow{h_t}]$ forms the context-dependent vector representation.

3.4 CRF layer

The feature extraction in the BiLTSM layer fully consider the context information, but does not consider the dependency information between tags. In the actual label of the sentence, the start tag of each entity must be "B-" or "S-", and the "B-" tag must be immediately followed by the "M-" or "E-" tag. In addition, it must be label of the same entity category. For example, {B-BODY, M-BODY, E-BODY, …} belong valid tag sequence, for {B-BODY, M-SIGNS, …} is an invalid tag sequence. In order to

better obtain the correlation between tags, we consider adding a CRF layer after the BiLSTM layer, using the hidden vector output by the BiLSTM layer as the input of the CRF layer, then using CRF for joint decoding. In the NER task, for an input sentence, it is very helpful to decode the optimal prediction result if the relevant information of the adjacent tags can be used.

CRF is an undirected graph model, which is a conditional probability distribution model of obtained another group of output random variables under the condition of a given set of input random variables., and can be widely used in sequence labeling[1]. For an input sentence s, after training of the character and word vector representation layer and the BiLSTM feature extraction layer, the trained vector sequence with semantic features is used as the input of the CRF layer, and the label of the current word in the sentence is considered in conjunction with the label of the adjacent word to perform sentence-level sequence labeling. After a series of conditional probability calculations, the score of each tag sequence l is obtained. Finally, the score of the tag sequence is normalized to obtain a probability value P from 0 to1, and the tag sequence l corresponding to the same sentence sequence is found with the largest probability value as the final tag sequence.

$$score(l|s) = \sum_{i=1}^{n} \sum_{j=1}^{m} \lambda_j f_j(l_{i-1}, l_i, i, s) \qquad (11)$$

$$P(l|s) = \frac{exp(\,score(l|s))}{\sum_L exp(\,score(L|s))} \qquad (12)$$

where s is the input sequence, l is the labeled sequence, fj represents the feature of the embedding representation after training, λj represents the corresponding weight, n refers to the length of the input sequence, m refers to corresponding feature number.

4. EXPERIMENT AND RESULT ANALUSIS

4.1 Experimental data and annotation strategy

The experimental dataset comes from the desensitized Chinese EMRs dataset of real patients provided by CCKS2017 evaluation task 2. The dataset contains 1200 labeled training data and 400 unlabeled test data. It also provides 10606 unlabeled EMRs text. In the labeled data, there are 5 category of predefined entities, the details of data are shown in Table 1.

Table 1 Entity category and number of entities

Entity category	BODY	SIGNS	CHECK	DISEASE	TREATMENT
Entity number	10719	7831	9465	722	1048

In the dataset, each original data document has a corresponding annotation document, and the annotation document contains four parts: the entity name, the starting position in the document, the ending position in the document, and the category to which the entity belongs. In order for the model to process the medical record data, it needs to be converted into a format that the model can receive. So it is necessary to use the labeling system of the NER to label entities, the labeling method used in this paper is the BMES label, with B, M, E indicating that the character is the beginning, middle, end of a word, respectively, and S indicating that the character itself forms a single-character word. For a sentence sequence of

EMRs, input it into the trained model, and mark the five types of predefined named entities with "BMES" and non-entities with the "O" label, finally get with NER result. For example, "Therefore, lacunar cerebral infarction was diagnosed, and symptomatic treatment was given, including aspirin to prevent platelet aggregation, atorvastatin to stabilize plaque, Danhong injection to improve blood circulation, and vinpocetine to expand the tube." The NER results is shown in Figure 4.

Figure 4 Sentence sequence and named entity recognition results

The traditional NER method of EMRs is particularly easy to identify errors in the named entities of the treatment category, for example " Aspirin" is disassembled as "拜" and "Aspirin", then "拜" is recognized as non-entity; and "长春西汀" is disassembled as "长春" and "西汀". As a result, a large number of treatment category named entity boundary recognition errors are caused, thereby reducing the overall entity recognition accuracy rate of the EMRs.

4.2 Evaluation metrics

To comprehensively evaluate the performance of the model, this paper uses the commonly used evaluation criteria in the field of NER, including precision rate (P), recall rate (R), and F1-score (F1). The formula of indicator for each category is as follows:

$$P = \frac{TP}{TP + FP} \times 100\% \qquad (13)$$

$$R = \frac{TP}{TP + FN} \times 100\% \qquad (14)$$

$$F_1 = \frac{2 \times P \times R}{P + R} \times 100\% \qquad (15)$$

where TP is the number of named entities in the test set that are correctly identified in this category, FP is the number of named entities in the test set that are incorrectly identified, and FN is the number of entities that are related named entities but not detected by the model.

4.3 Experimental parameter settings

This paper uses the Pytorch1.4.0 deep learning framework and uses the NVIDIA graphics card GEFORCE GTX 1650Ti for acceleration. The character embedding pre-training model uses bert_base_chinese, has 12 layers of transformer, 12 head patterns, hidden layer is 768 dimensions, maximum sequence length is 128, and batch size is 20. The number of hidden layer units of LSTM is 300, the learning rate is set to 0.0015, the clip is 5.0, and the batch-size is set to 10. In order to prevent the model from overfitting and improve the generalization ability of the model, dropout is added to the network model and set to 0.5. For the selection of the number of iterations epoch, if the epoch is too small, it may lead to underfitting, and too large may cause overfitting. In the experiment, by fixing other parameters and changing the size of the epoch, different result sets are obtained. As shown in Figure 5, it can be seen from the figure that when the epoch is 25 rounds, the P, R and F1 gradually flattens. As the number

of iterations increases, the model gradually fits and becomes stable, so the number of iterations is selected as 50 rounds.
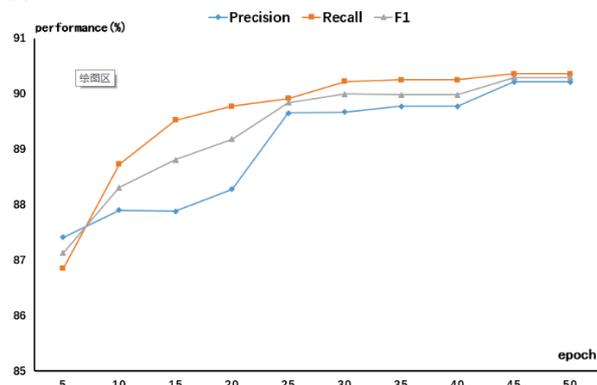
Figure 5 Comparison of model results with different iteration times

4.4 Performance comparison experiment of different models

Experiment uses the EMRs dataset provided by CCKS2017, and uses five-fold cross validation method to divide the training set, validation set, and test set according to a ratio of 3:1:1. In order to verify the effectiveness of the model, compare it with the following model:

Table 3 Named entity recognition results of different models

Model	Precision	Recall	F1
Word2vec-BiLSTM-CRF	83.88	86.97	85.39
BERT-BiLSTM-CRF	88.73	88.22	88.45
Lattice-LSTM-CRF	89.21	90.29	89.75
IDCNN-CRF	90.01	90.62	90.31
BiLSTM-CRF+Dict	90.04	90.91	90.41
BERT-BiLSTM-CRF+Lexicon	90.41	90.57	90.49

From the experimental results, we can see that the BiLSTM-CRF model based on the BERT character-level fusion word embedding (BERT-BiLSTM-CRF+Lexicon) has a better result than other models:

(1) Compared with the word-based word2vec-BiLSTM-CRF model, our model improves the accuracy rate, recall rate and F1 by 6.53%, 3.60%, and 5.31% respectively. It shows that compared with the word embedding of the traditional word2vec model, the character embedding of BERT better combines context information and can better represents the sematic information of character.

(2)Compared with BERT-BiLSTM-CRF, the P, R, F1 are improved, indicating the importance of incorporating word embedding information into character-based models. Especially for the entities of the treatment category in EMRs, which are uncommon or English-translated entities. They cannot fully distinguish the boundary of named entities only by relying on the characteristics of character embedding.

(3) For the current optimal Lattice-LSTM-CRF model, the f1 value of BERT-BiLSTM-CRF+Lexicon increased by 0.74%. It shows that our model is better than Lattice

simple character and word fusion feature method. Because the fusion of word embeddings in this paper retains the matching results of all words, instead of heuristically selecting the matching results of characters. Moreover, the training speed is also faster than Lattice-LSTM, because the Lattice-LSTM model does not support parallelization.

(4) Cao Yiyi et al. [15] incorporated word embedding in the IDCNN-CRF model based on character embedding, and obtained F1 value of 90.31%, which proved the effectiveness of character and word embedding combination. But IDCNN (Iterated Dilated Convolutional Neural Network) has a better effect on local feature extraction, and has certain limitations for longer sequence of medical records. While most entities in the EMRs text are composed pf multiple words, the characteristic of the LSTM model is that it can be better capture long-distance dependent information.

(5) Li Gang et al[8] integrated the BiLSTM-CRF model and dictionary resources in the medical field to identify the EMRs data, which proved that the prior dictionary knowledge further enhanced the performance of neural network, and the F1 value was as high as 90.41%. Since the word2vec model is used to train the character embedding to obtain static semantic feature vector. The problem of polysemous words has not been fully resolved, so the precision rate has not been effectively improved.

5. CONCLUSION

Experiments prove that the BiLSTM-CRF model based on the BERT character-level fusion lexicon information is superior to the research of Chinese electronic medical record NER. It not only can distinguish the different meanings of the same word in different contexts in EMRs text, but also fully solve the problem of ambiguity of entity boundaries and entity nesting in the medical record text by incorporating matching vocabulary information. In the future, we will consider introducing an attention mechanism to assign different attention weights to the feature vectors of the Bi-LSTM layer, so as to maximize the attention to effective information while preserving effective text information.

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Research on Single Image Rain Removal Based on Conditionally Generated Adversarial Network

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Abstract: In order to solve the single image rain removal problem, a single image rain removal method based on conditional generation adversarial network is proposed. We use the Conditional Generation Adversarial Network (CGAN) as the framework, use the raindrop image as additional information, and add an attention mechanism to focus on the raindrop background of the image, use a densely connected convolutional network (DenseNet) as the generator architecture, strengthens feature propagation, and define a new overall loss function to solve the problem of unstable network training. Comparing the generated image with the real image, it is found that this method has a better rain removal effect than the existing rain removal method, and the blurred background generated after the image removed of rain is reduced to a greater extent. Comparing the generated image with the real image, this method has a better rain removal effect than the existing rain removal method, and the blurred background generated after the image is rained is reduced to a greater extent.
Keywords: CGAN; Single image rain removal; Attention mechanism; DenseNet; Overall loss function

1. INTRODUCTION

Severe weather conditions such as rain and snow have seriously affected the quality of outdoor images, making it impossible to further study and use the acquired images. Therefore, image rain removal has become one of the most important research areas in computer vision and image processing.

The research on image removal of rain can be roughly divided into two categories: video image removal of rain and single image removal of rain. Video image rain removal can use the geometry, brightness, color and space-time characteristics of raindrops. Among them, the spacetime characteristics of raindrops are the most widely used, Raindrop detection, separation and removal can be realized by using the property that it is impossible for the same raindrop to appear in two adjacent frames at the same time, while single image removal of rain is difficult because it only contains rain scene images of a specific moment and cannot take advantage of the temporal and spatial characteristics of raindrop noise. However, single image rain removal is more widely applied, more practical and more challenging, making it the main research object of image rain removal.

A large number of research methods for single-image rain removal have been proposed, and the rain removal effect has become more and more significant. Kang [1] divided the raindrop image into high frequency and low frequency parts based on the sparse coding dictionary learning and the rain removal method of the classifier, and removed the raindrops in the high frequency part of the image, so as to achieve the purpose of image removal. Huang [2] proposed a self-learning method to remove high-frequency raindrops to achieve a better rain removal effect. Luo [3] proposed a discriminative sparse coding. By learning an inherently repelling dictionary, the coefficient vector of the rain layer becomes sparse, so as to achieve the purpose of separating the rain streaks in the image from the background image.

In recent years, the hot development of machine learning has made more people begin to use deep learning methods to process single images to remove rain. Fu [4][5] based on the convolutional neural network to remove the rain streaks in the high frequency part of the image, so that the rain removal effect is further improved, but the rain streaks still remain in the image after the rain is removed. Yang [6] proposed a multi-scale deep learning neural network framework that uses a multi-scale network to capture rain streaks in the image, and then uses a convolutional neural network to effectively detect and remove rain streaks.

The above method roughly compares the difference of the image, that is, on the basis of the rain image, some methods are used to determine the rain part vector, and then the difference is made with the original image to obtain the after-rain image. However, this series of methods will inevitably cause the loss of image chromatic aberration, the lack of background pixels, and a large number of similar blocks during the image segmentation process. This makes the image have artifacts after raining, and the blurring is serious, which greatly reduces the subsequent performance of the image. To this end, we propose a single-image rain removal method based on the conditional generation confrontation network CGAN [7]. In the generator part, the densely connected convolutional network DenseNet [8] is used to reduce the amount of input parameters, enhance the feature input, and add the attention mechanism [9] focuses on the raindrops in the image to achieve a better rain removal effect. Aiming at the instability of CGAN network training, a new loss function is defined to make the network training more stable. It may reduce the serious problem of pixel loss after removing the rain image, and better supplement the edge details of the image.

2.RELATED WORK

2.1 Conditional Generative Adversarial Network

The conditional generation confrontation network CGAN is based on GAN [10]. The original GAN does not need to establish a hypothetical distribution. It uses a distribution function to directly sample on the training data set, so that it can theoretically generate an image that is almost the same as the original image, but this training method seems too free and does not have any constraints. If the data set is too large, it will lead to a series of unforeseen consequences such as the disappearance of the training gradient. Therefore, CGAN is based on the original generator discriminator model. A constraint condition is respectively attached. This condition is other arbitrary auxiliary information, such as type label or other data types, which is mainly used to better achieve image consistency. The objective function of CGAN is defined as

$$\min_{G}\max_{D}V(D,G) = E_{x \sim P_{data}(x)}[\log D(x)] +$$
$$E_{z \sim P_z(z)}\left[\log\left(1 - D\big(G(z,y)\big)\right)\right] \quad (1)$$

Compared with GAN, an additional condition y is added to constrain GAN network training, $G(z,y)$ means that the generator generates samples based on input conditions y and random vectors z, $D(x|y)$ means that the discriminator makes judgments based on the constraints y and the samples x generated by the generator, and compares the authenticity between the generated sample and the input sample.

2.2 Attention mechanism

The attention mechanism evolved from the selective attention mechanism of human vision. Which is a brain signal processing mechanism unique to human vision. Human vision quickly scans the global image to obtain the target area that it needs to focus on. Similarly, the introduction of an attention mechanism in deep learning allows network training to simulate human visual attention to quickly obtain the desired feature vector, simplify network training and better achieve training goals. Add an attention mechanism between generator architectures. Make the network training more targeted. The focus of the network training is on the raindrop part of the image. After the attention mechanism is processed, the input image characteristics can be simplified.

The calculation of the attention mechanism roughly consists of the following two parts: 1Calculate the attention distribution on all input information 2 Calculate the weighted average of the input information according to the attention distribution. Specifically, $X = [x_1, \dots x_N]$ is expressed as N groups of input information, where each vector $x_i, i \in [1, N[]]$ is represented as a group of input information. In order to simplify the input, a query vector q is introduced to represent the information related to the input vector, and the input vector is calculated through a scoring function and the correlation between the query vector, and then use the attention variable $z \in [1, N]$ to indicate which vector is selected. c_i is used to represent the probability that the vector i is selected, which is defined as:

$$c_i = p(z = i | X, q()) = soft\,max\big(c(x_i, q)\big)$$

$$= \frac{exp(c(x_i, q)())}{\sum_{j=1}^{N} exp\big(c(x_j, q)\big)} \quad (2)$$

Among them $c(x_i, q)$ is the attention scoring function, we use an additive model:

$$c(x_i, q) = v^T \tanh\big(W_{x_i} + Uq\big) \quad (3)$$

To calculate its size, where W, U, v is the attention parameter.
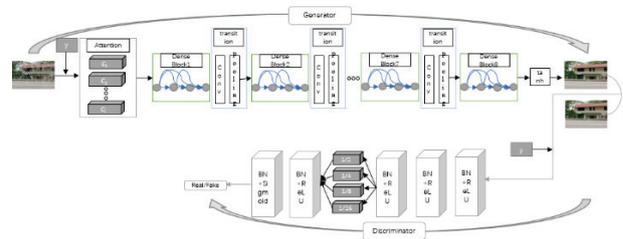
Figure.1 CGAN network structure: generator and discriminator

3. NETWORK STRUCTURE 3.1 Symmetric generator

The purpose of single-image de-raining is to produce higher-quality de-raining images. The generator should ensure the result of raindrop removal as much as possible to reduce the loss of picture background detail pixels, and realize the background reconstruction of the image after the rain, so it should design a Good generator architecture to generate rain-removing images.

Existing methods, such as sparse coding [1-3], neural network and convolutional neural network CNN [4-5] based methods all use a symmetrical encoding-decoding [11] structure. For example, the method based on sparse coding uses a learned or predefined synthetic dictionary to decode the input rainy image into an effective mapping of the sparse matrix, and then uses another set of analysis dictionary to transmit the matrix coefficients to the required rain-removed image. Normally, the input rain image is separated into the background image and the raindrop part, and then the separated background image is parsed into the original image background.

Through the above methods, it can be seen that a symmetrical architecture is a good choice for building a generator. The generator learns end-to-end mapping to separate the raindrops from the background image of the input rain image. Compared with the existing generator architecture using U-Net [12] or ResNet [13], we adopt DenseNet, a way that can directly connect each layer of the network to each subsequent layer in a feed-forward manner, and change the ResNet summation becomes the connection, that is, the traditional connection is connected layer by layer, and there are L connections when there are L layers, while DenseNet has $\frac{L(L+1)}{2}$ connections, which can solve the gradient more effectively than ResNet Eliminate problems, enhance information transmission, enhance feature reuse, greatly reduce the amount of input parameters, and reduce over-fitting.

The specific generator architecture is shown in Figure 1. After the input rain image is processed by Attention, it becomes a feature vector map with different probabilities, and then enters DenseNet. According to the down sampling layer, the generator is divided into multiple dense blocks, each layer in the dense block is composed of a combination function (BN+ReLU+3*3Conv), and

transition layers are added between the dense blocks, the transition layer is composed of (1*1Conv and 2*2Pooling) Composition, used to reduce the number of input features in order to better solve the problem that the connection between each dense block must have the same size feature map, the last layer uses Tanh activation to generate an image after rain .

3.2 Multi-scale discriminator

The purpose of the discriminator is to determine the authenticity of the image generated by the generator, and make the image generated by the generator as close to the real as possible. The two play games with each other and make progress together. The discriminator distinguishes the type label y and true or false for each input image, which not only guarantees the authenticity of the output image, but also makes the result of removing rainwater visually attractive.

As shown in Figure 1, the convolutional layer with batch normalization BN [14] and ReLU [15] activation is used as the basis of the entire discriminator network. In addition, stack a multi-scale merging module at the end of the discriminator, which merges the elements in different proportions, then up-samples and connects the merged features, and performs 1*1 convolution and sigmoid function [16] activation to produce a probability score normalized to [0, 1]. The closer the score is to 1, the more realistic the image is. Otherwise, continue training until a satisfactory result is achieved.

4. OVERALL LOSS FUNCTION

Because the GAN network is unstable in training, it is easy to cause incomprehensible results in the generator stage. One possible reason is that the distribution of the input raindrop image and the training sample is different, causing the output image to be unrecognizable. In order to solve this problem, this article introduces a new loss function: the overall loss function, which is defined as follows:

$$L_O = L_U + \alpha L_T + \beta L_D \qquad (4)$$

Among them, L_U represents the normal unit pixel loss, that is, Euclidean loss, L_T represents the texture loss [17], and L_D represents the conditional confrontation loss, that is, the loss generated by the network during the training of the generator countermeasure.

α and β are the weight ratios of texture loss and conditional resistance loss, respectively. If both α and β are 0, that is $L_O = L_U$, the network can be regarded as a general CNN structure, that is, only the general unit pixel loss is included in the image processing process. If β is 0, that is $L_O = L_U + \alpha L_T$, the network is regarded as a complex CNN structure. The processing process not only has the normal unit pixel loss, but also includes the texture detail loss of the processed image style. If α is 0, that is $L_O = L_U + \beta L_D$, it is a simple GAN network structure.

In this process $G: \{x, y\} \to z$, where x is the input image, y is the condition vector, and z is the output de-raining image. Assuming that a given image has C channels, W width and H height, that is, the image size is ($C \times W \times H$), then L_U, L_T, L_D are defined as follows.

(1) Euclid loss

Let ϕE is the generation network G used to generate the rain

removal output, then the normal Euclidean loss L_U is defined as:

$$L_U = \frac{1}{CWH} \sum_{c=1}^{C} \sum_{x=1}^{W} \sum_{y=1}^{H} \left\| \phi E(x)^{c,w,h} - (y)^{c,w,h} \right\|_2^2 \qquad (5)$$

(2) Texture loss

First look at the image feature map through the Gram matrix [18], and extract the style representation of the image according to the spatial correlation. The Gram matrix is defined as:

$$G_{i,j}^{c,w,h} = \sum_k F_{i,k}^{c,w,h} F_{j,k}^{c,w,h} \qquad (6)$$

Among them, F_{ik} and F_{jk} respectively represent the activation of the image processed by the network in the i, j layers, and the texture loss function L_T can be expressed as:

$$L_T = \frac{1}{C_i W_i H_i} \sum_{c=1}^{C} \sum_{w=1}^{W} \sum_{h=1}^{H} \left(G_{i,j}^{c,w,h} - V_{i,j}^{c,w,h} \right)^2 \qquad (7)$$

Where $V_{i,j}$ represents the product of feature vectors of the i and j layers of the input image.

(3) Condition against loss

Assuming that the generator produces N sets of rain-removed images, the conditional adversarial loss from the CGAN model is defined as:

$$L_D = \frac{1}{N} \sum_{i=1}^{N} \sum_{c=1}^{C_i} \sum_{w=1}^{W_i} \sum_{h=1}^{H_i} \log \left(D\left(\phi E(x)^{c,w,h} \right) \right) \qquad (8)$$

5. ANALYSIS OF RESULS

The environment of this experiment is Intel Core i7-8750H, 64-windows, and the basic configuration dependent is pycharm2019, Matlab, and Tensorflow-gpu2.0 is used as the deep learning framework. All model building and model training are completed on this framework.

5.1 Synthetic raindrop training set

Because it is difficult to obtain a large number of corresponding data with and without rain from real life, this paper uses the data set used by Rui Qian [19]. The training set contains 861 image pairs and the test set is 239 in total. In this image pair, all images with rain and images without rain correspond one-to-one, that is, they are all shot under uniform conditions. The only difference is that the lens with the rain image has messy water droplets, which simulates the rainy scene as much as possible. The image is convenient for follow-up experimental research.

5.2 Neural network parameter settings

Use Adam [20] to optimize the model, the optimization parameter is set to 0.5, the network saves the weight of the generator discriminator every 10 iterations of the network, set the parameters α=0.005, β=1, and set the value of α as small as possible to ensure that the texture loss cannot be compared to other The loss function has a decisive influence. In order to reduce the problem of network training gradient disappearance caused by excessive learning efficiency, stochastic gradient descent (SGD) [21] is used. The learning rate of the discriminant network and the learning rate of the generated network are initially set to 0.001, and each iteration is trained 500 times. The learning rate is linearly reduced to 1/10 of the original, until it is close to 0, all models are trained with a batch size of 1.

5.3 Analysis of results

5.3.1 Image de-raining results under different loss functions

In order to verify the effectiveness and significance of the overall loss function used in this paper, the rain-removing pictures generated under the action of different loss functions are compared.

It can be seen from Figure 2 that just under the loss function L_D training, the background color of the picture is missing after the rain is removed, the picture distortion is serious, and the image in some areas is seriously blurred. After the loss function $L_U + L_D$ is used, the picture background is roughly clear, but the picture color is too Saturated, which is a big change from the original image. The background still has pixels missing after the edges and raindrops are removed. After using the loss function $L_T + L_D$, the image detail processing has been further improved, and the color is basically the same as the original image, but it still exists Some pixels are missing. In response to the appeal, the overall loss function $L_U + L_T + L_D$ described in this article is used to train the CGAN network.

Image after rain is removed, the image color is not much different from the original image, the background image is basically not blurred, there is no obvious pixel loss, and the edge details of the image are also handled properly, the image quality has been greatly improved, fully confirming the significance of the overall loss function proposed in this paper for the network training.

In order to compare the quality of image generation more intuitively, two commonly used reference image quality indicators are selected: peak signal-to-noise ratio PSNR [22] and structural similarity SSIM [23] to quantitatively analyze the generated images. The unit of PSNR is dB, the larger the value, the smaller the image distortion; the unit of SSIM is also dB, which measures image similarity in terms of brightness, contrast, and structure. The value range is between [0, 1], and the larger the value, which means that the image distortion is smaller.

| Real | Input | L_D | $L_U + L_D$ | $L_T + L_D$ | $L_U + L_T + L_D$ |

Figure. 2 Image de-raining under different loss function

Table 1 Image PSNR and SSIM values under different loss functions

Images	Indices	L_D	$L_U + L_D$	$L_T + L_D$	$L_U + L_T + L_D$
1	PSNR/dB	16.6916	18.3273	22.3523	23.5583
	SSIM/dB	0.7912	0.8360	0.8766	0.9060
2	PSNR/dB	16.8664	18.6616	21.6510	25.6139
	SSIM/dB	0.7230	0.7830	0.8365	0.9091

5.3.2 Image de-raining results under different methods

In order to verify the effectiveness of the method in this paper, the method of rain removal based on sparse coding dictionary learning and classifiers by Kang et al., namely literature [1], and Fu et al. based on convolutional neural network to achieve the removal of rain streaks in the high-frequency part of the image, namely literature [4] and Yang et al. based on the multi-scale deep learning neural network framework to detect and remove rain streaks, that is, the literature [6] is compared.

As shown in Figure 3, Real represents the real image without rain, Input represents the input image with rain. The method adopted in literature [1] does not effectively remove raindrops, and the image still has a lot of residual raindrops. Literature [4] Although the raindrops are removed well, most of the pixels in the image are lost

compared with the original image, and the color distortion is more serious. Similarly, the document [6] also achieves the removal of raindrops well, and the content of the image is almost unchanged. However, the background of the picture is seriously blurred and the picture details are poorly restored. It is impossible to carry out further research on the picture. Finally, our method not only removes the raindrops, but also restores the background of the picture basically the same as the original picture, the edges are not blurred, and the image detail processing is better than other three methods have been significantly improved, achieving a better rain removal effect, and confirming the progress of this method.

Also, in order to better display the quality of the image after de-raining, PSNR and SSIM are also used to quantitatively analyze the generated images obtained under the above algorithm. As can be seen from Table 2, the method in this paper is better than the literature [1], literature [4], The method involved in literature [6] has higher PSNR and SSIM values, indicating that the method in this paper has made better progress in image removal and reconstruction.

| Real | Input | literature [1] | literature [4] | literature [6] | our method |

Figure.3 Image de-raining under different methods

Table 2 Image PSNR and SSIM values under different algorithms

Images	Indices	Literature [1]	Literature [4]	Literature [6]	our method
1	PSNR/dB	21.7865	23.4580	24.5625	27.8854
	SSIM/dB	0.7452	0.7625	0.8110	0.8556
2	PSNR/dB	22.5136	24.3167	26.7217	28.6711
	SSIM/dB	0.7847	0.8342	0.8566	0.8951
3	PSNR/dB	20.8654	23.4290	25.7861	27.7249
	SSIM/dB	0.6980	0.7482	0.8162	0.8847
4	PSNR/dB	19.1317	21.3868	24.9371	25.9651
	SSIM/dB	0.7042	0.7571	0.8649	0.9032
5	PSNR/dB	20.3955	23.5871	25.7878	26.3012
	SSIM/dB	0.7363	0.7816	0.8261	0.8715

Table 3 Time consumption under different methods(second)

size	Literature [1] (CPU)	Literature [4] (GPU)	Literature [6] (GPU)	our method (GPU)
256*256px	150.2s	54.9s	19.2s	15.4s
512*512px	400.5s	174.3s	40.9s	35.8s

5.3.3 Time consumption under different methods

At the same time, Table 3 lists the time consumed to process a single image under different methods. It can be seen that the GPU-based calculation method is more efficient in time. At the same time, the method in this paper is compared with other algorithms in processing (256*256px) or (512*512px), The pictures of specifications and sizes consume less time, which reflects the efficiency of the method in this paper.

6.CONCLUSIONS

We propose a method to study image rain removal using conditional generation confrontation network architecture. The DenseNet structure is used in the generator model to reduce the problem of gradient disappearance, strengthen feature propagation, achieve feature reuse, and greatly reduce parameters. It also introduces the attention mechanism to strengthen the training proportion of the raindrop part of the network, and better realize the image rain removal work. The overall loss function is used to train CGAN to reduce the unstable factors of network training, improve network performance, enhance image detail supplementation, and improve the quality of the image after de-raining. However, this article only focuses on the raindrop part of the image, but in the real shooting scene, not only a single raindrop background, there may also be rainy images under more complicated weather conditions such as rain, fog, rain and snow. This article adopts the conditions to generate It is de-rained against the network structure, and the generated image cannot achieve the expected effect. We hope that further research can solve this problem.

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Research on the Path of Student Management in Colleges and Universities

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Abstract: The current thinking and working mode of student management in colleges and universities have changed a lot from the past. In particular, new requirements have been put forward for the comprehensive quality, management ability and educational methods of relevant management personnel in colleges and universities. Student management in colleges and universities must follow the guiding ideology of taking students as the main body as the main body, focusing on the construction of style of study and the cultivation of students' innovative ability, so as to stimulate enthusiasm, seek innovation, and be pragmatic to promote the deepening of college student management in the new era and improve, enhance the effectiveness of the management of college students, and complete the fundamental task of Lide Shuren.
Keywords: Counselor; College Student Management; People-Oriented Management

1.BE THE LEADER OF STUDENTS' THOUGHTS

As the cradle of cultivating high-quality talents, colleges and universities carry the functions of cultivating talents, scientific research, and serving the society, and also carry the important mission of Lide to foster people. Student management is an important guarantee for achieving this goal. Among them, as an important part of the management of colleges and universities, higher vocational colleges are an important symbol of the level of school management. To a certain extent, it determines the comprehensive level of the school and the quality of students. With the accelerated development of my country's higher education reform, the scale of enrollment in colleges and universities has been expanding year by year, the continuous deepening of social reforms in all aspects of colleges and universities, and the overall promotion of the credit system teaching management reform, students' thinking and concepts have become increasingly complex. Traditional management concepts and management systems in student management work have been difficult to adapt to the needs of the development situation, and we must establish a student-based management concept. Continuously carry out the reform and innovation of management concepts and management systems.

One of the most important tasks of college counselors is to guide students ideologically, use a humane education method to let students know what college students should and should not do, and improve their ability to distinguish right from wrong. The correct consciousness has a positive effect on practice and can guide the smooth development of practice work. Many people generally think that universities are a paradise of freedom and an undisciplined ivory tower. If they are not corrected ideologically, many students will spend their time in the university without accomplishing anything. Therefore, it is even more important to solve the students' ideological problems in time, let the students put a lot of energy on their studies, and achieve successful employment. The instructor can use the class as the carrier of the work to make students have learning goals in their minds, and then smoothly enhance the students' class style and style of study, form a good learning atmosphere, and realize students' self-worth. [1]

2.GIVE FULL PLAY TO THE ROLE OF DIALOGUE MECHANISMS

The practical experience of mental health education tells us that doing a good job in the mental health education of students should conform to the law of students' personality development, establish a teacher-student dialogue mechanism, and improve the heart-to-heart talk system. Counselors should have goals when talking with students. They should not be aimless, because aimlessness will only lead to no effect. The focus of the counselor's heart-to-heart talk can be on class committees, league branches, extremely poor students, and students with better and poorer grades. Through heart-to-heart talks with class committees and league branch cadres, we can learn about the situation of the class in a timely manner, and train their abilities through guidance on their work; through talks with extremely poor students, we can understand their family situation and their mental status, and give timely and appropriate help. Let them understand that extreme financial difficulties do not mean extreme mental or personal difficulties. They should build up confidence, study hard by themselves, lay a solid foundation, and prepare for future employment. At the same time, they should strive to obtain scholarships and grants to reduce family burdens and prove themselves. For students with better grades, they have a good self-quality structure, coupled with self-struggling in the group and the training and guidance of the school, they have become top students. Talking can make them humble and cautious, not arrogant or impetuous. For such talents, we should not only focus on training, but also let them inspire all students to strive for progress; through conversations with students who do not perform well, we should focus on training and counseling for them. Moving with affection, knowing with reason, and knowing with benefit, guide them to become excellent college students. At the same time, every student has various problems. If the situation permits, they can find a counselor teacher to communicate, so that the counselor teacher can understand each student's thoughts in time.

3. HAVE A STRONG SENSE OF RESPONSIBILITY,

PROFESSIONALISM AND MISSIION

The target of the counselor's work is young people in the new era. Students are active in thinking and have a strong ability to accept new things. In today's information society, all kinds of information from the outside world are cumbersome, and the students of the one-child month generation have outstanding personalities. These have increased the difficulty of management. Counselors have many tasks and pressures. They are busy with transactional work all day. They often sacrifice rest time to deal with work. In addition, the salary is generally not high, and the things they do are trivial to manage. Sometimes it is inevitable that they will not get the approval of the staff of other departments of the school. Therefore, the counselor will become bored, withdraw, and lose confidence after working for a long time. It is the arduousness, complexity and long-term nature of this kind of work that determines that counselors must strengthen their dedication and sense of responsibility. [2]This requires counselors to strengthen their sense of mission and to train qualified builders and successors for the country in a down-to-earth manner. Thought determines knowledge, knowledge determines attitude, and attitude determines action. Thoughts and understanding must first of all ensure that the work is based on the attitude of being responsible for the students and the parents and the society, and devoted to the routine management services to do student work. I really love the work of counsellors, who are hardworking, dedicated and sacrificed. This is a prerequisite for doing this job well.

4.FOLLOW THE COMBINATION OF MANAGEMENT AND EDUCATION, THE COMBINATION OF OBJECTIVES AND OBJECTIVE PRINCIPLES, AND CULTIVATE A GOOD CLASS STYLE AND STYLE OF STUDY

A clear work system and work objectives are the basic bond for maintaining the relationship between teachers and students. Put forward motivational goals based on the actual situation of students. Neither too high nor too low. Only then can it become a boost for students to advance. When the class meeting was held for the freshmen, we set the direction of striving for the "advanced class collective", and then worked hard around this goal.

Effective education is inseparable from efficient management to achieve the unity of education management and teaching. Strict management, meticulous education, outstanding achievements. In the management, the counselor should take the students as the main body, and the students should be patient and meticulous in their work. They should be aware of emotions and reason, and they should also pay attention to changing to thinking so that the students can truly realize that the teacher is for their good. Only by being strict, reasonable and generous can it be effective.

5.DETERMINE NEW IDEAS, OPEN NEW THINKING, EXPLORE NEW ART, AND CREATE A NEW SITUATION FOR COUNSELOR WORK

Idea is the guide of action and the driving force of work. To determine the concept of "Teach others to teach yourself". A great man once said: "The kind of person a teacher wants to make in learning is such a person." We know that current college students are not only active, susceptible, imitative, and plastic, but also have a strong "teacher-oriented". This requires today's college counselors to do: according to their own roles to standardize, require and shape themselves in their daily work and strive to be dignified, language civilized, modest and prudent, seek truth from facts, and be consistent. Use good quality to nurture, infect and influence students, use personality to shape charm and one's own words and deeds, to call to infect students, and ultimately achieve a subtle effect. At the same time, we must be convinced that there are no students with poor education. The particularity of the work of counselors is also reflected in the fact that the object of our work is real "people" and young people in the critical period when the three views have not been formally established and formed. Knowing the nature of our work targets will help us better carry out the work of counselors. In addition, one of the main tasks of counselors is to study each student and adopt different methods to do a good job in different ways. Educational assistance work for people. Not only pay attention to the "high-ranking students", but doubly "prefer" the middle-class students and the underachievers. After all, this part of students is an eternal topic of student work. Almost every class will have underachievers who are not motivated in all aspects. [3]The counselor should not abandon or give up, let alone dislike it, and have more enthusiastic contact with these students. Communicate patiently, don't classify students, and don't hesitate to "love".

6.GIVE FULL PLAY TO THE INITIATIVE OF STUDENTS AND CHANGE PASSIVE MANAGEMENT TO SELF-MANAGEMENT

To do a good job in student management, we must pay attention to mobilizing the initiative of students to actively participate in management, allowing students to actively participate in student management, and changing the subordinate and passive status of students in student management. It is not a simple task. Students are regarded as the object of education management to eliminate students' resistance. In the past, colleges and universities implemented an absolute student management method centered on counselors under the direct leadership of the student office, which put students in a passive and subordinate position. In this mode, the management of students often suffers from inadequate management and management lag, and even forms relatively negative antagonisms in student management. In this regard, student management is based on a relatively concentrated student management method under the guidance of the Student Affairs Office, regulated by counselors and class teachers, and centered on student autonomy. In this way, the students themselves are both the managers and the supervised. In this role change, the students' enthusiasm for self-management is greatly improved. Especially the self-control ability of students is enhanced. I exercised myself while learning knowledge, and I "learned knowledge" and "learned to be a man". The sense of responsibility and subject consciousness of students has

been significantly improved. [4]

7.WITH STUDENTS AS THE MAIN BODY, PROMOTE THE REFORM OF COLLEGE STUDENT MANAGEMENT

The concrete implementation of the "people-oriented" concept in the student management work of colleges and universities means "students as the main body", which is to focus on the problems faced in the management of college students under the new situation, and change the traditional student management from the needs of the main body of students In the work, the school and students are in an opposing pattern of management and management, adapting to the development requirements of universities, changing management students to serving students, and solving and handling various problems encountered in student management through the transformation of main roles. [5]

Change management concepts, establish a "student-oriented" education and management ideas, and innovate college student management. The most important thing is to change the concept of academic management, establish a "student-oriented" education and management thinking, and turn management into service.

8.CONCLUSION

Teachers are the instructors and guides on the long path of students. Only to truly communicate with students and let students experience the sense of director, pay attention to effective ways to communicate with students. Understand each other in communication and generate emotions based on understanding. Resonate and reach consensus on the basis of rapport. The teaching process is not just a simple method and process of mechanical knowledge transfer, but more of the emotional exchange and communication between teachers and students. The good emotional relationship between teachers and students directly affects the effectiveness of teaching content, and the basis of this emotional communication is mutual trust and mutual respect. Therefore, in colleges and universities that implement education and teaching, good education must be built on the basis of full respect for human nature. Only in this way can students and teachers respect and trust each other. In addition, a consensus has been reached in class work positioning, direction, goals and systems, and regular management. Such a team of college counselors can get along with all students in harmony, class management can be handy, and class work can be effective.

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Study on the Development Prospect of Embedded Application Technology

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Abstract: Embedded Application Technology is the foundation and support of the artificial intelligence society. As an important field of computer applications, it has penetrated into all aspects of society, especially artificial intelligence, the Internet of Things, medical, automotive, security, and consumer industries. This article discusses the development status of Embedded Application Technology, and analyzes and studies the development trend of embedded system industry in China.
Keywords: Embedded Application Technology; Embedded Application Systems

1. INTRODUCTION

The computers and artificial intelligence have penetrated into every corner of daily life. Embedded Application systems, as an important field of computer applications, have penetrated into all aspects of society, involving telecommunications, medical, automotive, security and consumer industries. Any ordinary person may have a wide range of electronics products using Embedded Application Technology, from small digital products such as mobile phones, tablets and smart bracelets, to home appliances and automotive electronic devices. In the field of industry and services, Machine tools and robots using Embedded Application Technology are also changing traditional industries and production methods.

2. DEFINITION AND CHARACTERISTICS OF EMBEDDED APPLICATION TECHNOLOGY

The Embedded Application systems are application-centric, computer technology-based, and software and hardware can be tailored. They are suitable for application-specific computer systems that have strict requirements on function, reliability, cost, volume, and power consumption. It generally consists of four parts: embedded microprocessor, peripheral hardware equipment, embedded operating system, and user's application program. [1] It is used to control, monitor or manage other devices. It is an application form of a computer, usually referring to a microprocessor system buried in the host device. This type of computer is generally not noticed by the user of the device. It is also known as a buried computer.

The Embedded Application systems can be called the foundation and support of the artificial intelligence era. Compared with traditional general-purpose computers and digital products, products using Embedded Application Technology have their own characteristics as below.Because Embedded Application systems use microprocessors, To implement a relatively single function and use an independent operating system, a large number of peripheral devices are often not required. Therefore, in terms of volume, power consumption has its own advantages. In contrast, a PDA using Windows CE can be used for a few days on the power of the machine alone, and any notebook can only support about 3 hours. Embedded system is the product of combining computer technology, semiconductor technology and electronic technology with the specific applications of various industries. It is a comprehensive technical discipline. Due to the relative lack of space and various resources, the hardware and software of the embedded system must be designed efficiently, tailored and removed from redundancy, and strive to achieve higher performance on the same silicon area, so that it can be used in specific applications. The choice of processor is more competitive. The embedded system is a product of a combination of software and hardware. In order to improve the execution speed and system reliability, the software in the embedded system is generally solidified in the memory chip or the single-chip microcomputer itself, instead of being stored in a carrier such as a magnetic disk. The implementation of system-on-chip and system-on-board makes such products represented by pda and the like have a more familiar operation interface and operation mode, which is more complete and practical than traditional business communication and other functions.

In order to meet the needs of embedded distributed processing structures and application Internet access, Embedded Application systems facing the 21st century require one or more standard network communication interfaces. For external networking requirements, the embedded device must be equipped with a communication interface and the corresponding TCP / IP protocol cluster software support is required; due to the interconnection of household appliances and experimental field instruments Coordination work and other requirements, the new generation of embedded devices also need to have IEEE1394, USB, CAN, Bluetooth or IrDA communication interfaces, but also need to provide the corresponding communication networking protocol software and physical layer driver software. [2]In order to support the specific programming mode of the application software, such as Web or wireless Web programming mode, a corresponding browser, such as HTML, WML, etc. is also required.

Because Embedded Application systems are often organically combined with specific applications, and their upgrading is also synchronized with specific products, once embedded system products enter the market, they have a longer life.

3. PROSPECT OF EMBEDDED APPLICATION SYSTEMS

In recent years, with the development of computer technology and artificial intelligence technology,

Embedded Application Technology has been widely used and has played an increasingly important role in communication, networking, industrial control, medical, electronics and other fields. Embedded Application systems have become the hottest and most promising application areas. With the development of informationization, intelligence, and networking, embedded system technology will also gain broad development space. [3]

Informatization, intelligence, and networking are developing rapidly in modern society, and the development space for Embedded Application systems is also growing. Since the 1998s, Embedded Application Technology has been in full swing, and now it has become an irreversible common development direction for communications, industrial and consumer products. It is mainly applied in the following five aspects.

3.1 APPLICATION OF EMBEDDED SYSTEM IN SMART HOME

Smart home is the use of computer technology, network communication technology, integrated wiring technology and sensor technology, etc., in accordance with ergonomic principles, organically integrate various types of electronic equipment in home life, through integrated intelligent control and management through the network An embedded system. [4] With the widespread use of Embedded Application systems in the Internet of Things, smart home control systems intelligently control household appliances, lighting and lighting in the house, and implement home security precautions, and combine with other systems to provide residents with a warm, comfortable, safe, energy-saving, The advanced and noble home environment allows residents to fully enjoy the convenience and splendor of modern technology.

3.2 THE INDUSTRIAL APPLICATIONS OF EMBEDDED APPLICATION SYSTEMS

The development of the Internet cannot be suppressed. Networking is an effective method to improve production efficiency, ensure product quality, and reduce labor costs. The development of industrial engineering control, digital machine tools, power systems, power grid security, and petrochemical systems cannot be separated from Embedded Application systems. From old low-end eight-bit microcontrollers to today's 32-bit and 64-bit processors, The core industrial control equipment is enough to make us understand that the current development of industrial equipment is based on the development of Embedded Application systems. Especially in numerical control technology, the embedded LINUX numerical control system has completed the development of the human-machine interface of the system, and the control level has been developed using the C language. [5]

3.3 APPLICATION OF EMBEDDED SYSTEM IN TRAFFIC MANAGEMENT

With the development of our country's economy, people 's living standards have greatly improved. Private cars are no longer a rarity, and more and more appear in people 's vision. Embedded Application systems are used in cars a lot, from ordinary positioning. GPS, mobile positioning GSM to vehicle flow control, information monitoring, vehicle navigation, and even transportation and many other aspects. It can be seen that Embedded Application systems have been widely used in traffic management.

3.4 APPLICATION OF EMBEDDED SYSTEM IN E COMMERCE

Now, vending machines in some large shopping malls have already entered people's field of vision. Residents have convenient and economical bus cards, smart ATM terminals everywhere, membership cards for various supermarkets and malls. These cards have accompanied the development of Embedded Application systems in people. Playing an increasingly important role in life, it is no longer a distant dream to travel around the world with one card.

3.5 APPLICATION SECURITY OF EMBEDDED SYSTEM IN

Embedded Application systems also play a very important role in security. With the development of networking, old security methods such as access control, cameras, and video have been eliminated, and replaced by networked devices with Embedded Application systems as the core.

The threshold of the embedded system field is high. Embedded developers not only need to understand the lower-level software, but also have higher requirements for software professionalism. Embedded talents on the market must have C programming experience, embedded operating systems (embedded Linux) Or WinCE) experience, kernel tailoring experience, operating system shift experience, driver development experience, etc. For example, senior embedded software development engineer related position requirements are: rich embedded multi-tasking software system analysis and design capabilities, can independently complete project system solutions, solve system failures and problems; proficient in C language application development, have good programming habits And style, the program is stable and reliable; good document writing skills and habits, able to write a standardized summary and detailed design documents; familiar with the project management process. [6]

4. THE DEVELOPMENT TREND OF EMBEDDED APPLICATION TECHNOLOGY

The market for Embedded Application systems is huge, and the applications of Embedded Application systems are almost everywhere: mobile communications, digital office, home appliance applications, transportation, interactive entertainment, and more. The unique features and advantages of embedded controllers such as small size, high reliability, strong functions, flexibility and convenience make them widely used in education, national defense, industry and agriculture, scientific research, and daily life. Technical progress, automation development, product replacement, and productivity improvement have played a very important role.

4.1 EMBEDDED APPLICATION TECHNOLOGY IS SYSTEMATIC DEVELOPMENT

Embedded development is a systems project, so manufacturers of Embedded Application systems are required not only to provide embedded software and hardware systems themselves, but also to provide

powerful hardware development tools and software packages.

At present, many manufacturers have fully considered this point, while promoting the system, the development environment is also a key promotion. For example, Samsung also provides development boards and versions and packages (BSP) while promoting Arm7 and Arm9 chips, and WindowCE also provides Embedded VC ++ as a development tool when promoting the system, as well as the Tonado development environment of Vxworks and the Limda compilation environment of DeltaOS. And so are typical examples of this trend. Of course, this is also the result of market competition. [7]

4.2 REQUIREMENTS FOR MULTITASKING AND CROSS DEVELOPMENT TECHNOLOGIES

Networking and informationization requirements With the maturity of Internet technology and the increase in bandwidth, the functions of single-function devices such as telephones, mobile phones, refrigerators, and microwave ovens are no longer single and the structure is more complicated.

This requires chip design manufacturers to integrate more functions on the chip. In order to meet the upgrade of application functions, designers use more powerful embedded processors such as 32-bit, 64-bit RISC chips or signal processor DSP to enhance processing. Capabilities, while increasing functional interfaces, such as USB, extended bus types, such as CAN BUS, strengthening the processing of multimedia, graphics, etc., and gradually implementing the concept of a system on chip (SOC). On the software side, real-time multi-tasking programming technology and cross-development tool technology are used to control functional complexity, simplify application design, guarantee software quality, and shorten development cycles.

4.3 NETWORK INTERCONNECTION HAS BECOME AN INEVITABLE TREND

In order to meet the requirements of network development, future embedded devices will inevitably require various network communication interfaces on the hardware. Traditional single-chip microcomputers are insufficient for networks, and the new generation of embedded processors have begun to embed network interfaces. In addition to TCP /IP protocols, there are one or more of IEEE1394, USB, CAN, Bluetooth or IrDA communication interfaces. At the same time, corresponding communication network protocol software and physical layer driver software need to be provided. In terms of software, the system's core network module can even embed a web browser on the device to truly achieve Internet access with various devices anytime, anywhere.

4.4 STREAMLINE SYSTEM KERNELS AND ALGORITHMS TO REDUCE POWER CONSUMPTION

The future embedded device is a combination of software and hardware. In order to reduce power consumption and cost, designers need to streamline the system kernel as much as possible, only retaining software and hardware closely related to system functions, and using the lowest resources to achieve the most appropriate functions.

Designers are required to choose the best programming model and continuously improve algorithms to optimize compiler performance. Therefore, it is necessary for software personnel not only to have rich hardware knowledge, but also to develop advanced embedded software technologies such as Java, Web, and WAP. [8]

The most important factor for an embedded device to be in close contact with the user is that it can provide a very user-friendly interface. The graphical interface and flexible control methods make people feel like the embedded device is a familiar old friend. This requirement makes embedded software designers painstakingly work on graphical interface and multimedia technology. Handwritten text input, voice dial-up Internet access, email sending and receiving, and color graphics and images will make users feel free. At present, some advanced PDAs have realized the writing of Chinese characters and the announcement of short messages on the display screen, but the average embedded device still has a long way to go.

5. CONCLUSIONS

The rapid development of information technology and artificial intelligence has largely promoted the development of embedded software and provided it with a wider market space. The application of Embedded Application systems is integrated into the entire device by combining software and hardware, thereby promoting the improvement of its intelligent level. The application of this system can greatly promote the safety and efficiency inside the equipment. However, in the current application development, due to the short development time, the embedded software is in the stage of continuous development and improvement, which has affected its role to a certain extent, and has caused the development of China's defense industry and industrial control industries. Certain obstacles. Therefore, by strengthening the research on the application and development of embedded software, we can better play its role in promoting the development of related industries, promote the rapid and stable growth of our national economy, and provide greater convenience for people's daily lives.

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Exploratory Teaching Aided by Multimedia Technology

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Abstract: Multimedia technology realizes the organic combination of various forms of information, and through effective computer integration and program control, a series of interactive information processing technologies are realized. It relies on a variety of audio-visual media (computers, televisions, video recorders, projectors, slides, etc.), uses text, animation, physical objects, images, sound and other media to deliver useful information to students, and cooperates with traditional teaching media (blackboard, Wall charts, models, experiments, etc.), modern teaching methods that organically combine multiple media.
Keywords: Multimedia; Information Processing; Teaching Methods

1.INTRODUCTION

With the effective and extensive application of multimedia technology and classroom teaching practice, new vitality has been injected into the lifeless classroom teaching, making the closed classroom structure of "passive acceptance" more active and open. Multimedia is used as a tool to guide students to discover and ask questions, acquire new knowledge, propose new ideas, and new inventions. In the process of dealing with various problems, they broaden their thinking horizons and exercise their ability to apply new knowledge. Cultivating students' divergence, innovative thinking and independent creativity has played an important role.

2.The ROLE OF MULTIMEDIA IN INQUIRY TEACHING MODE

(1) Break time and space constraints and realize all-round sharing of resources

Students can determine their own learning goals based on their own knowledge system, and plan the knowledge and progress they need to learn based on this, and choose to learn independently The methods and skills of self-evaluation and the effect of learning.Students take the problems discovered in the knowledge practice in their spare time and put them in the teacher's classroom teaching, actively thinking to explore the means of solving problems, so as to obtain new knowledge, and the teacher acts as a guide in the whole process, guiding students to use it widely Multimedia technology for learning, cultivate students' unique insights, and make their thinking more open and innovative.

(2)Solve "difficult and miscellaneous diseases" and promote communication and cooperation between teachers and students, students and students

Class time is very short, and there are many contents to be taught and explained.Therefore, it is impossible to conduct in-depth study and discussion on some difficult and doubtful points in the teaching content, and there is no sufficient communication between students, teachers and students, and multimedia teaching It is precisely to eliminate the defects of classroom teaching.Students will use the learning resources and collaborative communication tools provided by the network environment to conduct active and exploratory learning; and when students use computers for autonomous learning, they can also communicate with students and teachers through the Internet Collaborate and be able to communicate and learn from each other through the network[1].

(3) Cultivate the ability of collaborative learning

Collaborative learning is a learning method that puts teachers and students under the same problem, and completes the established learning goals and teaching tasks through communication and cooperation between the two. This method can take a variety of implementation forms, such as interest groups, various seminars, group debates, network groups, etc. In the process of collaboration, students can share various information and knowledge acquired in inquiry learning with others. Enhance students' team awareness, which not only shortens the learning time, improves the efficiency of knowledge acquisition, but also enables them to play their respective potentials, learn from each other's strengths, and better promote their own quality and improve their own knowledge system.

(4) Facilitate self-study and evaluation after study

Using the advantages of multimedia technology, in teaching practice, teachers inspire and guide students from the side, students with a strong interest in learning and an eager mood to solve problems, use inquiry methods and a variety of media technologies to learn independently to eliminate doubts. The purpose of better understanding and application of new knowledge. The network has abundant resources urgently needed for research problems, which broaden students' horizons and learning space. Teachers provide asynchronous guidance. Students use computers to conduct discussions on "human to human", "human to machine" and even "machine to machine". Get richer, so as to obtain a more effective teaching system.

In the inquiry teaching relying on multimedia technology, in order to achieve the expected teaching effect, it is necessary to coordinate the problems of how teachers teach and how students learn. However, how to coordinate the relationship between the two needs to deal with teachers and students under the traditional model. The role positioning is readjusted.

3.THE REPOSITIONING OF TEACHER ROLES

(1) Renewal of educational philosophy

Whether teaching activities can achieve the desired results is directly related to the renewal of teachers' educational

concepts.Teaching reform is deepening step by step, and the use of multimedia technology in classroom practice is becoming more and more extensive.These new developments urgently require the teaching concepts of frontline teachers to keep pace with the times.Only teaching concepts can keep up with the pace of the times, then his teaching The theory will gradually change, and the teaching behavior derived from it will also undergo essential changes.Guided by advanced education and teaching concepts, can we ensure the sound development of education and teaching reforms.If the teacher's teaching philosophy and teaching theory stagnate, then all the technical tools of the new era are useless to her, and the knowledge he imparts will only stay at the level of the old era, and the development of students will be affected.Great constraints.The former teacher-led teaching model can no longer adapt to the development of this era.Teachers should play the role of "accompanist", rationally use various multimedia technologies to improve their own teaching thinking, and actively guide students to learn and explore knowledge independently[2].To ensure that every student is a master of knowledge.

(2) In-depth study of teaching plans and teaching content, teaching students in accordance with their aptitude

All inquiry activities are carried out based on the teaching materials, the characteristics of the students' own abilities and the school's teaching facilities.Inquiry activities should not be quick success, but should be carried out step by step in a planned way.In the initial stage of students' independent exploration, teachers' effective guidance is indispensable and cannot be completely let go.In the teaching practice, the exploration activities should grasp the main key points, remember not to be too many and complicated, and deviate from the basic teaching goals and requirements.More exploration points allow capable students to study independently, and provide students with a platform suitable for their own development.

(3) Broaden the space and time for students to study and explore

As the subject of learning, students have the right to participate in the entire process of inquiry.This requires teachers to give students enough space and time.Only in this way can students better complete the inquiry activities.Of course, in this process, teachers have to treat students from time to time.In order to prevent students' inquiry activities from entering a vicious circle, students' own abilities can be well exercised.

(4) Play a leading role

Due to the imperfect knowledge system and limited cognitive ability of students, their ability to discern things is not strong, their understanding of problems is easy to be one-sided, and sometimes they may enter into great misunderstandings.Teachers must actively play a leading role in helping students Views and insights are revised and supplemented in time, communicate fully with students, explore the source of truth and knowledge together, and help students better digest and absorb the knowledge they have learned.

In the process of inquiry-based teaching practice, teachers should strive to be the guide of students' learning, the creator of learning environment, the collaborator and co-explorer of teacher-student collaboration and exchange, play the leading role of teachers, and plan to explore students Activities are guided, especially with the changes in the age structure of students and the perfection of the knowledge system, there must be a gradual and progressive stage from easy to difficult.This may be due to the differences in the living environment of each student and the differences in their own conditions[3].The ideas and insights are very immature, but as a teacher, you must be patient and guide, actively encourage and guide new ideas, even if it is a small progress, you must give students a certain degree of affirmation, in order to create a good learning atmosphere and teachers and students The communication platform plays its role.

(5) Establish an evaluation system for inquiry activities

The key to the effectiveness of inquiry activities is to establish a corresponding evaluation system.This evaluation system cannot simply be based on test results.It must be more motivating and can fully reflect the efforts and hardships of students in inquiry activities.Can fully measure students' ability to apply new knowledge and innovation ability, and fully reflect the level of inquiry of students in inquiry activities and their attitudes and emotional performance in the process[4].

(6) Improve teachers' own teaching design and ability to operate multiple teaching media

Teachers can choose one or more media to assist teaching, but how can several teaching media be effectively combined, instead of blindly misusing it to cause a disconnect with the teaching goal? This requires teachers to recognize the position of multimedia in teaching and the relationship between it and teaching, to have sufficient control of multiple media, and their own teaching design must meet the realization of teaching goals, and optimize teaching The goal is to use a variety of media reasonably to perfectly present a variety of things and knowledge related to classroom teaching to students, and play a good role in teaching promotion.

4.THE REPOSITIONING OF STUDENT ROLES

(1) Student participation

In the practice of inquiry-based teaching, students must have the consciousness of learning "masters", and there must be no inertia.Professors who think that they have teachers will completely abandon their own pursuit and exploration of knowledge.Teachers create a good learning environment and learning space for students.Students should actively respond to the call of teachers, persevere in the pursuit of knowledge, effectively use the resources around them, dare to question, actively think, analyze, explore, and deal with problems.Students without problems will never be able to fully comprehend and apply knowledge.Only if you can actively participate in the inquiry-based learning, your own quality and knowledge system will be further improved and perfected.

(2)The subject consciousness of students

The purpose of inquiry-based teaching is to fully stimulate students' sense of ownership in learning, mobilize their subjective initiative, and enable students to learn to communicate and cooperate with others, learn to learn by

themselves, and learn to use various resources in inquiry-based activities.Only through the knowledge acquired through my own efforts, I will be more fresh in my memory and experience the hardship and sense of accomplishment in the process of acquiring knowledge.Teachers should actively guide and evaluate students' own opinions and opinions, and give students enough sense of accomplishment, so that they can fully experience the joy of learning and gain motivation for learning.Therefore, in teaching practice, praise and encouragement between teachers and students can not only enhance students' awareness of active participation in inquiry activities, but also mobilize students' learning initiative and desire for knowledge to the greatest extent, taking learning as a joy Things to do.

5.CONCLUSIONS

In the process of inquiry-based teaching practice, teachers must often face many difficult problems.After all, people have different thinking patterns and perspectives on problems.Some teaching practices will step into "inquiry mode and abstraction", which is very important for inquiry.Strict control of the process and progress; exploration can only succeed, no failure;

misunderstandings such as the uninterrupted nature of inquiry activities hinder the effective development of inquiry teaching activities.In order to better apply the inquiry-based teaching and teaching practice, the training of teachers must be increased.This training includes not only the application technology of the media, but also the psychological guidance of students' learning activities.In teaching, the role of teachers is not to be weakened but to become more important.

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Design of A New Type of Anti-collision Alarm

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Abstract: With the continuous development of science and technology, the position of the electronics industry is getting more and more important. Electronic products can be seen in almost all areas of society, and electronic products are also developing towards intelligence. This design uses the principle of ultrasonic distance measurement to make a reversing auxiliary system. It uses STC89C51 single-chip microcomputer as the control core. The distance to the rear of the car is measured through the HC-SR04 ultrasonic module, and the feedback is returned to the single-chip microcomputer for processing. The current distance is displayed in real time using four digital tubes. The distance of the obstacle. When the feedback distance is greater than 50 cm, the system lights up green to indicate safe reversing. when the feedback distance is 30-50 cm, the system lights red to indicate that the vehicle is approaching danger and need to be careful. when the feedback distance is less than 30 cm, the system is red the light is on and the buzzer sounds to indicate that it may be dangerous to continue reversing. The whole system is simple in design and has strong applicability.
Keywords: Reversing system; Ultrasonic distance measurement; STC89C51 microcontroller

1. INTRODUCTION

With the development of modern society's industrialization process, automobiles as a means of transportation are being used by more and more people, but the problems that follow are also obvious, that is, with the increase in vehicles, the frequent occurrence of traffic accidents. The resulting casualties and property losses are staggering.

Ultrasonic reversing rangefinder (commonly known as electronic eye) is a safety auxiliary device for car reversing and collision avoidance, which can dynamically display the surrounding obstacles in sound or more intuitive digital form. Earlier products use a buzzer to alarm. The faster the buzzer, the closer the vehicle is to the obstacle. Subsequent products can show the distance of obstacles behind the car from the car body. Most of its products have a detection range of 0.4~1.5m, and some products can reach 0.35~2.5m, and have distance display, audible alarm, area warning and orientation indication, and some products also have a power-on self-check function. There are products with voice alarm function on the market. The main problems of these products are large measurement blind spots and delayed alarms. The inertia factors during braking are not considered, which makes the driver's braking lag, weak anti-interference ability, and more false alarms. The reason why the automobile anti-collision radar can realize the anti-collision alarm function is mainly the invisible ruler, which measures the distance of the nearest obstacle, and tells the car owner. In fact, the principle of ultrasonic ranging is simple.It emits ultrasonic waves and receives reflected echoes, and obtains the time difference t between the two through a single-chip counter. The distance is calculated using the formula $S=Ct/2$, where S is the distance between the car and the obstacle, and C is the sound wave The speed of propagation in the medium.

Ultrasound refers to mechanical waves with a frequency higher than 20KHz. In order to use ultrasound as a detection method, it is necessary to generate and receive ultrasound waves. The device that accomplishes this function is an ultrasonic sensor, which is customarily called an ultrasonic transducer or ultrasonic probe. An ultrasonic sensor has a transmitter and a receiver, but an ultrasonic sensor can also have the dual role of sending and receiving sound waves. Ultrasonic sensors use the principle of piezoelectric effect to convert electrical energy and ultrasonic waves, that is, when transmitting ultrasonic waves, it converts electrical energy and transmits ultrasonic waves. when receiving echoes, it converts ultrasonic vibrations into electrical signals.

The principle of ultrasonic ranging generally uses the time-of-flight method TOF (time of flight). First, measure the time from when the ultrasonic wave is launched to when it encounters an obstacle and return, and then multiply it by the speed of the ultrasonic wave to get twice the distance between the sound source and the obstacle. There are many ways to measure distance. For short distances, you can use a ruler. For long distances, there are laser distance measurement. Ultrasonic distance measurement is suitable for high-precision middle and long distance measurement. Because the propagation speed of ultrasonic waves in standard air is 331.45 m/s, the single-chip microcomputer is responsible for timing, and the single-chip uses 12.0M crystal oscillator, so the measurement accuracy of this system can theoretically reach the millimeter level.

Due to the strong directivity of ultrasonic waves, slow energy consumption and long propagation distance in the medium, ultrasonic waves can be used for distance measurement. Using ultrasonic to detect the distance, the design is more convenient, the calculation processing is also simpler, and the measurement accuracy can also meet the requirements.[1]

Ultrasonic generators can be divided into two categories. One is to generate ultrasonic waves electrically, and the other is to generate ultrasonic waves mechanically. This design belongs to short-distance measurement, and the commonly used piezoelectric ultrasonic transducer can be used to realize the trigger unit.

Using the work of ultrasonic ranging, you can measure the distance between the transmitted wave and the reflected wave according to the time interval. There are three main ranging methods.

(1)Phase detection method. Although the phase detection

method has high accuracy, the detection range is limited.

(2)Acoustic wave amplitude detection method, the acoustic wave amplitude detection method is easily affected by reflected waves.

(3)Time-of-flight detection method. The working mode of the time-of-flight detection method is simple and intuitive, and it is very easy to implement in hardware control and software design. The principle is to detect the time when the ultrasonic wave is emitted from the transmitting sensor and propagated through the gas medium to the receiving sensor. This time is the transit time.

The ultrasonic distance measurement originally designed uses the transit time detection method. Ultrasonic sensors used in mobile vehicles use the directional propagation of ultrasonic waves in the air and solid reflection characteristics (longitudinal waves), by receiving the ultrasonic reflection signals emitted by themselves, and calculating the propagation according to the time difference and propagation speed of ultrasonic emission and echo reception Distance to get the distance from the obstacle to the vehicle.

2. SYSTEM DESIGN

STC89C51 is selected as the main control chip of this design, and the measured obstacle distance is displayed in real time through a four-digit digital tube. When the distance is greater than 50CM, the system lights up green to indicate that it is safe to reverse. when the distance is 30~50CM, the system lights up red to indicate that the vehicle is approaching danger and need to be careful. when the distance is less than 30CM, the system red lights and the buzzer sounds to indicate that it may be possible to continue reversing. in danger.[2]

Ultrasound is used for distance measurement. Ultrasound is a special type of sound wave. It emits ultrasonic waves in the air. When the ultrasonic waves hit an object, they will bounce back and be received by the receiver. Since the sound transmission speed in the air is the same 340m/s, it passes The distance can be calculated by calculating the time interval between transmitting the ultrasonic wave and receiving the reflected ultrasonic wave. The method is simple to implement, has low cost, average precision, and strong anti-interference.

3.SYSTEM HARDWARE DESIGN

3.1 OVERVIEW OF STC89C51

STC89C51 is a low-power, high-performance CMOS 8-bit microcontroller produced by STC, with 8K in-system programmable Flash memory. STC89C51 uses the classic MCS-51 core, but has made many improvements to make the chip have functions that the traditional 51 single-chip microcomputer does not have. On a single chip, with a smart 8-bit CPU and in-system programmable Flash, STC89C51 provides highly flexible and very effective solutions for many embedded control application systems. It has the following standard functions, 8k bytes Flash, 512 bytes RAM, 32-bit I/O port line, watchdog timer, built-in 4KB EEPROM, MAX810 reset circuit, 3 16-bit timers/counters, 4 external interrupts, A 7-vector 4-level interrupt structure (compatible with the traditional 51 5-vector 2-level interrupt structure), full-duplex serial port. In addition, STC89X52 can be reduced to 0Hz static logic

operation, and supports 2 software selectable power saving modes. In idle mode, the CPU stops working, allowing RAM, timer/counter, serial port, and interrupts to continue working. In the power-down protection mode, the RAM content is saved, the oscillator is frozen, and all the work of the single-chip microcomputer stops until the next interrupt or hardware reset. The highest operating frequency is 35MHz, 6T/12T is optional.

3.2 DIGITAL TUBE DISPLAY CIRCUIT DESIGN

To display the nixie tube normally, it is necessary to use a drive circuit to drive each segment of the nixie tube to display the number we want. Therefore, according to the different driving methods of the nixie tube, it can be divided into static and dynamic types.

By controlling the COM terminal of each nixie tube in turn by time-sharing, each nixie tube can be controlled and displayed in turn, which is a dynamic drive. In the alternate display process, the lighting time of each digital tube is 1~2ms. Due to the persistence of human vision and the afterglow effect of light-emitting diodes, although the digital tubes are not actually lit at the same time, as long as the scanning speed is sufficient Quick, it gives the impression that a set of stable display data will not flicker. The effect of dynamic display is the same as that of static display, which can save a lot of I/O ports and lower power consumption. What was adopted in this design is the way of dynamic drive, the drive circuit adopts PNP type triode S8550.

It can be seen from the driving circuit diagram that the base of the transistor is connected with a current-limiting resistor to the I/O port of the microcontroller, the transmitter is connected to high level, and the collector is connected to the bit selection end of the digital tube. When the I/O port of the microcontroller outputs high level, the transistor is When it ends, the bit selection port gets low level, and the digital tube does not display. When the I/O port of the single-chip microcomputer outputs low level, the transistor is turned on, the bit selection port gets high level, and the digital tube displays.

3.3 INTRODUCTION OF HC-SR04 ULTRASONIC RANGING PRINCIPLE

Set both TRIG and ECHO ports low during initialization, first send a high-level pulse of at least 10 us to TRIG (the module automatically sends 8 40K square waves), then wait, capture the rising edge of the ECHO terminal output, and capture At the same time as the rising edge, turn on the timer to start timing, and again wait to capture the falling edge of ECHO. When the falling edge is captured, read the timer time. This is the time the ultrasonic wave runs in the air. According to the test distance = (high level Time*sound speed (340M/S))/2 can calculate the distance of the ultrasonic wave to the obstacle. In the actual measurement, the period should be more than 60ms to prevent the influence of the transmitted signal on the echo signal.[2]

3.4 THE DESIGN OF BUZZER CIRCUIT

The buzzer uses a 5V electromagnetic active buzzer. [3]Because the working current of the buzzer is generally relatively large, so that the I/O port of the microcontroller cannot be directly driven, so it must be driven by a triode

switch circuit. The 8550 triode selected here is a PNP type triode. When a 1K resistor is connected in series to the I/O port of the microcontroller. When the I/O port outputs a low level, the triode is turned on and the buzzer buzzes. when the I/O port outputs a high level, the triode is cut off and the buzzer stops buzzing.

4.SYSTEM SOFTWARE DESIGN

4.1MAIN FUNCTION DESIGN

The main function is the entry function of the program, and a complete program must include this function. At the beginning of the function, the microcontroller and some peripheral devices that need to be initialized before they can be used normally are initialized and some variables are re-assigned. After initialization, it enters the infinite loop. If it does not enter the infinite loop, the program will exit after running once. If an infinite loop program is added, it will continue to loop to achieve the purpose of real-time detection and execution. In the design of the main program, it should be noted that too much code should not be placed in the main function. The specific code is generally encapsulated by a function and then called in the main function, which can also be easily read and modified.

4.2 DESIGN OF ULTRASONIC RANGING FUNCTION

For the HC-SR04 ultrasonic module, you need to configure the working mode of the timer first, because the timer needs to be used to calculate the time interval when the ultrasonic emission will return during distance measurement. [4] After the configuration is completed, the output port Trig pin is pulled to high power The level is more than 10us, and the no-operation instruction is used continuously here, delaying a machine cycle function 20 times, that is, using a delay of 20us, and then lowering the output port Trig pin, and then waiting for the input pin Echo to turn on when the high level The timer starts timing, and then waits for the input pin Echo to turn off when the low level, the time interval is calculated, and finally the test distance is calculated by a fixed sound velocity of 340M/S.

4.3 THE DESIGN OF DIGITAL TUBE DISPLAY FUNCTION

The digital tube of this design adopts a common anode digital tube, and the driving circuit adopts an S8550 triode. In the digital tube control program, the dynamic display mode is adopted, which means that after displaying the first digit, the display of the first digit is turned off after a short delay, and then the display of the second digit is immediately turned off for a period of time, and the display of the third digit is turned off. To display. In this way, the visual stay effect of using the human eye appears to be all displayed together. The display delay cannot be too long or too short. If the time is too long to exceed the "afterglow effect" of the human eye, it will appear to be displayed intermittently and decisively. If it is not displayed one by one in this way, but all displayed together, it will appear that all the digital tubes display the same content. The reason is that the segments of these digital tubes are connected together, and controlling one bit is equivalent to Control everything.

5. CONCLUSION

Connect the ultrasonic distance measuring module and the LED digital display module to the single-chip microcomputer to form a car reversing anti-collision alarm, which can be used to measure two obstacles on the ground and on the wall. The test results show that the actual obstacles are the same distance but the obstacles Different, the measured results are different. The error is determined by the reflectivity of the obstacle. The better the reflectivity, the smaller the error. The actual obstacle distance is different but the obstacle is the same, the measured result is also different, the greater the measured distance, the greater the error obtained.

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Application of Power Electronic Technology in Switching Power Supply

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Abstract: Power electronic technology is the technical support of switching power supply. Only by exploring and improving the application and development of power electronic technology in switching power supply can we really promote technological innovation and development. This article introduces power technology and switching power supply technology in detail, analyzes the problems of switching power supply and proposes effective strategies, integrates power electronic technology into it, improves the technical level of switching power supply, and combines the specific application of power electronic technology in switching power supply Explore.
Keywords: Switching power supply; Power electronics technology; Power supply technology

1. INTRODUCTION

Any electronic device is inseparable from the power supply.It can be said that the quality and performance of the power supply determine the stability and operating status of the electronic product. Power electronic technology is the technical support of switching power supply.Only by revolving around the development of power electronic technology, can switching power supply get more comprehensive innovations and breakthroughs in its application.

2. DEVELOPMENT OF MODERN POWER ELECTRONICS TECHNOLOGY

Power electronics technology mainly includes converter circuits, electronic devices, and control circuits. Switching power supplies mainly rely on power electronic technology to control the turn-on and turn-off of semiconductor devices to ensure stable voltage output.Compared with the traditional linear regulated power supply, the switching power supply occupies a smaller area and has high application efficiency, so it is widely used in various electronic products.The so-called power electronics technology is a method based on power electronic devices to control and transform electrical energy.This technology involves the fields of electronics, power and control.In the context of the continuous development of science and technology, modern power electronics technology integrates modern control theory, material science, and microelectronics technology, and has gradually developed into an independent subject with a strong comprehensive and systematic nature.The development process of power electronics technology can be divided into three stages, namely the rectifier era, the inverter era, and the inverter era.The details are as follows. [1]

First, the era of rectifiers.In the context of high power, industrial electricity is mainly derived from AC generators with a power frequency of 50 Hz, but part of the electricity is in the form of direct current, accounting for about 1/5.The most typical areas are electrolysis, traction and DC drive, etc.At this stage, the application of high-power silicon rectifiers and thyristors has gradually become popular.Second, the era of inverters.This stage was in the 1970s.Under the background of the popularization of microcomputers, the intelligent level of power electronic devices has improved.With the continuous improvement of power electronic circuits, different types of power electronic devices composed of thyristors have emerged in the industrial field.At this stage, power electronic devices are mainly thyristors for high-power inverters, gate-off thyristors, and giant power transistors.In the era of inverters, the problems of rectification and inversion have been solved.In the practice of power electronic technology, the main problem is that the power frequency is difficult to increase, and most of them are still at the low-medium frequency level.Third, the era of frequency converters.In the 1980s, major breakthroughs were made in large-scale and very large-scale integrated circuit technology research, which was a milestone in the development of power electronics technology.Based on the development of integrated circuit technology, with fine processing technology and high-voltage and high-current technology, fully-controlled power devices have been formed.In the context of the continuous development of new devices, the performance of AC motors has been optimized; at the same time, high frequency has become the main development direction of power electronics technology.In this context, the energy-saving performance of power equipment has been greatly improved, and it tends to be small and lightweight.In terms of technology, mechatronics and intelligence have played an important role in the development of power electronics technology.

Power electronic technology is to apply electronic technology to the power system to ensure the stable operation of the power system and improve the power supply quality of the power system.With the continuous improvement of the level of technology, many new materials have been applied to the power system to provide support for the application of power electronic technology in the power system.The application of power electronic technology in the power system realizes effective control of power.Users can use electric energy more conveniently.[2]It is indispensable for the application of power electronic technology in modern power systems.Power electronic technology includes material manufacturing technology and electronic circuit conversion technology.At present, the main development direction of power electronics technology is low-power integrated circuits.The low-power integrated circuit technology integrates drive, control and power device

technologies.The biggest advantage is to reduce power.With the application of self-shutdown devices, high frequency has become the development direction of power electronic technology.The application of power electronic control technology in the new stage also includes non-power power control and neuron control.Currently in power electronic control technology The traditional analog control can no longer meet the needs of the development of power electronic technology, and replaced by the digital control technology of the microprocessor.

3.INTRODUCTION OF SWITCHING POWER SUPPLY

3.1 CLASSIFICATION OF SWITCHING POWER SUPPLIES

According to the type of input and output, the switching power supply can be divided into two types: DC/DC and AC/DC converters.

The switching power supply can be divided into two types: self-excited and separately-excited according to different driving modes.

According to the different control methods, the switching power supply can be divided into three types: one is pulse width modulation (PWM); the other is pulse frequency modulation (PFM); the third is a combination of pulse width modulation and pulse frequency modulation.According to the circuit composition, the switching power supply can be divided into resonant type and non-resonant type.

In addition to the above four categories, switching power supplies can also be divided into single-ended forward and single-ended flyback; push-free and buck, boost or buck-boost, and so on.

3.2 THE DEVELOPMENT TREND OF SWITCHING POWER SUPPLY

The switching power supply is gradually developing in the direction of high frequency, high reliability, low consumption and low noise, and continuously improves its own anti-interference and modularity.The switching power supply in the market today is mainly made of bipolar transistors, and its frequency needs to be further increased, and the switching frequency must also be increased by using high-speed switching components.In order to effectively ensure the efficiency of switching power supplies, it is necessary to continuously reduce switching losses.After increasing the switching speed, the inductance and capacitance in the power supply circuit and the stored charge in the diode will be affected, resulting in surge or noise.Therefore, in order to effectively control the surge, it is necessary to analyze different situations, using RC or LC buffers and amorphous magnetic cores made of magnetic buffers and resonance type.Resonant switches can help reduce losses when performin g surge control.In order to pursue the high frequency of the switching power supply, it may cause the increase of noise.Therefore, it is necessary to adopt the resonant conversion circuit technology to reduce the noise while realizing the high frequency.However, there are still practical problems, so continuous research is required. [3] In the context of the continuous development of power

electronics technology, switching power supply technology is gradually becoming mature, and its development direction is mainly reflected in the following aspects.First, the technology is modular and intelligent.Modular power supply technology refers to power devices on the one hand, and power supply units on the other.With the support of new technologies, the power supply integrates different modules, so that the space occupied by the switching power supply will be smaller, the device will be more stable, and the reliability of the system will be improved.The modular development of the output voltage stabilizing circuit improves the flexibility and convenience of the power supply.Second, digitization and diversification are the development trends of switching power supply technology.Therefore, electronic technology is very comprehensive and involves many disciplines, among which power supply technology mainly includes power c onversion, digital control, high-frequency conversion and other technical content.In order to further improve technological innovation, the development of power supply technology must fully integrate the development of the industry, and constantly update its own knowledge and skills, so as to achieve diversified and digital development.

4.APPLICATION OF POWER ELECTRONIC TECHNOLOGY IN SWITCHING POWER SUPPLY

At the end of the 20th century, the application value of switching power supply in electronic and electrical equipment has gradually become prominent, and it is widely used in electronic testing equipment, control equipment, and communication equipment.This has also played a huge role in the development of switching power supply technology.It is undeniable that the switching power supply.

There are disadvantages, for example, the circuit of the switching power supply needs to be simplified, and the ability to resist radio frequency and electromagnetic interference is not strong.Today, with the continuous development of science and technology, people are beginning to pay attention to and gradually solve some of the problems and defects of switching power supplies.At present, the collection circuit of switching power supply is mainly divided into two types, namely the main circuit and the control circuit.Among them: the main circuit involves three links: rectification and filtering input, power conversion, and rectification and filtering output.The main function is to transfer grid power to the load; the control circuit is mainly operated by the protection circuit.

4.1 SOFT SWITCHING TECHNOLOGY

The PWM power supply controlled by the IGBT power device can overcome the high energy consumption problem of the traditional high-power power inverter main circuit structure, and reduce the energy consumption by 30%-40%.The soft switching technology adopts the principle of resonance to overcome the problems of traditional circuits using buffer circuits to eliminate voltage spikes and surge currents, thereby simplifying the system and reducing the possibility of failure.Traditional circuits will generate extremely large currents and

voltages at the moment the switch is turned on and off, and the instantaneous voltage cannot be used effectively, thereby increasing energy consumption.

4.2 SYNCHRONOUS RECTIFICATION TECHNOLOGY

Synchronous rectification technology is a technology that further improves efficiency on the basis of soft switching. It connects the metal insulator of the rectifying switch diode to a semiconductor tube reversely, and is suitable for low-voltage and high-current power supplies. Synchronous current passes through zero voltage switching and zero current switching. They drive the synchronously rectified pulse signal to be linked with the initial pulse signal, and its rising edge exceeds the original rising edge, and the delay is reduced to realize the metal oxide semiconductor field effect transistor and zero voltage. Switch mode.

4.3 CONTROL TECHNOLOGY

The design of the main circuit must meet the different structure of the switching converter and the characteristics of discrete nonlinearity, so the switching power supply must use multi-channel control. The dynamics of the switching power supply can be controlled by electronic movement and the increase or decrease of the time period. The intelligence of the switching power supply can be realized by genetic algorithm, BP algorithm, fuzzy control, microcomputer control, artificial neural network and other technologies. The development of MEMS technology has greatly increased the speed of microcomputer calculations. The implementation of digital modules using microcomputers or DSPs in high-power switches has further promoted the realization of power digitization and high efficiency.

4.4 POWER SEMICONDUCTOR TECHNOLOGY

The development of power electronics technology gave birth to MOSFET and IGBT semiconductor devices. In switching power supplies, the use of MOSFET and IGBT semiconductor devices can improve power efficiency and make full use of energy. The internal resistance of these two types of transistors is very small, does not require too much drive power, and has very prominent advantages in terms of energy consumption. Based on the combination of synchronous rectification technology and control technology, the high-frequency development of switching power supplies can be realized, thereby improving the technical level of switching power supplies.

4.5 UNINTERRUPTIBLE POWER SUPPLY

Uninterruptible power supply (UPS) is a high-reliability and high-performance power supply necessary for computers, communication systems, and occasions that require uninterruptible supply. Modern UPS generally adopts pulse width modulation technology and modern power electronic devices such as power MOSFETs and IGBTs. The introduction of microprocessor software and hardware technology makes it realize the intelligent management of UPS.

5.CONCLUSIONS

In summary, power electronic technology has high application value in switching power supplies. In the development of power supply technology in the future, people should devote themselves to studying the integration of power electronics technology and power technology, improve the technical level of switching power supplies, and encourage them to give full play to their due role and functions in practice, and provide for the development of related fields. Strong support.

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Research on Reactive Power Compensation Technology of Power System

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Abstract: This article analyzes the reactive power compensation technology in the power system, analyzes the basic principles and concepts of reactive power, discusses the impact and harm caused by the lack of reactive power to the power grid, and introduces the classification of compensation devices, including machinery Rotating reactive power compensation devices, static reactive power compensation devices and composite reactive power compensation devices, analyze the role and significance of reactive power compensation, and lay the foundation for the future development of reactive power compensation.

Keywords: Reactive power; Power system; Compensation device

1.INTRODUCTION

In the process of continuous operation of the power system, due to the influence of various factors such as the urban and rural environment and geographical characteristics, the power system is prone to voltage instability during the operation. When non-linear factors continue to increase, it will seriously threaten the safety of power system operation. The existence of reactive power is a requirement for the normal operation of many electrical equipment. It reflects the characteristics of the load, and its distribution and changes in size will also affect voltage stability. In addition, the amount of reactive power required by the load will be determined by factors such as the operating conditions of the electrical equipment, environmental parameters, network structure, material characteristics, and load size.Since the power grid is actually a channel for providing electrical energy to many electrical equipment, and the characteristics of electrical equipment are different, the magnitude of reactive power fluctuates and the randomness is strong.The existence of reactive power squeezes the resources of the power supply network to provide active power to the load, and appropriate compensation should be made scientifically and reasonably.If the reactive power is provided by the generator and then transmitted over a long distance, this is impossible.A reasonable method should be to generate reactive power where the reactive power needs to be consumed.Long-term practice has proved that the steady-state transmission power of the line can be enhanced in a certain way, and the line voltage can also be controlled by an appropriate reactive power compensator.The purpose of the reactive power compensation device is to change the natural electrical characteristics of the transmission line so that it can meet the load requirements.Intelligent reactive power compensation technology is an emerging technology emerging in the development of power automation.It effectively solves the problem of voltage instability in the current power transmission process and effectively improves the level of power automation.

2 THE CONCEPT OF REACTIVE POWER AND REACTIVE POWER COMPENSATION

In the power system, some electrical equipment such as transformers and motors work according to the principle of electromagnetic induction.When an alternating current flows through the coils of the equipment, alternating magnetic flux is generated in the iron core.Under the action of the alternating magnetic field, these Only electrical equipment can convert and transfer energy.The current required to establish a magnetic field is inductive, and the phase lags the voltage by 90 degrees, which is a reactive current.Therefore, the electrical power required to establish the alternating magnetic field and induced magnetic flux is called reactive power.Reactive power is not directly converted into heat or mechanical energy.They are not "useless" electrical power.On the contrary, they are electrical equipment that can operate normally.A prerequisite for Reactive power is not consumed in the power grid.It is only periodically converted with electrical energy and does not actually consume energy.Therefore, this type of power is usually called reactive power.To ensure the normal operation of the power system, the power system In addition to active power supply, reactive power supply is also required, both of which are indispensable.[1]

When the current is doing work in the inductive element, the voltage leads the current by 90 degrees, and after the capacitor is connected to the power system, its voltage lags the current by 90 degrees.In the same circuit, the current flowing through the capacitive device is in the same direction as the current flowing through the inductive device On the contrary, the phase difference is 180 degrees, so the current flowing through the capacitor is opposite to the reactive current required by the electrical equipment to establish the magnetic field, and can cancel each other (compensate), thereby reducing the total current.Therefore, in the power system, the device with capacitive power and the inductive load are connected in the same circuit, through the mutual conversion of energy between the capacitive device and the inductive load, so that the reactive power required by the inductive load is compensated, which is what the power system said Work compensation.

3 APPLICATION OF REACTIVE POWER COMPENSATION IN POWER SYSTEM

The power balance of the power system refers to the balance of active power and reactive power.Electric energy has a very important feature that cannot be stored.At any moment, the power system must be strictly

balanced in terms of production, transmission, distribution and consumption.Otherwise, the power quality cannot be guaranteed.When the active power supplied by the system is greater than the active power consumed by the load, the system frequency will increase, and when the active power supplied by the system is less than the active power consumed by the load, the system frequency will decrease.In the power system, voltage and reactive power are also a pair.When the reactive power emitted by the system is greater than the reactive power consumed by the load, the system voltage will increase.When the reactive power emitted by the system is less than the reactive power consumed by the load, the system voltage will decrease.A serious shortage will cause a sharp drop in the voltage of the power system, which may collapse the system and cause a large-scale blackout of the power grid.Therefore, in the power system, in order to ensure the quality of power supply and improve the utilization of electrical equipment, the power system will adopt a large number of reactive power compensation devices.In order to avoid the long-distance transmission of reactive power by the power transmission system and increase the reactive power loss, the power system is basically affected.The installation of reactive power compensation devices at the electrical end adopts the principle of on-site balance to ensure that the voltage of the system's hub substations can meet the specified requirements.

4 CLASSIFICATION AND SELECTION OF REACTIVE POWER COMPENSATION DEVICES IN POWER SYSTEMS

4.1 MECHANICAL ROTATING REACTIVE POWER COMPENSATION DEVICE

Mechanical rotating reactive power compensation equipment belongs to the traditional reactive power compensation device.Their salient feature is to change the output or absorption of reactive power by adjusting the excitation current of the rotor winding.They have played an extremely important role in the early development of the power system.Even today, it also plays an active role in the reactive power regulation and static voltage stability of the power system.

4.1.1 ADJUST THE CAMERA SYNCHRONOUSLY

Synchronous tuning camera can be regarded as a synchronous motor without any load.Its compensation feature is that it can run over-excited and send out inductive reactive power to increase the voltage, and it can also run under-excited to absorb inductive reactive power and reduce the voltage .In the early occasions with higher requirements for power factor compensation, this method is usually adopted.This kind of motor is also called a synchronous compensation machine.Since the synchronous motor is equivalent to a synchronous motor running at no load, that is, a compensation device based on a rotating motor, it still has a certain amount of motor rotation loss, but it can generate reactive power to the grid by increasing the excitation.During over-excitation operation, it provides inductive reactive power to the system, so it is also called reactive power.At this time, the function of the synchronous adjustment camera is like a capacitor; during under-excitation operation, it absorbs

inductive reactive power from the system.The function is equivalent to an inductor.In most cases, the power grid needs to provide inductive reactive power through the synchronous tuning camera, so it mainly operates under the overexcitation state, that is, the electromagnetic power is close to zero.[2]

4.1.2 SYNCHRONOUS GENERATOR

Synchronous generator is one of the earliest reactive power compensation equipment used.Under the operating environment of modern large power grids, synchronous generator can no longer be called a special reactive power compensation equipment.It is only a system that guarantees its normal operation.The principle of providing appropriate reactive power is also realized by adjusting the excitation current of the generator.Excitation adjustment can not only change the amplitude of the generator output voltage, but also change the output reactive power.Generally speaking, the adjustment of the reactive power by the generator will be restricted by the change of the terminal voltage amplitude.Due to the small size, large capacity, and short insulation distance of the generator, the amplitude of its terminal voltage exceeds the allowable rated value, or the amplitude changes too drastically, which may cause a short circuit of the winding or the winding to the ground.The damage, even seriously reducing the overall insulation level and service life of the generator.From another perspective, even if the generator can effectively provide reactive power compensation, since the generator may be located far away from the user terminal to be compensated, the actual reactive power reaching the user will not be too much due to line loss.Even in areas where the modern ring network is relatively developed, the reactive power compensation of individual generators (power plants) can only be seen as a supplement to the reactive power compensation of the entire network.[3]

4.1.3 SYNCHRONOUS MOTOR

A synchronous motor is an AC motor.The stator winding is the same as an asynchronous motor.Its rotor rotation speed is the same as the speed of the rotating magnetic field generated by the stator winding, so it is called a synchronous motor.Similar to the synchronous motor, the synchronous motor can work in an inductive or capacitive state according to the different excitation intensity.Because large mines, large rotating machinery or large loads far from the power center have long transmission lines and large inductive load disturbances. The network causes a serious impact.At this time, if power is used to transmit reactive power to compensate, it will cause active power loss due to the transmission of a large amount of reactive power on the transmission line.Therefore, the application of the synchronous motor can better solve the disturbance generated by this large-scale inductive device.At this time, only the excitation of the synchronous motor needs to be adjusted to make it a capacitive load.In many cases, the synchronous motor is used to improve the power factor of the power distribution system.It can be adjusted continuously and smoothly according to the needs.It can also provide reactive power to the grid, so that the low-speed load can run under stable

conditions and has a high Enhance the efficiency of overload.However, the one-time investment of the equipment with this compensation method is relatively high and it is troublesome to use and maintain.[4]

4.2 STATIC REACTIVE POWER COMPENSATION DEVICE

The static reactive power compensator means that the compensation equipment is fixed during operation.It actually means that this kind of reactive power compensation equipment has no rotating part, so it has high efficiency, small size, small footprint, and dynamic response time.Short and other characteristics.They are mainly reactive power compensation devices generated by flexible AC transmission technology.

4.2.1 FIXED CAPACITOR

The working principle of the fixed capacitor is to compensate the inductive reactive power demand on the load side by increasing the capacitive reactive power to improve the stability of the load voltage.The main characteristics of this early compensation method are simple structure, economical and practical.However, since the switching of the shunt capacitor is realized through the contactor, it is difficult to accurately locate the switching time of the capacitor.Therefore, its fatal disadvantage is: the closing inrush current is large, and in severe cases it can reach 50-100 Ir (Ir is Compensation capacitor rated current); In addition, when disconnected, a larger arc will be generated, and the running noise will be relatively large, which is easy to cause the compensation capacitor and If the contactor is damaged, it is not advisable to switch frequently, otherwise it will reduce the service life and cause interference to the power supply system and surrounding electrical equipment.Since capacitors can only achieve hierarchical compensation, their compensation effects can only be graded, with poor compensation accuracy and poor real-time performance, making it difficult to adapt to applications with rapid changes in large industrial loads.Limited by the operating frequency of the AC contactor and the charging and discharging time and life of the capacitor, the FC static compensation device is generally equipped with a switching delay function, and the delay time is generally 30 s, which does not have a compensation effect for rapidly changing loads.The above characteristics determine that the capacitor compensation scheme is only suitable for industrial fields where the reactive load is relatively constant.

4.2.2 STATIC VAR COMPENSATOR

Static var compensator (static var compensator, SVC) generally uses thyristors as switching devices, which are small in size, light in weight, and flexible in control.SVC is a static var generator or absorber connected in parallel.Its output current can be adjusted to capacitive or inductive in order to maintain or control some specific parameters of the power system.According to this definition, there can be many kinds of SVC, especially in the power distribution system, and many types are derived.

5 SUPERIORITY OF REACTIVE POWER COMPENSATION DEVICE

The superiority of reactive power compensation device is

mainly reflected in the following points.

5.1 REACTIVE POWER COMPENSATION WITH PASSIVE FILTERING

This type of reactive power compensation can play a filtering role.The basic principle is to use a parallel LC series circuit to short-circuit a certain order of harmonics, and form a pure capacitance or pure inductance reactive compensation for the fundamental wave.This type of compensation is generally only for low-order harmonics, such as the 5th, 7th, 11th, 13th and so on.

5.2 CONVENIENT AND QUICK MAN-MACHINE OPERATION

Most of the compensation devices have built-in high-speed microprocessors, which can perform fast data acquisition, signal processing, analysis and calculation, optimized decision-making, and control output.Before putting them into operation formally, some parameter settings are required.The convenient man-machine operation is conducive to the flexibility and accuracy of the control system.In some cases, the keyboard and display can also be used to call historical data.

5.3 TUNING SETTINGS OF CONTROL PARAMETERS

Modern reactive power compensation devices are highly intelligent.For example, the control target can be set to voltage stability or power factor compensation, instantaneous reactive power control, expert system or intelligent control, etc.In order to meet the requirements of versatility, some controllers also require setting of current or voltage transformer ratio, communication baud rate setting, historical data query, fault or power outage count record, etc.

5.4 FLEXIBLE NETWORK COMMUNICATION FUNCTION

All reactive power compensation equipment has remote communication function, and the corresponding remote communication port, communication protocol and baud rate can be set.Generally, there are serial communication channels such as RS232 and RS485.The compensation device can transmit all the data collected on site with various receiving devices through the serial port.

6 CONCLUSIONS

This paper analyzes and studies the reactive power compensation technology in the power system, and a reasonable selection of compensation devices can minimize network losses and effectively improve the quality of the power grid.Conversely, improper selection or use may cause many problems such as voltage fluctuations in the power supply system and degradation of power quality.

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Micro Course-based Flipped Classroom in College Oral English Teaching

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Abstract: During the knowledge economy era, the globalization and cross-cultural communication trend has made a big stride. Therefore, English plays a big part in many aspects as an international language. Reviewing the current oral English teaching conditions in China, we can find that there are several common features in Chinese famous universities. That is, they tend to hire some foreigners who have teaching experience to assume the responsibility of oral English teaching for Chinese students, providing English learning atmosphere in which students could talk with foreigners directly. However, such kind of teaching mode has some limitations due to class scale and limited classroom time. Although the research related to micro course-based flipped classroom has not widespread or deeply analyzed by many scholars, some theories and empirical studies regarding oral English teaching mode have made some progress. Thus, this paper aims to explore the effectiveness of college English teaching with the introduction of flipped classroom as well as college students' attitudes and assessments toward existing teaching method via questionnaire and interview, giving recommendations for the oral English teaching reform.
Keywords: College English; Micro Course; Flipping Classroom; Oral English Teaching

1 FLIPPED CLASSROOM MODE IN ORAL ENGLISH TEACHING

(1) Micro Course-based Flipped Classroom

Micro course-based flipped classroom is featured by Micro Learning Resource, namely the structured digitalized learning materials. The key components of Micro Learning Resource are teaching video clips and relevant course design, teaching reflection, practical tests, students' feedback as well as comments from teachers. [1] There are some distinctive features of Micro Learning Resource. First of all, the teaching video clips last for a short period, which means the teaching time will be limited to 10 minutes in the form of micro course so that students could effectively absorb the teaching key points by previewing them before entering classroom. Secondly, since the main purpose of micro courses is to help students have a deep understanding about the teaching difficulties and the contents that students feel confused, hence the contents of micro course are strongly targeted and should be related to the teaching procedures or teaching activities in classroom. Furthermore, all the students and instructors could use their mobile phones to watch teaching videos, thus achieving mobile learning according to their learning targets and needs. Additionally, the micro learning resource is more effective than traditional teaching models thanks to its originality. It is noticeable that both teachers and students could be the designer and developer of micro courses, which definitely will stimulate students learning interest, strengthening the relationship between them. Therefore, it is essential to make full use of micro course in flipped classroom mode. [2]

(2) Specific Implementation Steps

Firstly, micro course should be designed carefully before students entering classroom. Reviewing the implementation performance of flipped classroom mode of other colleges, it is obvious that most teachers tend to make micro courses by screen recording software. [3] In this process, it should be noted that each unit of college oral English textbook has a particular theme, therefore teachers are required to outline relevant words, phrases and typical sentence pattern, creating a real English learning atmosphere. Besides, teachers could adopt some feasible raw materials, images and even videos offered by students when making micro courses. After that, the micro course and relevant learning materials will be posted on online-based media platforms. It should be pointed out that students can pause or review the micro course videos when encountering some abstract conceptions or difficulties. Next comes to the group activities in classroom. At this step, students need to give a presentation about what they have learned in micro course and teachers could also ask questions to get some feedback about students' learning performance. And then some typical problems and teaching key contents or difficulties could be thoroughly analyzed and discussed in classroom. In order to reinforce the contents, all the students will be divided into several groups according to their English levels and then they are required to finish a practical task within a time limit. For instance, dialogue, role-play activity, presentation or dubbing could be organized, which is vital for the enhancement of students' participation or comprehensive ability. [4] Meanwhile, teachers need to record students' performance in classroom by using camera or mobile phone and all the various short videos will be posted on platforms. Finally, performance evaluation should be conducted regularly.

2 METHODOLOGY

This study implemented a questionnaire and interviews to probe into the feasibility of flipped classroom mode in college spoken English teaching and learning as well as the attitudes of students towards the current teaching method, summarizing individual suggestions about the reform of higher education teaching. 21 items are included in this questionnaire. So this chapter displays the detailed methodology of the survey. Research questions, subjects and instruments are outlined as follows.

(1) Research Questions

Based on what have been described and analyzed in

previous chapters related to status quo of spoken English teaching. It is a necessity to testify whether flipped classroom mode is conducive to students' oral English level and performance in terms of intonation, fluency and accuracy. It is not easy to adopt all the experimental methods to accurately judge to what extent this new model could enhance students' performance. However, their attitudes and personal needs are more conspicuous and intuitive to detect regarding spoken English teaching and learning. Meanwhile, their assessments of teaching effects could be reliable and valuable information for the research results. Therefore, this questionnaire and interview mainly focus on whether flipped classroom mode is effective for the enhancement of students' oral English performance and students' personal opinions and recommendations about the oral English teaching approach in the college where I studied.

(2) Subjects

The subjects are college students from Hubei University of Technology Engineering and Technology College. All students aged among 19-23. When conducting the survey, they have studied English for at least six years in school. The questionnaire was designed and then posted online via a special APP. The total 38 questionnaires were filled by students independently, without discussion with their peers for the purpose of data analysis and valid research results.

(3) Instrument

In this research, questionnaire and interview were employed. The questionnaire consists of 21 items regarding three aspects: students' performance and learning habits before class and their autonomous learning ability; students' participation in class and their feelings about their professors' teaching style; students' attitudes towards flipped classroom. Additionally, there are two open questions for the interview: 1) what colleges really need to learn most from language training institutions 2) could you please give some recommendations for the college oral English teaching reform. Both the survey and interview were Chinese version to avoid misunderstandings of the questions and students can also naturally express themselves in a relaxing atmosphere when having interview with them in Chinese.

3 FINDINGS

(1) Students' Autonomous Learning Performance before Class

It is a fact that previewing the key teaching contents before class could help students identify their learning difficulties, which could be solved by consulting teachers in class, therefore improving their learning effectiveness. According to the survey, 21.05 % students will always finish their pre-class learning tasks proactively while students who never do pre-class tasks account for 7.89 %, with 42.11% are uncertain about this question, which is disappointing as the majority of learners have poor autonomous learning ability. The reason is that in the college where my survey was conducted, few pre-class tasks will be assigned by teachers in spoken English teaching. Students are motivated to talk actively during class with foreign teachers and their peers. However,

students' self-discipline and autonomous learning ability should never be ignored if they really want to enhance their oral English level, and such phenomenon could be changed via flipped classroom mode thanks to its convenience, originality and excellent language atmosphere. Also, students are required to carefully preview the micro teaching video clips and courseware before entering classroom.

(2) Teachers' Participation in Oral English Class

26.32% of students said teachers frequently support and guide them in participating in class activities and 21.05% claimed they can always receive help from their instructors, with another 31.58% expressed the similar opinion. That is, teachers play a part in students' oral English learning process. However, there is another 7.89% students pointed out that oral English teachers never give some advices for them, which is attributed to their low participation rate in class. Given the result of this question, we can safely draw a conclusion that it is advisable for oral English teachers offer help and suggestions for students so that their willingness to learn and practice as well as participation rate can be strengthened.

(3) Interview Results

Interview is another tool that has been used in this research. It offers a supplement to the questionnaire. The upside of this research approach is that direct and reliable information could be obtained and it is more suitable for the abstract questions. The interview was implemented in Chinese so that subjects could talk freely and clearly and meanwhile I observed their facial expressions and recorded their ideas. The response and representative views are displayed as follows:

Student A: Personally, the language training institutions can offer tailored service for students according to their special requirements and desires. It is students-targeted and teachers could help me figure out my problems during my training period. So I think colleges should learn from these institutions in that respect.

Student B: I think I can learn some practical language skills in language training agencies because teachers will urge and supervise me when I get tired of learning. However, teachers in my campus really do not know my actual progress and weakness and sometimes they required me to finish the assignments which I completely incapable of, which is absurd. And I hope colleges should take students' abilities into account when giving assignments.

According to the interview results from question 1, it can be concluded that most students are dissatisfied with the current oral English teaching approach used in their college. An example about flipping classroom mode has been given in chapter six, so the aim of this interview sets out to offer some evidence and proof for the illustration of feasibility of this approach.

Student C: I hope teachers in colleges should also take some training sessions to improve their professional skills since I found that some of them are not as excellent as I had expected and I learned little during class. Teachers need to be responsible for their own teaching projects. Besides, I think the curriculum needs to be adjusted and

colleges should update the learning materials periodically so that we have a great passion during class. Also, colleges and universities should establish a cooperative relationship so that some effective teaching and learning approach can be shaped. For the famous universities, communicative projects can be held between China and abroad.

Student D: I think some original English films and videos could be displayed in class so that I can accumulate some new vocabularies and how to speak English as native speakers.

It can be seen from the second interview result that participants gave active response to the college English teaching reform. Most of them thought great significance should be attached to the oral English lessons since the college where I investigated seldom continues to offer relevant spoken English activities for them and even no foreign teachers can be seen in class. Other students pointed out that students themselves need to practice more after class by using some mobile apps, stressing that adequate input could possibly produce valid output. Furthermore, they also mentioned that they prefer a flexible, interesting and relaxing teaching atmosphere where learners can proactively turn to professors for help in class. It is acceptable that colleges could drawn on some teaching modes and experience from language training agencies and smaller class scale should be promoted.

(4) Pedagogical Implications

Despite the fact that the verification of micro course-based flipping classroom requires a long-period explorations and extensive experiments, according to the research results and some problems of current teaching methods, teachers and students need to make some changes on teaching and learning perceptions and behaviors. The following are some feasible recommendations summarized from the standpoint of teachers and students. For one thing, learners need to expand their fundamental English knowledge and skills. It subscribes to the notion that vocabulary, pronunciation and grammar are the basics of English learning, thus learners are advised to accumulate those essence so as to enhance their English communicative capabilities. Specifically, learner should accentuate on the phrases and lexicons when reading English raw materials. If possible, they can write down the key points which could be used in their future writing process. Since spoken English also has a close correlation with listening, extensive and intensive listening training should be a necessity. For another, teachers need to optimize the oral English approach, creating a better language learning atmosphere and language input for learners. That is, micro course teaching video clips should be offered so that students' learning enthusiasm and interest could be stimulated. Moreover, the communication model and teachers' role in class are required to make some adjustments. As a result of the advancement of educational information technology, numerous social networking tools offer convenience for the communication between teachers and students, thus abundant oral English resources and information could be share. [5] Meanwhile, teachers should focus on

observation, analysis and support during students' learning course. With flipping classroom, more chance could be gained by learners to exhibit learning results.   4 CONCLUSION

To sum up, flipping classroom mode is an innovative teaching method which has been successfully adopted in some language training agencies though its effectiveness is not self-evident and intuitive in the college I am studying. It is worth promoting in small class. This research did some investigations and explorations mainly from three aspects. In part 2, survey and interview results were displayed to demonstrate students' attitude to this new teaching method as well as some individual suggestions about oral English teaching reform. Furthermore, the feasibility and effectiveness of micro course-based flipped classroom could be verified from the participants' response and research results. I also described some pedagogical implications based on the problems existed in the college and the application of flipped classroom from the perspectives of teachers and learners respectively.

It should be noted that flipped classroom requires teachers have some technical skills since they need to make and edit micro teaching video clips. [6] Given that there are still some difficulties at the early stage of the implementation of flipped classroom, some reasonable measures are well-advised to be taken. Firstly, teachers are encouraged to take some training sessions and programs about oral English teaching innovation so that they have a better understanding of flipped classroom mode and drawn some teaching experience from other famous universities. Since the majority of college teachers are energetic and active, they are more willing to embrace challenge and changes about teaching method. The micro course-based teaching video clips made by them can bring fantastic effects for students. However, the design of micro course is a systematic process, which involves many details and requires feasible theories as basis, hence college teachers also need to do some relevant explorations for a long period. Moreover, college teachers should clearly understand the role of modern educational technology in oral English teaching. No matter how advanced of these technological tools, they can only work as supplement for teachers in classroom, aiming to reduce the teaching burden and achieve better teaching effects rather than take place the role of teachers.

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Research on the Selection Strategy of China's QDII Fund Capital Market

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Abstract: This article uses traditional investment theories to explain the relatively concentrated capital market of China's QDII funds. In this paper, three fund performance evaluation indicators are used to evaluate QDII funds classified according to the capital market, and two stock market risk and return indicators are used to evaluate major global capital markets. Through comparison, we believe that the choice of capital market in QDII fund construction is OK Use Sharpe rate or sortino ratio to give a reasonable explanation. The innovation of this article is to start from the investment status quo of QDII funds, explain the actual phenomenon with theory to prove that traditional investment theories have real guiding value in capital market selection strategies, and provide guidance for future capital market selection strategies.
Keywords: QDII; Selection Strategy

1. BACKGROUND

Since August 2019, due to the continuous escalation of the trade war between China and the United States, coupled with the gradual spread of the new crown pneumonia epidemic at the end of 2019, which has gradually spread to the world and has a huge impact on the world economy, the renminbi has shown an appreciation trend, and there are opinions It is believed that the main reason for the appreciation of the renminbi is the continuous decline of the U.S. dollar index and the Sino-U.S. trade friction, which led the central bank to maintain a relatively tight monetary policy and stop issuing additional currencies. There are also views that it is due to China's stability and effectiveness in the face of the trade war and the new crown pneumonia The political policies and the orderly economic plan for resuming work and production have boosted confidence in the renminbi from all walks of life. Up to now, the appreciation of the renminbi has not shown a weak trend. Therefore, we need to face the problem of how to construct an international investment portfolio in the context of the appreciation of the renminbi.

The implementation and application of investment strategy is the next step in investment. Its strategies include equal-weight portfolio strategy, minimum variance portfolio strategy and cut-point portfolio strategy.

2. PERFORMANCE EVALUATION OF CHINA'S QDII FUNDS

2.1 Preliminary research on QDII funds

From the investment perspective of Chinese investors, investing in QDII funds is undoubtedly a good strategy for building international investment portfolios. We have searched the basic information of all QDII funds currently in the Chinese fund market, a total of 307 QDII funds. Due to the large amount of information, List it in the appendix. After preliminary classification and observation of fund names, we believe that QDII funds mainly invest in 5 capital markets: US capital markets, Greater China capital markets, Asia-Pacific capital markets, BRICS regional capital markets and emerging markets. We think this is a status quo worth exploring. Although existing studies have confirmed the widespread "home country preference" problem in international investment, we cannot use the phenomenon of home country preference to explain the concentration of QDII funds in the US capital market and parts of the Asia Pacific. The phenomenon of the capital market.

Based on the availability of the fund's daily accumulated net worth information from August 1, 2019 to August 31, 2020, we screened the funds and obtained 52 funds that can be used for further research. We later discovered that in the category of emerging markets, there are only two funds that invest in the Vietnamese stock market. Because the Vietnamese stock market is not widely representative of emerging markets and the number of funds under the emerging market category is too scarce, We finally decided to no longer retain the classification of emerging markets to make the research more representative.

In order to control the variables, we further screened QDII funds. The conditions for the fund to pass the screening include:

- ☐ Open-end funds issued before August 1, 2019;
- ☐ Stock funds;
- ☐ Funds that do not invest in specific industries;
- ☐ Funds that do not invest in global stock markets.

After the above screening conditions, we can eliminate the interference of the performance of specific industries and avoid the performance of the few global QDII funds whose investment capital markets are fully decentralized from affecting the research results. The reason for choosing stock funds is that the returns and risks of the assets invested by some funds are not significant and can be excluded from the research. We got 18 funds available for research.

2.2 Sharpe ratio Fund performance evaluation

In 1990, William Sharp developed the well-known Sharpe ratio based on the asset pricing model in traditional investment theory, which is used to measure how much excess returns an asset can take on a unit of total risk. The Sharpe ratio still uses Markowitz theory. The mean variance model in the formula is as follows:

$$\text{Sharpe ratio} = \frac{[E(R_p) - R_f]}{\sigma_p}$$

We collected the daily cumulative net return rate of 18 stocks from August 1, 2019 to August 31, 2020, and calculated their expected rate of return and standard deviation based on this:

$$E(R_p) = \frac{\sum R_i}{n}$$

$$\sigma_p = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$$

Since we are using the daily cumulative net return rate within a year, we need to convert both the expected rate of return and the standard deviation into the annual rate of return and the standard deviation relative to the annual rate of return.

Considering that QDII funds are the type of investment used in the construction of international investment portfolios, when we select the risk-free rate of return, we use the universally recognized standards around the world and the time span of the selection of funds, based on the US one-year Treasury bond yield The expected value in the same time frame is the risk-free rate of return. After calculation, the risk-free rate of return is 0.95%.

2.3 Terynor ratio Fund performance evaluation

In funds, due to the large number of investment assets and there is no phenomenon of investing in the same industry in the funds studied in this article, we believe that the non-systematic risks of assets have been fully diversified, while the Treynor index assesses funds The size of the risk premium brought by each unit of systematic risk:

$$T = \frac{(R_P - R_f)}{\beta_p}$$

Compared with the Sharpe rate, only the denominator in the formula has changed, and β_p measures the systemic risk of each fund. We regress the returns of 18 funds according to the single factor model to obtain β_p:

$$r_{it} - r_f = \alpha_i + \beta_i(r_{mt} - r_f) + \epsilon_{it}$$

In order to make the market rate of return in the single-factor model as close to the fact as possible in the regression process, we adopt the performance comparison benchmark of each fund.

2.4 Jensen ratio Fund performance evaluation

The Jensen index is used to measure whether the fund's return rate exceeds the market rate of return. The reason for this indicator is that people always try to pursue better than the market rate of return performance in the stock market, and this purpose is often the original intention of building funds., The formula is:

$$\text{Jensen Index} = (R_i, t - R_f, t) - \beta_i(R_m, t - R_f, t)$$

The R_m here measures the market rate of return the same as the Treynor index. In order to be as accurate as possible, we still choose the performance comparison benchmark of each fund as the benchmark for the market return rate of the market in which it is located.

2.5 Classification and ranking of fund performance evaluation

We ranked 18 funds 3 times according to the three performance evaluation indicators calculated before, as shown in the figure below:

Table 1 Ranking summary of the three major performance evaluation indexes of 18 funds

name	Sharpe rate	Treynor index	Jensen index	harpe rate ranking	Treynor index ranking	Jensen index ranking	Region
Bosera Greater China Asia Pacific Selected Stocks	1.103582008	2.991333778	-0.008515987	11	11	13	Asia Pacific
E Fund Asia Selected Stocks	1.648335996	8.760629366	-0.0078231371	1	5	7	Asia Pacific
Huaan Hong Kong Selected Stocks	1.409398131	11.08836051	-0.0079691454	4	4	8	Greater China
ICBC Hong Kong Small and Medium Cap RMB	1.356877317	5.284467349	-0.0079978809	5	9	9	Greater China
ICBC (Hong Kong) Small and Medium Cap USD	1.350594123	1.488158622	-0.007623992	6	13	5	Greater China
Huaan Greater China Upgrades Stock	0.739839903	21.40149479	-0.008783524	14	2	14	Greater China
Southern Hong Kong Preferred Stock	1.205914009	1.205757273	-0.008324614	9	14	12	Greater China
BRIC Index	0.339202076	8.238465268	-0.009265422	17	6	17	BRICS
Xincheng four countries configuration	0.497898586	1.157152494	-0.009099244	15	15	15	BRICS
Huaannasdaq 100 Index RMB	1.512995102	1.63120176	-0.007084253	3	12	2	United States
Hua NASDAQ 100 Index US Dollar Bills	1.545425631	63.33841594	-0.007605872	2	1	4	United States
Harvest U.S. Growth Stocks	1.10138825	7.093651422	-0.008089485	12	8	10	United States
Harvest US Growth Stocks USD Exchange	1.113041854	7.140226924	-0.008089485	10	7	10	United States
Long-term S&P 100 equal weight index	0.352299902	4.400486818	-0.009117626	16	10	16	United States
Cathay Pacific Nasdaq 100 Index	1.063198607	1.113453115	-0.007327972	13	16	3	United States
Dacheng Nasdaq 100 Index	1.346199638	18.35810208	-0.007718557	7	3	6	United States
GF Nasdaq 100 Indexa	1.316529197	0.18619562	-0.006987137	8	18	1	United States
Dacheng S&P 500 Equal Weight Index	0.053150741	0.989750882	-0.009410666	18	17	18	United States

It is obvious from the above table that among the four

major capital markets invested by China's QDII funds, the

funds invested in the capital markets of the Greater China region performed the best, followed by funds invested in the capital markets of the Asia-Pacific region, followed by the funds invested in the BRICS countries. The fund performance of the market, the performance of investing in the US capital market is at the bottom.

Based on the above results, we are further puzzled about the preference of China's QDII funds to the US capital market. We will further analyze the reasons behind it through the performance evaluation of major global capital markets.

3. CONCLUSIONS AND PROSPECTS

After argumentation and analysis, we believe that the objective phenomenon of China's QDII funds focusing on a small number of capital markets can be explained by using traditional investment theories, which also proves the importance of choosing capital markets in the process of constructing QDII funds. The decision-making steps can be guided by scientific theory, that is, select a number of representative indexes in the target capital market, and calculate its Sharpe rate within a certain time range, and a more reasonable capital market choice can be given according to the Sharpe rate ranking.

The phenomenon of different risk premiums per unit of risk in various capital markets around the world is bound to be affected by a variety of factors, including liquidity risk, exchange rate risk, political risk, etc. This article does not go into this research direction. Discussion can be used as a future research direction.

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The Causes, Features and Countermeasures of Trade Disputes Between China and the United States

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Abstract: This trade disputes between China and the United States began with a memorandum signed by US President Trump on March 22, 2018, claiming to impose tariffs on Chinese imports in accordance with Article 301 of the 1974 Trade Law. The Ministry of Commerce subsequently adopted countermeasures. Although China and the United States have conducted many rounds of high-level consultations so far, there is still no sign of an end in the short term. Through the background analysis and literature review of Trade disputes between China and the United States, this article explores the possible causes of its occurrence, summarizes the key characteristics of the macroeconomic model under its background, and finally gives corresponding policy recommendations for China to adopt appropriate countermeasures. The research in this article finds that Trade disputes between China and the United States occur ostensibly because of the huge trade deficit and intellectual property disputes between the two countries, but the fundamental reason is that the Trump administration shifts domestic contradictions in order to contain competitors. The key feature of Trade disputes between China and the United States can be mainly concerned with the setting of international trade opening parameters between countries when constructing the macroeconomic model.
Keywords: Trade Disputes; Causes; Features; Countermeasures

1. INTRODUCTION

This Trade disputes between China and the United States started with a memorandum signed by US President Trump on March 22, 2018, claiming that due to China's infringement of US intellectual property rights, tariffs were imposed on Chinese imports in accordance with Article 301 of the 1974 Trade Act. The value of these commodities is as high as 60 billion US dollars. China and the United States issued a joint statement in May 2018 to suspend the trade war and find ways to reconcile. However, the Office of the United States Trade Representative adjusted the tariffs on a batch of US$50 billion worth of Chinese goods exported to the United States from the original 10% to 25% on June 16th of the same year. After that, China also promptly took countermeasures to retaliate.

In the following year, the two sides conducted multiple rounds of negotiations and consultations, and even in March 2019, the United States announced that China-US economic and trade negotiations had made significant progress. However, US President Trump announced on May 5, 2019 that another US$200 billion worth of Chinese exports to the United States would be imposed 25% tariffs, and China subsequently took countermeasures. Subsequently, China and the United States conducted several rounds of high-level consultations. Finally, the two parties signed the first phase of the trade agreement on January 16, 2020. The content of the agreement mainly includes tariffs, enterprise access treatment, technology transfer and technology licensing, monetary policy autonomy, and bilateral exchange mechanisms at all levels. However, the new crown pneumonia epidemic in early 2020 and the situation in Hong Kong have cast a shadow on Sino-US relations. The latest situation is that US President Trump stated on July 10, 2020 that he would not consider the second phase of Sino-US trade negotiations. The future direction of trade disputes between China and the United States is now full of uncertainty, and there is no trend of easing in the short term. Because China and the United States are top two in the world in terms of output, and they have close economic and trade exchanges. Today, China is the United States' largest trading partner and source of imports, while the United States is also China's largest export market and second largest trading partner. The economic and trade disputes between the two countries have had a significant impact on the economies of the two countries and even the global economy. Based on this, it is particularly important and necessary to analyze the causes, features and countermeasures of trade disputes between China and the United States.

2. LITERATURE REVIEW

According to the research questions in this article and the existing literature, the review mainly includes two aspects. First, the analysis of the causes of trade disputes between China and the United States. According to a report released by the Peterson Institute for International Economics in the United States, the reduction in the economic gap between China and the United States and the rapid development of our country's economy have prompted the National Security Strategy Report to regard our country as its strategic competitor [1]. Lin and Wang believe that the trade disputes between China and the United States is mainly due to the mismatch of industrial structure, trade imbalance and the different economic systems of the two countries [2].

Second, our country's response strategy to trade disputes

between China and the United States. Kim and Spilker believe that our country's dependence on imported intermediate products is relatively strong. The possible way for our country to alleviate economic and trade disputes is to lobby the US government through downstream industries to remove sanctions and avoid further expansion of losses between the two countries [3]. Liu and Woo (2018) researched that although China is still a developing country, because China's economic situation at the time of this economic and trade disputes was different from that of the early reform and opening up 40 years ago, China should establish more mutually beneficial trade and investment with developed countries[4].

The trade disputes between China and the United States lasted for a long time, and many non-economic and trade uncertain factors were mixed in, making the possible path of future development more complicated. Most of the existing documents were written at the beginning of economic and trade disputes, and they underestimated the comprehensiveness of economic and trade disputes analysis and the difficulty of cooperation. In this case, it is particularly necessary to study the causes, features and countermeasures of trade disputes between China and the United States in combination with existing background materials.

3. THEORETICAL ANALYSIS

The theoretical analysis of this article mainly includes the analysis of the causes of trade disputes between China and the United States and the summary of key features.

The possible reasons for the outbreak of trade disputes between China and the United States, in summary, mainly include the following three points: First, it is caused by the huge trade deficit. Since the 1970s, the overall trend of the US trade deficit in goods has tended to expand. In terms of specific figures, the US trade deficit in goods has grown from US$2.26 billion in 1971 to US$891.32 billion in 2018. After the economic and trade disputes occurred, the US goods trade deficit fell to US$853.23 billion in 2019. In addition, the U.S. and China's goods trade deficit both in absolute numbers and the proportion of the goods trade deficit in the overall U.S. goods trade deficit have shown an upward trend. The US and our country's trade deficit in goods is much larger than that of Mexico, Germany, and Japan. This is also the reason why US-China economic and trade relations tend to attract the attention of US politicians [5-6].

The huge trade deficit between the United States and China, on the one hand, is closely related to the consumption habits of American residents, and on the other hand, it is related to the dollar's position of international currency. From the knowledge of open macroeconomics, it is easy to know that a country's trade balance depends on the difference between the country's domestic savings and domestic investment. If domestic savings are greater than domestic investment, there will be a trade surplus. Otherwise, there will be a trade deficit. Due to the low willingness of American residents to save, they often cannot exceed domestic investment, resulting in a trade deficit. In addition, due to the international

currency position of the U.S. dollar, developing countries represented by China often hold large amounts of U.S. dollars or U.S. Treasury bonds as their foreign exchange reserves, which also provides a basis for the long-term maintenance of the U.S. trade deficit. But no matter what, the formation of the trade deficit is not intentional by either party alone, but is related to consumption habits and international position, but it has actually deteriorated the economic and trade relations between China and the United States.

Second, caused by intellectual property disputes. The beginning of the trade disputes between China and the United States is that the United States imposed additional tariffs on our country in accordance with Article 301 of the 1974 Trade Act. This investigation mainly concerns whether American companies are forced to share advanced technology with Chinese partners, whether they have been forced to transfer technology or whether their intellectual property rights have been infringed. Since 1991, the United States has used Section 301 against China six times.

In fact, since the Sino-US intellectual property game, our country has made great progress in the legislation and enforcement of intellectual property rights. In October 1996, the Supreme People's Court established a special intellectual property court to deal with this issue. Soon, Beijing, Shanghai, Tianjin and other places also established intellectual property courts. The State Council issued the "National Intellectual Property Strategy Outline" on June 5, 2008, and issued and implemented the "National Intellectual Property Strategy Implementation Promotion Plan" and the "China Intellectual Property Protection Action Plan" in 2010. Since 2013, China has revised the "Trademark Law", "Patent Law", and "Anti-Unfair Competition Law" related to trademark protection, patent protection, and trade secret protection provisions, established National Intellectual Property Administration, and The "three-in-one" work of intellectual property trials has been carried out in courts across the country, that is, the intellectual property courts uniformly try civil, criminal and administrative cases involving intellectual property. It can be seen from this that our country has done a great job in the legislation, judicial, and enforcement of intellectual property rights. Of course, it is undeniable that there are still some infringements of intellectual property rights in certain specific fields, such as medicine and electronic information. This also provides an opportunity for the US to provoke economic and trade disputes.

Third, it stems from the fact that the US has shifted domestic conflicts in order to contain competitors. Since the 1960s, with the economic rise of the European Union, Japan, and emerging market economies represented by China, the proportion of US GDP in the world's GDP has shown a volatile downward trend. In terms of specific figures, according to the World Development Indicators data, the proportion of US GDP in the world GDP has dropped from 40% in the early 1960s to 24.8% in 2019. In 2010, China's GDP surpassed Japan to become the world's second largest economy. According to the calculation data of the Peterson Institute for Economic Research in the

United States, if the current economic development trend continues, China's nominal GDP will surpass that of the United States by 2040 at the latest [7-8].

The U.S. economy has encountered the problem of the transfer of manufacturing industries abroad and the double deficit of trade and fiscal revenue in the process of development, which indirectly led to the rise of domestic unemployment and the polarization of wealth. In order to transfer domestic contradictions, some politicians attribute their domestic problems to the low labor costs and favorable investment conditions of emerging market economies. China, as a typical representative of emerging market countries, bears the brunt of the transfer of contradictions.

In short, from the multi-round economic and trade disputes game process between China and the United States, it can be seen that the main struggle measures taken by the two sides are simply adding tariffs to each other, which increases trade barriers, which provides a basis for the model construction of subsequent research. Because in the open macroeconomic model, there are special parameters to describe the degree of openness of international trade between countries, we can simulate the trade disputes between China and the United States by changing the value of this parameter. From this, we can see that the key feature of trade disputes between China and the United States is mainly manifested in the model of changes in the parameters of international trade opening between countries.

4. CONCLUSION

Through the background analysis and literature review of trade disputes between China and the United States, this paper explores the possible causes of its occurrence, summarizes its features in the construction of the macroeconomic model, and finally gives corresponding policy recommendations for our country to adopt appropriate countermeasures. The research in this article finds that trade disputes between China and the United States occur ostensibly because of the huge trade deficit and intellectual property disputes between the two countries, but the fundamental reason is that the Trump administration shifts domestic contradictions in order to contain competitors. The key feature of trade disputes between China and the United States can be mainly concerned with the setting of international trade opening parameters between countries when constructing the macroeconomic model.

Faced with the complexity of the uncertain factors in Trade disputes between China and the United States, the main countermeasures that our country can take include:

First, use war to promote peace and actively seek more trading partners. In the course of many rounds of trade disputes between China and the United States negotiations, the US's demands are more uncertain and China's core interests are also touched from time to time, so the negotiation process is extremely difficult. Moreover, the conclusion of a negotiation agreement requires both China and the United States to meet each other halfway. It is impossible for one party to give in alone to reach a long-term cooperative relationship. In addition, we should expand our horizons to multilateral cooperation, actively promote the construction of the "Belt and Road", find more trading partners, and provide a broader space for the continuous development of Chinese enterprises.

Second, explore the domestic market and enhance the competitiveness of domestic enterprises. Given that the trade disputes between China and the United States is unlikely to end in the short term, and the direction of the trade disputes is not unilaterally determined by our country, Chinese enterprises must adjust their industrial structure, actively explore the domestic market, and promote domestic demand. The Chinese government can further improve the intellectual property protection policies adapted to the current economic development stage by reducing taxes and fees, optimizing the business environment, attracting foreign investment, and continuously improving the competitiveness of domestic enterprises.

Third, further promote the reform of the exchange rate system to provide a stable nominal exchange rate environment for the continuous operation of enterprises. The continuous development of trade disputes between China and the United States has had a certain impact on the nominal exchange rate between the RMB and the U.S. dollar. Although on the surface, the devaluation of the RMB is conducive to the export of domestic enterprises in our country, if the expectation of devaluation by private economic entities is formed, it will cause a large amount of capital outflow and adversely affect the confidence of our country's domestic market and the security of foreign exchange reserves. Therefore, it is necessary to effectively supervise the capital account, promote the continuous reform of the RMB exchange rate formation mechanism, strengthen the RMB's international status, and provide a stable nominal exchange rate environment for business operations.

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The Home--Living Comfortable in My Way

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Abstract: This paper presents a model to preserve both the human rights of Environmentally Displaced Persons (EDPs) and unique culture heritage of disappearing countries caused by the rising of sea levels in the next 150 years by choosing the appropriate receiving countries and relevant policies. We build a triple exponential smoothing model to predict the rising of sea level. Based on the prediction, we select out the countries at risk of being submerged in accordance with the indicators and data about altitude and population from Maldives, Bahamas, Turks and Caicos Islands, Tuvalu, Marshall Islands and Kiribati. We adopt the triple exponential smoothing method to predict the rising of GMSL. Comprehensively considering multiple factors related to the altitude and population and other optional solutions, we screen out 6 countries facing the risk of becoming underwater. Then we calculate the population of these countries when disappearing according to the historical variation of their population.
Keyword: GMSL; Forecast

1. THE FORECAST OF COUNTRIES AT RISK

1.1 The Forecast of Sea Levels

The World Bank Development Data Group coordinates statistical and data work and maintains a number of macro, financial and sector databases. Working closely with the Bank's regions and Global Practices, the group is guided by professional standards in the collection, compilation and dissemination of data to ensure that all data users can have confidence in the quality and integrity of the data produced. Much of the data comes from the statistical systems of member countries, and the quality of global data depends on how well these national systems perform. Firstly, we apply a second exponential smoothing method to predict the rising of sea level under the assumption of the GMSL is growing linearly over time. The results show that until 2160 the rising ranges of sea level are no more than 1 meter, which obviously not correspond with the situations predicted by the NASA. Therefore, we analysis and apply the data further by applying the triple exponential smoothing method.

Applying this way to forecast, the growing of GMSL exhibits the trend similar to the exponential function, which matches with the objective laws that the rising of GMSL will speed up as the climate changes aggravate. According to the Research of Smoothing Coefficient in the Exponential Smoothing Method, we assume the α is equal to 0.3, the formulas are showed below.

$$S_t^{(1)} = \alpha x_t + (1-\alpha) S_{t-1}^{(1)}$$
$$S_t^{(2)} = \alpha s_t^{(1)} + (1-\alpha) S_{t-1}^{(2)}$$
$$S_t^{(3)} = \alpha s_t^{(2)} + (1-\alpha) S_{t-1}^{(3)}$$

Predicted value:
$$x_t = A_T + B_T + C_T$$

The predicted value in the period T:

$$x_{t+T} = A_T + B_T T + C_T T^2$$

Where
$$A_t = 3S_t^{(1)} - 3S_t^{(2)} + S_t^{(3)}$$
$$B_t = (\frac{\alpha}{2(1-\alpha)^2})[(6-5\alpha)S_t^{(1)} - 2(5-4\alpha)S_t^{(2)} + (4-3\alpha)S_t^{(3)}]$$
$$C_t = (\frac{\alpha^2}{2(1-\alpha)^2})[S_t^{(1)} - 2S_t^{(2)} + S_t^{(3)}]$$

Where α is smoothing coefficient, T is the predicted value in the period T, St(i) is the exponential smoothed value of number i in the T period.
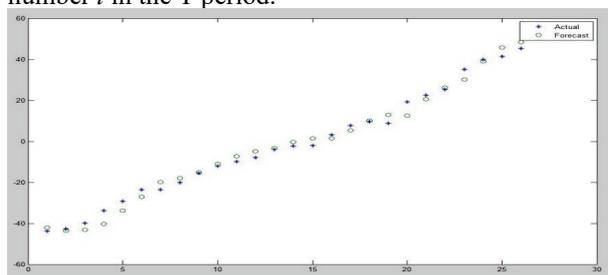
Figure.1 cubic exponential smoothing toobtain a comparison between the predicted and actual sea-level rise

Given space limitations, we will not put the results of the second exponential smoothing method in this paper. The linear charts below illustrate the predicted rising of sea levels in the next 140 years applying the triple exponential smoothing method.

Figure.2 The GMSL smoothed of sea level rising

It is noteworthy that the prediction of the later period is discrete rather than continuous, this is because the forecast of later period is based on the previous prediction, to decrease the computational load, we adjust the time interval from 1-year to 5-year.

The forecast results illustrate that the GMSL will climb up to 1 meter high in 2105, and in 2130 the sea level is 1.5 meters higher than the initial level (we assume the sea level in 2008 as 0). In 2070, the rising range of sea level will reach the 2.5 meters.

1.2 The Choice of Countries At Risk

After predicting the rising range of GMSL, we need to select out several countries that are at risk of flooding according to the data of altitude and population of all the countries on the world. Our data resource is also The World Bank Development Data Group, we select several indicators about altitude and population to help us analysis and forecast.

Firstly, we apply two indicators to conduct preliminary

screening, which are Land area where elevation is below 5 meters (% of total land area) and Population living in areas where elevation is below 5 meters (% of total population). We also produce a new indicator using the above two to measure the degree of population density,

the formula is as below:　 $$\mu = \frac{n}{s}$$

Where n represents Population living in areas where elevation is below 5 meters (% of total population), s is Land area where elevation is below 5 meters (% of total land area). We list indicators for all countries in a table, cells with s greater than 20% are painted yellow, cells with n greater than 20% are painted green, and cells with μ greater than 5 are painted blue. Comprehensively considering the area of the territory, population and the density of population, we initially screen out the countries with at least two kind colors, believing that these countries are likely facing the risk of flooding and have to transfer their people to other countries.

However, this is still not enough to make a final decision, thus we collect more reference resource to help us remove several countries from this disappearing countries list. The detailed reasons of removing them are as below:

Netherland: Although a quarter of areas of Netherlands are under the sea level, the Dutch have built the high dam as the foundation of their houses. Meanwhile, given that most of the territories which are lower than the sea level are located inland, the risk of disappearing is relatively low.

Macao: Macao has built embankments along the river as the prevention for the acknowledgement of high risks. In addition, those people can be transferred internally to other areas in China without generating EDP.

Egypt: Given that the terrain of Egypt's inland area is relatively high, the EDPs can be relocated in the inland area.

Monaco: Monaco is protected by the Europe Land, except for the southern coastline of the Mediterranean, the entire north, west, and east boundary are surrounded by France. So although the average altitude is low, the probability of generating EDP is small.

Bahrain: Bahrain is located at the Persian Gulf, which is the continental sea, thus we could remove it for in the next 150 years the risk of being submerged is tiny.

Finally, we select out the countries at risk of being submerged, and list them in the table below with their current area of territory and population:

Table.1 the predicted of some countries

Country	Predicted time of extinction	Predicted the population of EDP
Maldives	2105	1682486
Tuvalu	2130	29633
Republic of Kiribati	2140	388009
Marshall Islands	2145	199935
Bahamas	2170	159420
Turks and Caicos Islands	2170	229799

1.3 The Prediction of Population

After listing countries being threatened by the rising of GMSL whose people have to move to other countries, we start to build the model to predict their population in the

future. We apply the Grey-forecasting GM Model and the triple exponential smoothing method respectively.

For the convenience of solving issues later, we make the table to illustrate the population scale of these countries when being submerged as below:
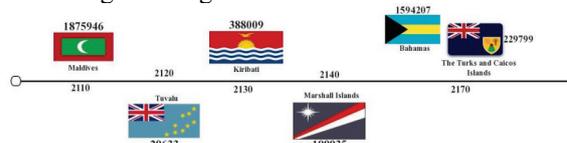
Figure.4 the time and population of the risk countries

To sum up, we adopt the triple exponential smoothing method to predict the rising of GMSL. Comprehensively considering multiple factors related to the altitude and population and other optional solutions, we screen out 6 countries facing the risk of becoming underwater. Then we calculate the population of these countries when disappearing according to the historical variation of their population.

2 RESETTLEMENT POLICY

According to the forecast of rising of GMSL, it is evaluated that the speed of the GMSL growth will be extremely fast after 2100, thus we think that the relevant agencies cannot wait to transfer the EDPs until their countries are entirely submerged. We believe that people at risk of becoming EDPs should be transferred and resettled in advance. In addition, considering the receiving countries' current domestic policies and the maximum of EDPs they could resettle each year, we also recommend that the period of transferring and relocating is supposed to be relatively short. Otherwise, it will increase the burden of receiving countries while causing the result of cultural and population dispersion, which is not conducive to protecting culture of disappearing countries and guaranteeing human rights of EDPs.

It will be a large amount of money given that the receiving countries need to offer the transportation, accommodation, food and relevant welfare for EDPs. Thus, it is reasonable that only the countries with good economic conditions have sufficient fund for relocation and education of EDPs. We believe that the model should be linked with GDP of receiving countries.

Besides, the resettlement of EDPs require quantities of human resources, containing workers of the EDPs' camp construction, organizers of EDPs, staff responsible for the allocation of supplies and practitioners in the education and welfare career. Given that it will take up a lot of labor and volunteers in the receiving country, we consider the relationship between the population and the effectiveness of resettling EDPs in our model.

Meanwhile, to guarantee the rights and interests of receiving countries and avoid the unlimited occupation of resources by EDPs, we will add a constraint about the density of population.

3 MODEL SENSITIVITY ANALYSIS

Our model not only considers the prediction of sea-level population, but also includes the consideration of the whole receiving process, as well as the selection of national policies for migration. Using analytic hierarchy process to establish the index system, which effectively plans the whole process of refugee resettlement;

In our model, many hypotheses which are not verified by literature are fuzzy, and these parameters are ideal, so it may bring some deviation to the model;

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On the Teaching Practice of Art Sketch Basis in Colleges and Universities

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Abstract: In colleges and universities, it is very important to master the sketch basis in the study of fine arts courses. This paper first analyzes the importance of sketch basis teaching, then discusses the current situation of basic teaching of fine arts sketch in colleges and universities, and finally puts forward some suggestions on how to better develop the basic teaching of art sketch in colleges and universities.
Key words: Art Education; Sketch; Higher Education

1. INTRODUCTION

In the teaching process of various fine arts majors in colleges and universities, sketch is an important basic course that must be set up. Whether it is the application and layout of design space color in visual communication design, or sketch and artistic creation in art major, the sketch basis would directly affect the students' mastery of the major in the later stage. In addition, the design of sketch course is to improve students' professional ability and comprehensive quality, and is the cornerstone of further professional teaching. Therefore, it is necessary to carry out the research on the basic teaching of fine arts sketch in colleges and universities.[1]

2. THE IMPORTANCE OF ART SKETCH BASIS TEACHING

2.1 Laying the foundation for the learning of professional skills

First of all, due to the selection of art examination standards in each region are different, and each marking teacher's aesthetic level is also different, so the new students in the painting style have different forms of expression. The opening of sketch class is to let teachers and students have a mutual understanding, so that students can recognize their own style in repeated practice. Meanwhile, teachers can teach students in accordance with their aptitude, and guide students more scientifically. On the other hand, some students' foundation is relatively weak, so they have some difficulties in direct learning and creation of professional courses. This requires in the early sketch class repeatedly polish the foundation, to better link up the study of professional courses.

2.2 Building students' awareness of space transformation

In professional courses such as graphic design, visual communication, or art education, students need to abstract the concrete three-dimensional objects in life, summarize their characteristics, and then use the principles of perspective and picture layout to show them in their works, so as to transform the three-dimensional objects into two-dimensional ones. In sculpture art, architectural art and other majors, it is necessary for students to establish spatial thinking, and transform the two-dimensional design drawings into the concrete phenomenon of clear layers and sharp edges through the structure of point, line and plane. The various exercises in the basic course of sketch are the process of establishing space conversion thinking for students step by step.

2.3 Cultivating the integrity of students' creation

Students' learning in the initial stage is fragmented, from partial imitation to overall imitation, but the integrity of design or creation requires integrity and coherence. Sketch basis teaching is to let students establish the overall consciousness of the picture, to achieve the combination of the overall situation and details, to avoid the fragmentation of the whole picture. It can enable students to maintain the integrity of visual picture performance in the later design, and maintain the unity of the picture in the process of painting creation. The study of sketch is helpful for students to establish the thinking mode of taking the whole situation into consideration in the later study of professional courses, and can easily apply the relationship between lines and light and shade.[2]

3. THE CURRENT SITUATION OF ART SKETCH TEACHING PRACTICE IN COLLEGES AND UNIVERSITIES

3.1 Teaching concept is out-of-date

With the opening of people's thought and the great development of material life, the traditional education mode has been constantly reformed and updated.[3] In this process, teachers must keep up with the pace of the times and constantly update their educational ideas. However, in the teaching process of the basic course of fine arts sketch in colleges and universities at this stage, there is still a phenomenon that teachers always adhere to the traditional concept and adopt the old teaching methods such as copying, demonstration and style imitation, which makes the sketch basis teaching boring and poor in teaching quality. Students and teachers spend a lot of time and energy, but they can't learn useful knowledge, which seriously reduces the teaching effect.

3.2 Teachers lack the cultivation of students' innovative ability

The opening of art courses in colleges and universities is different from the examination oriented education mode before the college entrance examination. Its ultimate purpose is to maximize the students' professional skills, including shaping ability, innovation ability, thinking ability and aesthetic ability. The innovation ability is the most important. For visual communication design, environmental art design, or art painting, innovation ability is the key to evaluate the success of a work, and also determines the depth and height of a student's later self-development. However, in the actual teaching, some teachers can not recognize the potential and advantages of students, can not give reasonable guidance in time, and

even does not conform to their own aesthetic vision, which virtually obliterates the creativity of students. Each student is an independent individual. The teaching of sketch should be taught in accordance with his aptitude and not limited to one pattern, so as to maximize the students' advantages and personality.

3.3 Basic teaching lacks extension

The key point of basic education is that the training of current skills is not to apply them to a certain stage, but to consolidate the skills so that they can continuously improve and strengthen with the increase of practice times. Therefore, in the selection of the teaching content of the basic course of sketch, we should not blindly inculcate in the students, but should select the painting skills according to their own style and professional choice. In addition, the extension of teaching is also reflected in the inheritance and dissemination of art. Colleges and universities are the base for cultivating high-quality talents and an important distribution center for cultural inheritance and dissemination. The content of any course should not only pay attention to the transmission of skills, but also pay attention to the inheritance of the value of culture itself. This is also an obstacle factor in the development of high-efficiency art sketch basic course at this stage.

4. SUGGESTIONS ON BASIC TEACHING PRACTICE OF FINE ARTS SKETCH IN COLLEGES AND UNIVERSITIES

4.1 To combine multiple factors to innovate curriculum design

In the process of improving the basic teaching of fine arts sketch in colleges and universities, we should abandon the monotonous classroom and curriculum design methods in the past, combine the professional direction, the practical significance of the course, scientific teaching design, interesting classroom teaching and other elements to design a new teaching mode that conforms to the physical and mental development characteristics of college students and meets the requirements of quality education. First of all, the basic course of sketch should be adjusted according to different majors, and the practice of basic courses more suitable for the major should be selected. For example, the basic course of sketch for sculpture major should be more practice that can improve students' spatial thinking ability, while the basic course of sketch for art creation major should focus on improving students' aesthetic and shaping ability. Secondly, for the practice oriented major, practice should be interspersed in the process of basic teaching, and the curriculum structure of classroom practice should be optimized to achieve the best effect of basic teaching. Finally, teachers should pay attention to the leading edge teaching concepts and adopt more efficient teaching methods to make classroom teaching more vivid and improve the quality of sketch teaching. For example, teachers can use the fixed-point sketch painting method to teach, that is, from the overall situation to determine a point, and then from a point to the overall situation of the painting method. The first step of fixed-point sketch painting is to observe and discover. The teacher needs to guide students to observe the volume and texture of the objects to be painted, so that students can

know and find all the things. The second step is to make the fixed-point composition, guide the students to choose the most appropriate painting angle, and then combine the center point of the object with the center point of the drawing paper to make clear the position. In the third step, the teacher can guide the students to start from the point of interest to draw the light and shade, structure and so on. The key point of this step is to let students start from the point of interest and create from different parts. The fourth step is to carry out rectification and inspection. You can compare your own works with those of your classmates and masters to find out your own problems and correct them.

4.2 To improve students' aesthetic level and artistic creation ability

In artistic creation, the aesthetic level of the author directly affects the level of the work. What distinguishes creative talents from ordinary people is their unique vision of art and their extreme sensitivity to color. The aesthetic ability can be improved through training, which should start from the basic stage of sketch teaching. Teachers should guide students to look at their own works from the perspective of aesthetic value in the teaching process. In the basic teaching of sketch, we can improve the students' aesthetic level through the training of light and shade contrast and the training of material application. For example, before the training, teachers can choose excellent works from home and abroad for in-depth analysis, so that students can theoretically master how to use light and dark colors in the picture. Then, according to different specific objects, teachers can carry out the analysis of light and dark color blocks to improve the sensitivity of students to light and dark colors. Finally, combined with the teaching objectives and students' interests and hobbies, teachers can let students choose the content they want to create, and carry out the training of light and shade contrast through the abstract expression form.

4.3 To establish feedback mechanism and conduct scientific evaluation

If you can't clearly understand your current level, you can't better carry out the next step of development. This is particularly obvious in the teaching process. Timely teaching feedback can not only make students understand where their problems are, but also let teachers observe the teaching effect in real time. Therefore, the establishment of a scientific and complete feedback and evaluation mechanism is an important means to promote the basic course of art sketch in colleges and universities. From the perspective of students, students should keep their own paintings at each stage, conduct regular comparison and self analysis, and have a preliminary understanding of themselves. Then, combined with the problems pointed out by teachers and feedback suggestions, teachers should make specific plans for the next step of problem adjustment and skill improvement. From the point of view of teachers, we should abandon the traditional concept of determining the level by performance, combine the students' daily work, classroom performance and other aspects of comprehensive evaluation; we should adopt diversified evaluation methods, such as teacher evaluation,

student mutual evaluation, self-evaluation and so on, so that students can form a comprehensive understanding of their own level. In terms of the whole evaluation system, the evaluation system should form an organic interactive mode, promote mutual evaluation between students and teachers, let students explain the teaching elements that they think need to be improved, so that teachers can improve teaching methods according to the basis.

5. CONCLUSION

To sum up, in the process of continuous improvement of higher education, the education of college art sketch basic course is facing many opportunities and challenges. We should not only be objective to the problems existing in teaching at this stage, but also boldly explore new teaching ideas and teaching methods. In terms of teaching content, it is more targeted; in teaching methods, it is more advanced; in teaching team, it is more professional; in teaching setting, it is more practical. Teachers can make full use of various teaching resources to create a better sketch basic teaching environment for students, so that the basic teaching can provide the greatest help for the later professional teaching.

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Research on the development of policy marketing in China: A Literature Review

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Abstract: Policy marketing is a customer-oriented and citizen-value-centered governance concept that runs through the entire policy process. It is an essential tool for building consensus on policies and turning resistance into motivation. This article takes policy marketing as the research object, through a review of relevant Chinese research literature, sorts out the research origin, conceptual system and strategy evolution of policy marketing in China, and reviews the theoretical exploration and practice of policy marketing in China to summarize the current policy marketing Some deficiencies and problems existing in practical applications in China and put forward research prospects. The systematic study of China's policy marketing can help promote public governance and provide experience and reference for the world.

Key Words: Policy Marketing; Literature Review; Public Policy

1.INTRODUCTION

At present, China is in the decisive period of building a moderately prosperous society for all people, and some outstanding problems in governance need to be resolved urgently. In recent years, China has proposed to fight the three major battles of preventing and resolving major risks, precision poverty alleviation, and pollution prevention. Winning the three major battles has important political, economic, social, people's livelihood and world significance for China.

Improving public governance is an important path and means to promote the improvement of the national governance system and the modernization of governance capabilities. It is also the key to coordinating social relations, reconstructing social order, and promoting social progress. Policy marketing is a customer-oriented and citizen-value-centered governance concept that runs through the entire policy process. It is an indispensable tool for building consensus on policies and turning resistance into motivation. Good policy marketing not only promotes policy subjects to improve relevant policies, and policy executors implement relevant policies more actively, but also encourages the public to better understand and recognize policies to achieve policy goals, and contribute to public governance. The overall goal of this article is to conduct a literature review based on the existing literature on policy marketing in China, systematically explain the source, concept, and strategy of policy marketing in China, and combine the theoretical development and practical application of policy marketing in China to summarize current policy marketing There are some problems in the application in China, and a research outlook should be put forward in this regard. In order to achieve this research goal, the following parts of this article are specifically arranged as follows: The second part introduces the research origin of policy marketing in China and the conceptual system of Chinese policy marketing; the third part sorts out domestic policy marketing The theoretical exploration and practical application in China; The forth part summarizes, reviews some of the current deficiencies and problems of policy marketing in China's public governance, and proposes corresponding research prospects.

2.THE ORIGIN OF POLICY MARKETING IN CHINA

Modern marketing concepts can be traced back to the AMA's definition of marketing in 1960: Marketing is the performance of commercial activities that guide the flow of goods and services from producers to consumers or users[1]. The American marketing master Kotler's understanding of marketing is a microcosm of the continuous expansion of the concept of marketing. His understanding of marketing can be divided into three periods. In the first stage, Kotler believes that marketing is essentially an activity related to a business entity composed of market transactions. In the second stage, Kotler and Lecy clarified a broader definition of marketing, that is, the conceptual field of marketing has been greatly expanded. Marketing, as a common social activity, far exceeds the scope of commercial activities[2]. In the third stage, Kotler has a deeper understanding of the concept of marketing. He believes that marketing is not only suitable for all organizations in the relationship with customers, but also suitable for all organizations in the relationship with all the public. At present, this marketing concept of marketing master Kotler has become the dominant paradigm of marketing discipline. A survey conducted by Nickels on marketing experts shows that more than 90% of people accept the idea that the marketing concept should be expanded to include schools, charities, politicians and other non-commercial activities, and the marketing concept should be expanded to meet social needs[3] . With the expansion of marketing concepts, at the beginning of the 21st century, AMA redefines marketing as marketing activities, institutional settings and process creation, communication, delivery and exchange of products that are valuable to customers, customers, partners and the entire society.

Since the 1960s, social contradictions such as public safety and environmental pollution that have prevailed in Western countries have been increasingly exposed, and reform has become an urgent requirement. The new public management movement is rapidly emerging in developed countries, advocating the integration and mutual learning of corporate management concepts and public sector management concepts, emphasizing the service mission

and public responsibilities of the public sector, and at the same time adopting effective corporate management strategies and methods to improve efficiency . The New Public Management Movement introduced the methods and technologies of corporate management, regarded the public as customers in the market, believed that the government should also emphasize the concept of "customer first" and take public satisfaction as its goal. Western governments have learned from the management strategies and methods of enterprises, one of which is related theories and techniques of marketing. As a result, the expansion of the marketing concept and the convergence of the new public management movement eventually led to the birth of policy marketing.

Policy marketing first became popular in Taiwan. Scholars in Taiwan such as Su, Wu and others have made pioneering contributions to the development of policy marketing theories. They have given mainland scholars great inspiration and reference experience. All aspects of definition, strategy application, and theoretical models have made considerable contributions. Taiwan's theory and practical experience have great reference significance for policy management and policy innovation in the mainland. Compared with government marketing, political marketing and public sector marketing, the research on policy marketing in Mainland China has attracted a lot of attention from the academic circles. As the concept of government shifts from "management" to "governance" and the in-depth expansion of public policy research, policy Marketing has gradually entered the attention of researchers.

The definition of policy marketing by comprehensive scholars can be subdivided into three categories: The first category, from the perspective of instrumentalism, believes that policy marketing is a way of promoting better implementation of policies through marketing tools or marketing techniques. The second category starts from the perspective of policy communication and regards policy marketing as a process of policy communication. The third category starts from the perspective of governance concepts, and believes that policy marketing is customer-oriented and citizen value-centered governance concepts that run through the entire policy process.

From the perspective of instrumentalism, scholars such as Lu, Chen, Zhang and other scholars define policy marketing as the use of policy marketing strategy tools to complete value exchange relationships with public customers to generate a policy consensus and win public acceptance and support for the process of a public policy[4][5]. Xie pointed out that public policy marketing refers to the process in which the government uses marketing tools to "sell" policy products or policy issues to policy consumers as customers and policy supply assistants as partners in exchange for support[6]. Tan believes that policy marketing is a process in which the government-dominated public sector uses marketing techniques to promote the "matching" of public policies and social needs[7]. From the perspective of instrumentalism, policy marketing emphasizes the concept of exchange. The government provides policy products, obtains public support through marketing, and achieves mutual matching of needs. This is also the definition of policy marketing that is widely accepted and recognized by the academic community.

From the perspective of policy communication, Zhou believes that policy marketing is about applying marketing concepts to the formulation and dissemination of "public policies" in the public sector to ensure that the target recipients have a correct understanding of the policies issued and the process of behavior acceptance[8]. Qiu defines policy marketing as the careful and comprehensive design of policies and the use of marketing methods to make the public accept and implement them. This is a process of policy publicity[9]. Tian directly pointed out that the use of standardized academic terms for policy propaganda is policy marketing.[10] The inconsistency between the policy dissemination perspective and the first type of view is that policy marketing is considered to be a process of policy publicity and promotion. This view focuses more on how policies can be promoted. Marketing tools and strategies are only a choice of policy dissemination. There is no over-emphasis on marketing tools and strategies.

From the perspective of governance concepts, policy marketing puts more emphasis on public value, and on this basis, it uses marketing techniques to achieve policy goals. Su believes that policy marketing is a concept with "citizen value" as the core, and emphasizes "citizen value" as the basis to realize public governance[11]. Zhang's public policy marketing is a customer (public)-oriented management philosophy and method system, which treats the public as customers, takes customer demand as the starting point, takes customer value as the goal, takes customer satisfaction as the measurement standard, and adopts creative Communicate and deliver public services to continuously meet customer needs to achieve management goals[12]. Ruan believes that policy marketing is a management concept that takes policy as the center and policy audience as the orientation, identifying, predicting and meeting the needs of policy audiences and social public interests and running through the entire policy process[13]. Under this type of perspective, policy marketing transforms the customer orientation in marketing into the public orientation of public policies, and emphasizes the public value of policies to meet public needs.

Based on the above-mentioned domestic scholars' definition of policy marketing, this article believes that policy marketing has the following characteristics: First, policy marketing is a policy tool that uses marketing strategies and techniques; secondly, it is policy communication that gains public recognition and understanding. And the propaganda process; finally, policy marketing as a governance concept runs through the entire policy process. Regarding policy marketing as a governance philosophy is still rare, but this type of definition involves the transformation of the government's philosophy from management to governance. It can give full play to the power of multiple

subjects with the government as the core, and achieve coordinated governance by the government, the public and other social forces. The realization of policy goals and public interests is particularly important.

3.EVOLUTION OF POLICY MARKETING THEORY AND PRACTICE

Most of the research on policy marketing in China continues to extend along the two paths of theoretical development and practical application. The former focuses on the interpretation of theoretical origins, development and evolution, ought to be fields and practical limitations; the latter adheres to the problem-oriented approach and proposes measures for a certain public governance issue from the perspective of policy marketing. Foreign research on policy marketing has formed a relatively mature research paradigm, and it has also been further developed in Taiwan, but there are few scholars in mainland China involved in the construction of policy marketing models. Chinese public governance has its own specific conditions. And the problems faced, we need to combine specific reality to build a policy marketing model with Chinese characteristics.

From the perspective of theoretical development path, Zhang believes that one of the theoretical sources of policy marketing is that the theory of citizen governance advocates citizen-centered and emphasizes citizen participation. At the same time, it is pointed out that the current domestic related research still lacks a complete summary of the policy marketing conceptual system and theoretical framework, and lacks in-depth research on the specific issues and key links in the public policy process[12]. Tan discussed the origins, concepts, models, and limitations of policy marketing, and believed that attention should be paid to the analysis of China's public policy marketing environment during the transition period, to construct a policy marketing mechanism with Chinese characteristics, and to try to apply "policy marketing" to daily policies Management practice is of great significance to solving public policy problems such as "neighbor avoidance conflicts". In addition, policy marketing is also highly appropriate in mainland China. However, theoretical research is seriously lagging behind practice, and relevant theoretical research should be emphasized to build a local characteristic Policy marketing theory system[14]. Starting from the institutional constraints and adjustments of policy marketing, Xie pointed out the lack of discussion on basic issues such as the policy behavior logic and process of public policy marketing, applicable government systems and political mechanisms, and advocated the use of multiple public policy marketing channels. Emphasize the diversity of expressions and the multi-layered nature of participants[6]. From the above-mentioned scholars' theoretical research on policy marketing, it can be found that there are relatively few localization studies on policy marketing, especially the lack of construction of policy marketing models.

From the perspective of practical application path, Liu found that through the study of successful and failed cases of white pollution control, it is necessary to give full play to the important forces of the public and non-governmental organizations. The scholar believes that the environment of policy marketing is not monopolized. In addition to the government, there are also policy recommendations. And supervisors, such as various interest groups, democratic parties, etc[15]. Chen and Zhang took Guangzhou's garbage classification policy as an example. They pointed out that in some areas, local governments have initially possessed the awareness and motivation of policy marketing, trying to promote the implementation of public policies through interaction with various stakeholders, and proposed political elites. The administrative system, grassroots leaders and ordinary people can and how to reach a consensus around a certain policy interaction and form an important thinking about the implementation of the joint force[5]. He applies policy marketing to urban neighbor avoidance conflict management. From the perspective of decision-making mechanism, it is proposed to establish negotiation and dialogue mechanism, conduct open negotiation and dialogue with stakeholders of NIMBY project, promote negotiation and dialogue among stakeholders of NIMBY project, such as decision-making party, construction party, operator, media, non-profit third party and local public, so as to ensure the comprehensiveness and representativeness of participants, and realize the openness and openness of urban NIMBY project decision-making transparency[16]. Wang, Hao and Huang investigated the impact of diversified targeted poverty alleviation policy marketing and policy implementation on the policy satisfaction of farmers in poverty-stricken areas, and proposed that the participation efficiency of social forces such as the media, social organizations, and enterprises should be strengthened[17]. Table 3-1 is an excerpt selected by the author from CNKI's research on the application of policy marketing in China in the past ten years. From the excerpts, it can be found that in the practice of public governance in China, policy marketing is often due to the lack of effective communication between the government and the public. Inadequate policy propaganda and the lack of government governance concepts. When countermeasures are put forward, it emphasizes the participation of the public and other social forces and the initiative of various subjects to participate in public governance.

From the perspective of theoretical research, there is still relatively little research on the localization of policy marketing, especially the lack of a theoretical framework for policy marketing. To grasp the core of policy marketing and maximize the value of policy marketing, it is necessary to build policies with local characteristics. Marketing theory system and research framework. From the perspective of practical application, policy marketing is mainly used to solve public policy problems similar to neighboring avoidance incidents. Research has shown that the major reasons for policy failure are the government's one-way management thinking, unsound policy promotion mechanisms, and lack of public and social power. Participation and other factors, when proposing corresponding countermeasures, basically involve

expanding public participation and strengthening the participation effectiveness of social forces such as communities, social organizations, and enterprises. Due to the lack of policy marketing model construction in theory, policy marketing in practice requires the participation of the government, the public and other social forces.

Scholar	Areas covered	Specific application	Journal name	Time
Tian	Classification of domestic waste	Garbage classification of Dongyang Township, Jiangxi Province and garbage classification of Taipei City in Taiwan	Journal of Gansu University of administration	2020
Wang etc.	Satisfaction of targeted poverty alleviation policy	The impact of targeted poverty alleviation policy marketing and policy implementation on poor farmers' policy satisfaction	Journal of Guizhou University of Finance and Economics	2019
Yang and Li	environmental action	Study on the governance and resolution of environmental resistance	Journal of Gansu University of administration	2019
He	Urban NIMBY conflict	The feasibility, necessity, opportunity and challenge of policy marketing applied to urban NIMBY conflict	Social Sciences in Inner Mongolia (Chinese version)	2018
Tan and Yan	Garbage treatment	"Garbage charging with bags" in Taipei and "waste classification reduction" in Shenzhen	Nanjing Social Sciences	2016
Chen and Zhang	refuse classification	Guangzhou garbage classification policy	Public Administration Review	2015
Zheng and Lei	Failure of policy communication	The policy event of "one vote system" in Fenghuang ancient city	Hunan Social Sciences	2015
Xu and Zhu	Governance of NIMBY conflict	Trust dilemma, participation dilemma, development dilemma and causes of NIMBY conflict governance	Theoretical exploration	2013

table3-1 An excerpt of the research on the application of policy marketing in China in recent ten years

4.CONCLUSION

In conclusion, it is urgent to establish a policy marketing theory system with Chinese characteristics. In addition, the existing policy marketing research is out of touch with specific practice to a certain extent. To grasp the core of policy marketing, relevant theories need to be improved. Combining the socialist policy marketing with Chinese characteristics with the specific reality of China, future research can focus on the analysis of the policy marketing process, study the specific strategies of public policy marketing, and formulate targeted marketing tool combinations. Theoretical construction and improvement are mainly the innovation of policy itself, policy propaganda, and policy promotion, and through this, to strive for social understanding, to maximize the fit between policy product supply and demand, in order to achieve the purpose of public governance. At present, China's policy marketing research still lacks systems and tools for evaluating the effects of policy marketing. A large number of studies have focused on how to apply policy marketing to practice, but there is little consideration of its effects. Without relevant evaluation, the effects of policy marketing cannot be evaluated. Evaluate whether or not policy marketing is effective or not. This provides a basis for whether we adopt policy marketing and how to apply policy marketing, which has become the direction of future research. At present, foreign academic circles seem to be open to "non-traditional" methods. Most theory-driven research relies on quantitative methods to accurately capture the phenomenon of interest. Back to China, it is rare to use quantitative methods for policy marketing research. Quantitative analysis requires a large number of practical investigations, field surveys and other methods to collect data. In this process, researchers are encouraged to have a deeper understanding of social issues and thus more targeted applications.

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Research and Practice of Precision Teaching of Computer Basic Courses Based on Big Data

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Abstract: The basic computer courses in colleges and universities are large-scale teaching. The main difficulty faced by large-scale teaching is to teach students in accordance with their aptitude, that is, to implement personalized teaching for students and it is difficult to achieve precise teaching. However, the emergence of big data technology provides a guarantee for the implementation of precise teaching in large classes. Therefore, this article explores the use of modern teaching methods to collect teaching big data to achieve precise teaching of basic computer courses.

Keywords: Big Data; Basic Computer Courses; Precision Teaching

1. ANALYSIS OF THE TEACHING STATUS OF BASIC COMPUTER COURSES IN COLLEGES AND UNIVERSITIES

The implementation of personalized precision teaching is an effective means to improve teaching quality and teaching efficiency. The precision teaching model originated in the 1960s. It is a teaching method summarized by American scholar Ogden Linsley based on Skinner's behavioral theory. The purpose of designing this teaching method is to design different goals for different groups of people, select different teaching content, and track students' learning performance and learning effects through the measurement process. The emergence of big data technology has ushered in development opportunities for precision teaching.

The basic computer course is a general education course for all majors in the school. The purpose is to enable students to master basic computer knowledge and operating skills and computer programming ability. However, due to various subjective and objective reasons, various problems have appeared in the teaching of basic computer courses in colleges and universities. The first is that the basic level of students is not complete, and students with good basic knowledge can quickly understand the content of the teacher's explanation, but it does not rule out the situation that some students are not even familiar with basic computer applications. Due to individual differences among students, the gains of different students are necessarily not equal. The second is that the class capacity is large, and it is difficult for teachers to take care of all students in a timely manner, and it is even impossible to grasp the learning situation of students in time. Moreover, students of different majors receive the same basic computer education, which cannot meet the diverse needs. Third, the teaching hours are short. Colleges and universities often attach importance to professional courses and ignore basic computer courses when formulating teaching plans. Due to too few school hours, teachers can only complete the teaching and students' practical ability is not strong. Therefore, it is necessary to change the traditional teaching methods and assessment methods, and implement personalized and precise teaching [1].

2 FEASIBILITY ANALYSIS OF PRECISE TEACHING IMPLEMENTATION OF BASIC COMPUTER COURSES IN COLLEGES AND UNIVERSITIES

2.1 Feasibility analysis of teaching technology

The application of big data technology has promoted the transformation of traditional teaching models, and the innovation of college education concepts has brought revolutionary changes to college classroom teaching and has become one of the important thrusts of college teaching reform. At the same time, it makes the collection, application and analysis of various dynamic teaching data more convenient. By analyzing massive amounts of big data, teachers can obtain classroom dynamic data in a timely and comprehensive manner, including students' learning status and homework completion, so that the implementation and application of personalized precision teaching can become more realistic and effective.

2.2 Feasibility analysis of teaching process management

The implementation of precision teaching requires the collection and analysis of learner-related data, such as student learning behavior, classroom performance, homework completion, test results, etc., with the help of big data application systems to comprehensively and effectively collect and analyze teaching process data. Help teachers discover students' learning needs, learning behaviors, learning rules and learning effects, thereby formulating personalized teaching goals, accurately implementing teaching strategies, and achieving the purpose of improving students' academic performance. The big data teaching platform can also help teachers build teaching resource libraries such as courseware library and exercise library. Therefore, big data technology is an important technical guarantee for the implementation of personalized and precise teaching. With the development of social science and technology and the advent of the era of big data, the reform of teaching concepts, teaching methods, teaching content, and teaching evaluation has been promoted, which has provided a guarantee for improving the effects of education and teaching and carrying out personalized and precise teaching.

2.3 Feasibility analysis of teaching subjects

Teachers and students are the two main subjects of

teaching implementation. Before big data technology, teachers of basic computer courses in colleges and universities were mostly based on teaching experience. They could not accurately assess the learning situation and needs of each student, and it was difficult to grasp the progress and depth of teaching. The teaching quality is not high. In the precision teaching model supported by big data, teachers can understand students' interests and demands based on the frequency of students' access to digital teaching resources. According to students' needs, teachers can accurately design teaching plans, teaching goals, and teaching content to implement teaching. Accurately design practical cases and test question banks to train and evaluate students. Students can optimize their own learning plan based on their own foundation and shortcomings, and can also analyze their own learning data and learning evaluations to accurately select their own learning content.

3 IMPLEMENT PRECISE TEACHING PROCESS DESIGN

The precision teaching process mainly includes the steps of accurately determining teaching goals, accurately mastering students' academic conditions, accurately designing teaching activities, accurately implementing classroom teaching, and accurate evaluation [2].

3.1 Accurately determine teaching goals

The teaching goal is the core of classroom teaching and has a directional role in teaching activities. Modern teaching theory and practice have repeatedly proved that effective teaching must first have effective teaching goals. The teaching goal is the degree to which students should be cognizant of the corresponding knowledge points set according to the requirements of the course syllabus. These knowledge points can be "basic concepts", "basic theories" or "basic skills", etc.; the set cognitive level can be "understanding", "understanding" or "mastering", etc. Precise teaching requires that the teaching goals set are more targeted, which depends on the evaluation results formed by the use of technical means in a teaching process, and revises the original teaching goals to make them more clear [3].

3.2 Accurately master students' academic conditions

Accurately mastering the students' academic conditions is the prerequisite for implementing precise teaching. Teachers should accurately grasp the basic information of students (subject background, basic knowledge, professional structure, internship experience, cultural background, etc.); then make preliminary judgments on students' learning behavior (habits, preferences, interests) based on the basic information; The mental state, activity level, hobbies, knowledge structure, ability level, outstanding advantages, shortcomings and other aspects of the student groups in each teaching class are objectively

identified, which lays the foundation for the implementation of precise and personalized teaching.

3.3 Accurately design teaching activities

Before teaching, teachers should sort out and process teaching knowledge and design teaching links. Use the big data platform to integrate traditional textbook content with online teaching resources, and design whether classroom teaching adopts flipped classroom, classroom questioning, interactive discussion, or inquiry teaching activities. The design of classroom teaching links supported by big data technology is more conducive to attracting the attention of students and activating the classroom atmosphere [4].

3.4 Precise implementation of classroom teaching

Teachers use Internet technology such as Rain Classroom to push preview courseware before class. During the class, students are motivated to participate in classroom teaching activities through classroom answering, voting, and barrage, and can timely grasp the students' grasp of key and difficult knowledge and arrange after class The homework tests the content of this lesson. According to the classroom teaching process data, teachers can effectively intervene in the classroom learning behavior of students in time, and truly solve the "pain points" encountered by students in the learning process.

3.5 Accurate evaluation

The implementation of precise evaluation will change the traditional method of examining teaching effects only by examinations and usual homework. The use of big data can realize the examination of the teaching process from multiple angles. Accurate teaching is a test of the whole process of students' learning activities. It uses modern technology to test the whole process of students before, during and after class to test whether students meet teaching requirements and develop good learning habits. Do you have certain creative thinking ability, etc.

4 ACCURATE TEACHING RESULTS UNDER BIG DATA

In recent years, the computer teaching and research section has actively used modern information technology Rain Classroom to carry out curriculum teaching reforms. Through the teaching big data obtained by Rain Classroom, the teaching reform and construction of computer basic courses have gradually appeared. The daily test of the course and the final exam fully implement big data analysis and precise teaching. The author selected the teaching class Accounting Class 1-Accounting Class 10 for practice, Accounting Class 1-Accounting Class 5 taught in accordance with the original teaching model, and Accounting Class 6-Accounting Class 10 was taught in accordance with the precision teaching model. Select the representative end of the period The test scores are data, and the average scores of each module test are shown in Table 1.

Tab.1 Comparison of two teaching modes

class	Operating system	Word	Excel	Ppt	Network	Consolidated results
Accounting Class 1-5	81	72	70	78	85	77
Accounting Class 6-10	85	77	73	80	88	80

It is not difficult to see that the grades of the classes that have adopted the precise teaching model are better than those that follow the original teaching model. Therefore,

it can be concluded that the precision teaching mode of basic computer courses under the big data environment is effective.

5 CONCLUSION

Big data technology is gradually infiltrating into teaching, changing the traditional teaching mode, and affecting students' learning methods and study life. With the increasing demand for individualized development of students, the use of big data technology to implement precision teaching has become a general trend. Precision teaching takes students as the main body, adopts modern information technology, and masters the data of the whole process of classroom teaching, helps teachers to grasp the learning situation of students in time, enriches the teaching activities of teachers, stimulates students' interest in learning, mobilizes students' learning enthusiasm, and improves Classroom teaching effect. At the same time, precision teaching also helps students find their learning shortcomings and adjust their learning methods in time, which is conducive to cultivating students' autonomous learning ability.

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Enumeration for The Young Tableaux of The Shape of Approximate Letter E

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Abstract: Combinatorial counting theory is a basic research direction in combinatorial mathematics, and the enumeration for Standard Yang tableaux is an important research content of combinatorial counting. By using nested order statistics, multiple integral calculation and the properties of combinatorial mathematics, Enumeration for the Young tableaux of the shape of Approximate Digital 3 is studied. The method is to calculate the multiple integral of the nested simplex corresponding to the letter E. In the process of integration, the complex integral is transformed into the third order determinant integral and the number of Standard Yang tableaux is obtained.
Keywords: Standard Yang Tableaux; Combination Count; Order Statistics; Multiple Integral

1. INTRODUCTION

Combination counting is an important branch of combinatorial mathematics Counting of Standard Young tableaux (SYT) is one of the important research contents in combination count. Each row in the standard table is a set of independent, left-to-right, ascending from top to bottom sequential statistics [1] given in the literature. The existing Yang table counting formulas include the Standard Young tableaux (SYT) counting formula given in the literature [2], that is, the famous Hook-length formula, some truncation formulas given in the literature [3-10], ladder type and rectangular SYT counting formula, The hollow SYT counting formula given in the literature.

2.1 Counting Formula of $(m^{2k+3})/(m-1)^k|\{(2,2)\}/(m-1)^k|\{(k+3),2\}$

Lemma2.1.1 [11] Notes N_λ is number of λ SYT-type chart, then

$$N_\lambda = |\lambda|! \int_{S_\lambda} \cdots \int 1 dx_{1,\lambda_1} \cdots dz_{\lambda_d,\lambda_d} \qquad (2.1.1)$$

where S_λ is the nested simplex corresponding to the SYT-type chart of shape λ.

The following young tableaux of shape of $(m^{2k+3})/(m-1)^k|\{(2,2)\}/(m-1)^k|\{(k+3),2\}$ is represented by $(m^{2k+3})/(H_2)$ Make the $N_{(m^{2k+3})/(H_2)}$ to represent the number of the shape of $(m^{2k+3})/(H_2)$.

Known the shape of SYT-type chart of $(m^{2k+3})/(H_2)$ as shown below:

x_1	x_2	$\cdots$	x_t	$\cdots$	x_{m-1}	x_m
t_1						
$\vdots$						

Figure(2.2.1)

Theorem2.1.1:For $m \geq 4, k \geq 0$, the number of standard tableaux of truncated straight shape $(m^{2k+3})/(H_2)$ is:

$$N_{(m^{2k+3})/(H_2)} = (3m + 2k - 1)! I_2$$
$$= (3m + 2k - 1)! \frac{1}{(m-2)!} \frac{1}{(m-3)!} \frac{1}{(m-4)!} (-1)^{m-4}$$
$$\left[\frac{(-1)^{3m-2}(k+2)(m-4)!(2m+k+1)!}{m(m-1)(m+k+2)!(2m+2k+2)!} \right.$$
$$+ \frac{(-1)^{3m-2}(k+2)(m-4)!(2m+k-1)!}{(m-2)(m-1)^2(m+k+1)!(2m+2k)!}$$
$$\left. + \frac{(-1)^{3m-2}(-4m-2mk-3k-k^2-2)(m-4)!(2m+k)!}{m(m-2)(m-1)(m+k+2)!(2m+2k+1)!} \right] (2.1.2)$$

Proof:

Integral region D_3 is:

$$D_3 = \begin{pmatrix} 0 & < & x_1 & < & \cdots & < & x_m \\ & & \wedge & & & & \\ & & t_g & & & & \\ & & \wedge & & \cdots & & \wedge \\ & & \vdots & & & & \\ & & \wedge & & & & \\ & & y_1 & < & \cdots & < & y_m \\ & & \wedge & & & & \\ & & t_h & & & & \\ & & \wedge & & \cdots & & \wedge \\ & & \vdots & & & & \\ & & \wedge & & & & \\ & & z_1 & < & \cdots & < & z_m & < & 1 \end{pmatrix}$$

From the formula (2.1.1) can get

$$N_{(m^{2k+3})/(H_2)} = (3m + 2k - 1)! I_2$$
$$= (3m + 2k - 1)! \int_{D_3} \cdots \int dx_1 \cdots dx_m \, dy_1 \cdots dy_m dz_1 \cdots dz_m dt_1 \cdots dt_{2k}$$
(2.1.3)

The D_3 is the nested simplex corresponding to the shape of young tableaux of $(m^{2k+3})/(H_2)$.

The integral of D_3 of the integral region is equivalent to the integral D_4 of the integral region.

$$D_4 = \begin{pmatrix} 0 & < & x_2 & < & \cdots & < & x_m \\ & & \wedge & & & & \\ & & t_g & & & & \\ & & \wedge & & \wedge & \cdots & \wedge \\ & & \vdots & & & & \\ & & \wedge & & \wedge & & \\ y_1 & < & y_2 & < & \cdots & < & y_m \\ & & \wedge & & & & \\ & & t_h & & & & \\ & & \wedge & & \wedge & \cdots & \wedge \\ & & \vdots & & & & \\ & & \wedge & & & & \\ z_1 & < & z_2 & < & \cdots & < & z_m & < & 1 \end{pmatrix} \quad (g = 1, 2 \cdots k, h = k+1, \cdots 2k)$$

Therefore (2.1.3) can be converted into

$$N_{(m^{2k+3})/(H_2)} = (3m+2k-1)! \, I_2 = (3m+2k-1)! \int_{D_4} \cdots \int dx_2 \cdots dx_m \, dy_1 \cdots dy_m dz_1 \cdots dz_m dt_1 \cdots dt_{2k}$$

(2.1.4)

The D_4 is the nested simplex corresponding to the shape of young tableaux of $(m^{2k+3})/(H_2)$.

$$D_m = \begin{pmatrix} 0 & < & x_2 & < & \cdots & < & x_m \\ & & \wedge & & \wedge & & \wedge \\ y_1 & < & y_2 & < & \cdots & < & y_m \\ & & \wedge & & \wedge & & \wedge \\ z_1 & < & z_2 & < & \cdots & < & z_m & < & 1 \end{pmatrix}$$

First, integrating with respect $t_1 \cdots t_k, t_{k+1} \cdots t_{2k}$, the integral region becomes

$$N_{(m^{2k+3})/(H_2)} = (3m+2k-1)! \, I_2 = (3m+2k-1)! \int_{D_m} \cdots \int \frac{y_1^k}{k!} \frac{(z_1-y_1)^k}{k!} dy_1 dz_1 \times 1 dx_2 \cdots dx_m dy_2 \cdots dy_m dz_1 \cdots dz_m \quad (2.1.5)$$

$$I_2 = \int_{D_m} \cdots \int \frac{y_1^k}{k!} \frac{(z_1-y_1)^k}{k!} dy_1 dz_1 \times 1 dx_2 \cdots dx_m dy_2 \cdots dy_m dz_2 \cdots dz_m \quad (2.1.6)$$

$$J_m = \int_{D_m} \cdots \int dx_2 \cdots dx_m \, dy_2 \cdots dy_m dz_2 \cdots dz_m \quad (2.1.7)$$

$$I_2 = \int_{D_m} \cdots \int \frac{y_1^k}{k!} \frac{(z_1-y_1)^k}{k!} dy_1 dz_1 \times J_m \quad (2.1.8)$$

In the next section, the region of integration

$$\begin{pmatrix} 0 & < & x_2 & & \\ \wedge & & \wedge & & \\ y_1 & < & y_2 & < & y_3 \\ \wedge & & \wedge & & \wedge \\ z_1 & < & z_2 & < & z_3 & < & z_4 & < & 1 \end{pmatrix}$$ is represented by Ω,

The integral of J_m is obtained from (2.2.6), then the integral of I_2 is obtained from (2.1.8), Finally, the number of the young tableaux of the shape of $(m^{2k+3})/(H_2)$ can be calculated from (2.1.5).

For m=4,

$$J_4 = \int_{D_4} \cdots \iiint d\,x_2 dx_3 dx_4 dy_2 \cdots dy_4 dz_2 \cdots dz_4 = \int_{\substack{0 < x_2 < x_3 \\ \wedge \quad \wedge \quad \wedge \\ y_1 < y_2 < y_3 < y_4 \\ \wedge \quad \wedge \quad \wedge \quad \wedge \\ z_1 < z_2 < z_3 < z_4 < 1}} \cdots \iiint \begin{vmatrix} 1 & x_3 \\ 1 & y_4 \end{vmatrix} d\,x_2 dx_3 dy_2 dy_3 dy_4 dz_2 dz_3 dz_4$$

$$= \int_{\Omega} \cdots \iiint \begin{vmatrix} 1 & x_2 & \frac{x_2^2}{2!} \\ 1 & y_3 & \frac{y_3^2}{2!} \\ 1 & z_4 & \frac{z_4^2}{2!} \end{vmatrix} d\,x_2 dy_2 dy_3 dz_2 dz_3 dz_4 = \int_{\Omega} \cdots \iiint \frac{1}{2!}(y_3-x_2)(z_4-x_2)(z_4-y_3) d\,x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

(2.1.9)

For m=5,

$$J_5 = \int_{D_5} \cdots \iiint d\,x_2 \cdots dx_5 dy_2 \cdots dy_5 dz_2 \cdots dz_5$$

$$= \int_{\substack{0 \ < \ x_2 \ < \ x_3 \\ \wedge \quad \wedge \quad \wedge \\ y_1 \ < \ y_2 \ < \ y_3 \ < \ y_4 \\ \wedge \quad \wedge \quad \wedge \quad \wedge \\ z_1 \ < \ z_2 \ < \ z_3 \ < \ z_4 \ < \ z_5 \ < \ 1}} \cdots \iiint \begin{vmatrix} 1 & x_3 & \frac{x_3^2}{2!} \\ 1 & y_4 & \frac{y_4^2}{2!} \\ 1 & z_5 & \frac{z_5^2}{2!} \end{vmatrix} d\, x_2 dx_3 dy_2 dy_3 dy_4 dz_2 \cdots dz_5 = \int_\Omega \cdots \iiint \begin{vmatrix} 1 & x_2 & \frac{x_2^2}{2!} & \frac{x_2^3}{3!} \\ 1 & y_3 & \frac{y_3^2}{2!} & \frac{y_3^3}{3!} \\ 1 & z_4 & \frac{z_4^2}{2!} & \frac{z_4^3}{3!} \\ 1 & 1 & \frac{1}{2!} & \frac{1}{3!} \end{vmatrix} dx_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{3!}\frac{1}{2!} \begin{vmatrix} 1 & x_2 & x_2^2 & x_2^3 \\ 1 & y_3 & y_3^2 & y_3^3 \\ 1 & z_4 & z_4^2 & z_4^3 \\ 1 & 1 & 1 & 1 \end{vmatrix} d\, x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{3!}\frac{1}{2!} \begin{vmatrix} 1 & x_2 - 1 & x_2^2 - x_2 & x_2^3 - x_2^2 \\ 1 & y_3 - 1 & y_3^2 - y_3 & y_3^3 - y_3^2 \\ 1 & z_4 - 1 & z_4^2 - z_4 & z_4^3 - z_4^2 \\ 1 & 0 & 0 & 0 \end{vmatrix} d\, x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{3!}\frac{1}{2!} (-1)^5 (x_2 - 1)(y_3 - 1)(z_4 - 1) \times \begin{vmatrix} 1 & x_2 & x_2^2 \\ 1 & y_3 & y_3^2 \\ 1 & z_4 & z_4^2 \end{vmatrix} dx_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{3!}\frac{1}{2!} (-1)(x_2 - 1)(y_3 - 1)(z_4 - 1)$$
$$\times (y_3 - x_2)(z_4 - x_2)(z_4 - y_3) dx_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

(2.1.10)

For m=6,

$$J_6 = \int_{D_6} \cdots \iiint \frac{(y_1 - x_1)^k}{k!} \frac{(z_1 - y_1)^k}{k!} d\, x_2 \cdots dx_6 dy_2 \cdots dy_6 dz_2 \cdots dz_6$$

$$= \int_{\substack{0 \ < \ x_2 \ < \ x_3 \ < \ x_4 \\ \wedge \quad \wedge \quad \wedge \quad \wedge \\ y_1 \ < \ y_2 \ < \ y_3 \ < \ y_4 \ < \ y_5 \\ \wedge \quad \wedge \quad \wedge \quad \wedge \quad \wedge \\ z_1 \ < \ z_2 \ < \ z_3 \ < \ z_4 \ < \ z_5 \ < \ z_6 \ < \ 1}} \cdots \iiint \begin{vmatrix} 1 & x_4 & \frac{x_4^2}{2!} \\ 1 & y_5 & \frac{y_5^2}{2!} \\ 1 & z_6 & \frac{z_6^2}{2!} \end{vmatrix} dx_2 dx_3 dx_4 dy_2 \cdots dy_5 dz_2 \cdots dz_6$$

$$= \int_{\substack{0 \ < \ x_2 \ < \ x_3 \\ \wedge \quad \wedge \quad \wedge \\ y_1 \ < \ y_2 \ < \ y_3 \ < \ y_4 \\ \wedge \quad \wedge \quad \wedge \quad \wedge \\ z_1 \ < \ z_2 \ < \ z_3 \ < \ z_4 \ < \ z_5 \ < \ 1}} \cdots \iiint \begin{vmatrix} 1 & x_3 & \frac{x_3^2}{2!} & \frac{x_3^3}{3!} \\ 1 & y_4 & \frac{y_4^2}{2!} & \frac{y_4^3}{3!} \\ 1 & z_5 & \frac{z_5^2}{2!} & \frac{z_5^3}{3!} \\ 1 & 1 & \frac{1}{2!} & \frac{1}{3!} \end{vmatrix} dx_2 dx_3 dy_2 dy_3 dy_4 dz_2 \cdots dz_5$$

$$= \int_\Omega \cdots \iiint \begin{vmatrix} 1 & x_2 & \frac{x_2^2}{2!} & \frac{x_2^3}{3!} & \frac{x_2^4}{4!} \\ 1 & y_3 & \frac{y_3^2}{2!} & \frac{y_3^3}{3!} & \frac{y_3^4}{4!} \\ 1 & z_4 & \frac{z_4^2}{2!} & \frac{z_4^3}{3!} & \frac{z_4^4}{4!} \\ 1 & 1 & \frac{1}{2!} & \frac{1}{3!} & \frac{1}{4!} \\ 0 & 1 & 1 & \frac{1}{2!} & \frac{1}{3!} \end{vmatrix} d\, x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!} \begin{vmatrix} 1 & x_2 & x_2^2 & x_2^3 & x_2^4 \\ 1 & y_3 & y_3^2 & y_3^3 & y_3^4 \\ 1 & z_4 & z_4^2 & z_4^3 & z_4^4 \\ 1 & 1 & 1 & 1 & 1 \\ 0 & 1 & 2 & 3 & 4 \end{vmatrix} d\, x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!} \begin{vmatrix} 1 & x_2-1 & x_2^2-x_2 & x_2^3-x_2^2 & x_2^4-x_2^3 \\ 1 & y_3-1 & y_3^2-y_3 & y_3^3-y_3^2 & y_3^4-y_3^3 \\ 1 & z_4-1 & z_4^2-z_4 & z_4^3-z_4^2 & z_4^4-z_4^3 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 1 & 1 & 1 \end{vmatrix} dx_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!}(-1)^5(x_2-1)(y_3-1)(z_4-1)\begin{vmatrix} 1 & x_2 & x_2^2 & x_2^3 \\ 1 & y_3 & y_3^2 & y_3^3 \\ 1 & z_4 & z_4^2 & z_4^3 \\ 1 & 1 & 1 & 1 \end{vmatrix} dx_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!}(-1)^5(x_2-1)(y_3-1)(z_4-1)\begin{vmatrix} 1 & x_2-1 & x_2^2-x_2 & x_2^3-x_2^2 \\ 1 & y_3-1 & y_3^2-y_3 & y_3^3-y_3^2 \\ 1 & z_4-1 & z_4^2-z_4 & z_4^3-z_4^2 \\ 1 & 0 & 0 & 0 \end{vmatrix}$$

$$dx_2 dy_2 dy_3 dz_2 dz_3 dz_4 = \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!}[(-1)^5(x_2-1)(y_3-1)(z_4-1)]^2 \begin{vmatrix} 1 & x_2 & x_2^2 \\ 1 & y_3 & y_3^2 \\ 1 & z_4 & z_4^2 \end{vmatrix} d\,x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^2 \begin{vmatrix} 1 & x_2 & x_2^2 \\ 1 & y_3 & y_3^2 \\ 1 & z_4 & z_4^2 \end{vmatrix} d\,x_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

$$= \int_\Omega \cdots \iiint \frac{1}{4!}\frac{1}{3!}\frac{1}{2!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^2 \\ \times (y_3-x_2)(z_4-x_2)(z_4-y_3)dx_2 dy_2 dy_3 dz_2 dz_3 dz_4$$

(2.1.11)

From(2.1.9), (2.1.10), (2.1.11), the expression for guessing formula J_m

$$J_m = \int_\Omega \cdots \iiint \frac{1}{(m-2)!}\frac{1}{(m-3)!}\frac{1}{(m-4)!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^{m-4} \\ \times (y_3-x_2)(z_4-x_2)(z_4-y_3)dx_2 dy_1 dy_2 dy_3 dz_1 \cdots dz_4$$

(2.1.12)

Proving expression (2.1.12) by mathematical induction

For m=4, 5, 6, the formula (2.2.11) is introduced .

Hypothesis, that is true when m is equal to n-1,

There is $J_{n-1} = \int_\Omega \cdots \iiint \frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^{n-5}$
$$\times (y_3-x_2)(z_4-x_2)(z_4-y_3)dx_2 dy_1 dy_2 dy_3 dz_1 \cdots dz_4$$

(2.1.13)

And for m=n

$$J_n = \int_{\Delta = \begin{pmatrix} 0 & < & x_2 & < & x_3 & & \\ & & \wedge & & \wedge & & \\ y_1 & < & y_2 & < & y_3 & < & y_4 \\ & & \wedge & & \wedge & & \wedge \\ z_1 & < & z_2 & < & z_3 & < & z_4 & < & z_5 & < & 1 \end{pmatrix}} \cdots \iiint \frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}$$
$$\times [(-1)(x_3-1)(y_4-1)(z_5-1)]^{n-5}(y_4-x_3)(z_5-y_3)(z_5-y_4)dx_2 dx_3 dy_1 \cdots dy_4 dz_1 \cdots dz_5$$

(2.1.14)

$$(y_4-x_3)(z_5-x_3)(z_5-y_4) \\ = [(y_4-1)+(1-x_3)][(z_5-1)+(1-x_3)][(z_5-1)+(1-y_4)] \\ = (y_4-1)(z_5-1)^2 - (x_3-1)(z_5-1)^2 + (x_3-1)^2(z_5-1) \\ -(y_4-1)^2(z_5-1) + (y_4-1)^2(x_3-1) - (x_3-1)^2(y_4-1)$$

(2.1.15)

Putting (2.2.14)into(2.2.13), there will be the following formula.

$$J_n = (-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}$$

$$\times \left[\int_\Delta \cdots \iiint (x_3-1)^{n-5}(y_4-1)^{n-4}(z_5-1)^{n-3}\,dx_2 dx_3 dy_1 \cdots dy_4 dz_1 \cdots dz_5 \right.$$

$$+ \int_\Delta \cdots \iiint (x_3-1)^{n-3}(y_4-1)^{n-5}(z_5-1)^{n-4}\,dx_2 dx_3 dy_1 \cdots dy_4 dz_1 \cdots dz_5$$

$$+ \int_\Delta \cdots \iiint (x_3-1)^{n-4}(y_4-1)^{n-3}(z_5-1)^{n-5}\,dx_2 dx_3 dy_1 \cdots dy_4 dz_1 \cdots dz_5$$

$$-\int_\Delta \cdots \iiiint (x_3-1)^{n-4}(y_4-1)^{n-5}(z_5-1)^{n-3}\,dx_2dx_3dy_1\cdots dy_4dz_1\cdots dz_5$$

$$-\int_\Delta \cdots \iiiint (x_3-1)^{n-5}(y_4-1)^{n-3}(z_5-1)^{n-4}\,dx_2dx_3dy_1\cdots dy_4dz_1\cdots dz_5$$

$$-\int_\Delta \cdots \iiiint (x_3-1)^{n-3}(y_4-1)^{n-4}(z_5-1)^{n-5}\,dx_2dx_3dy_1\cdots dy_4dz_1\cdots dz_5$$

(2.1.16)

$$J_1(a,b,c)=\int_\Delta \cdots \iiiint (x_3-1)^{n-a}(y_4-1)^{n-b}(z_5-1)^{n-c}\,dx_2dx_3dy_1\cdots dy_4dz_1\cdots dz_5$$

$$=\int_\Omega \cdots \iiiint \frac{[(y_3-1)^{n-a+1}-(x_2-1)^{n-a+1}]}{(n-a+1)}\frac{[(z_4-1)^{n-b+1}-(y_3-1)^{n-b+1}]}{(n-b+1)}$$

$$\times \frac{[-(z_4-1)^{n-c+1}]}{(n-c+1)}\,dx_2dy_1\cdots dy_3dz_1\cdots dz_4$$

(2.1.17)

Putting(2.1.17)into(2.1.16), there will be the following formula.

$$J_n=(-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}\times J_1(5,4,3)$$

$$+(-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}\times J_1(3,5,4)+(-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}\times J_1(4,3,5)$$

$$-(-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}\times J_1(4,5,3)$$

$$-(-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}\times J_1(5,3,4)$$

$$-(-1)^{n-5}\frac{1}{(n-3)!}\frac{1}{(n-4)!}\frac{1}{(n-5)!}\times J_1(3,4,5)$$

$$=(-1)^{n-4}\frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}$$

$$\times \int_\Omega [(x_2-1)^{n-4}(y_3-1)^{n-3}(z_4-1)^{n-2}]\,dx_2dy_2dy_3dz_2\cdots dz_4+(-1)^{n-4}\frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}$$

$$\times \int_\Omega [(x_2-1)^{n-2}(y_3-1)^{n-4}(z_4-1)^{n-3}]\,dx_2dy_2dy_3dz_2\cdots dz_4+(-1)^{n-4}\frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}$$

$$\times \int_\Omega [(x_2-1)^{n-3}(y_3-1)^{n-2}(z_4-1)^{n-4}]\,dx_2dy_2dy_3dz_2\cdots dz_4-(-1)^{n-4}\frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}$$

$$\times \int_\Omega [(x_2-1)^{n-3}(y_3-1)^{n-4}(z_4-1)^{n-2}]\,dx_2dy_2dy_3dz_2\cdots dz_4-(-1)^{n-4}\frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}$$

$$\times \int_\Omega [(x_2-1)^{n-4}(y_3-1)^{n-2}(z_4-1)^{n-3}]\,dx_2dy_2dy_3dz_2\cdots dz_4-(-1)^{n-4}\frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}$$

$$\times \int_\Omega [(x_2-1)^{n-2}(y_3-1)^{n-3}(z_4-1)^{n-4}]\,dx_2dy_2dy_3dz_2\cdots dz_4$$

$$=\int_\Omega \cdots \iiiint \frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^{n-4}$$

$$\times (y_3-x_2)(z_4-x_2)(z_4-y_3)dx_2dy_2dy_3dz_2\cdots dz_4$$

(2.1.18)

Putting m=n into(2.1.12), there will be the following formula.

$$J_n=\int_\Omega \cdots \iiiint \frac{1}{(n-2)!}\frac{1}{(n-3)!}\frac{1}{(n-4)!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^{n-4}$$

$$\times (y_3-x_2)(z_4-x_2)(z_4-y_3)dx_2dy_2dy_3dz_2\cdots dz_4$$

That is the same thing as formula (2.1.18).So formula (2.1.12) is proved.

$$I_2=\int_{D_m}\cdots \int \frac{y_1^k}{k!}\frac{(z_1-y_1)^k}{k!}\,dy_1dz_1\times J_m$$

$$=\int_\Omega \cdots \iiiint \frac{1}{(m-2)!}\frac{1}{(m-3)!}\frac{1}{(m-4)!}\frac{y_1^k}{k!}\frac{(z_1-y_1)^k}{k!}[(-1)(x_2-1)(y_3-1)(z_4-1)]^{m-4}$$

$$\times (y_3-x_2)(z_4-x_2)(z_4-y_3)dx_1dy_1dy_2dy_3dz_1\cdots dz_4$$

(2.1.19)

$$(y_3-x_2)(z_4-x_2)(z_4-y_3)=[(y_3-1)+(1-x_2)][(z_4-1)+(1-x_2)][(z_4-1)+(1-y_3)]$$

$$=(y_3-1)(z_4-1)^2-(x_2-1)(z_4-1)^2+(x_2-1)^2(z_4-1)$$

$$-(y_3 - 1)^2(z_4 - 1) + (y_3 - 1)^2(x_2 - 1)$$
$$- (x_2 - 1)^2(y_3 - 1)[(x_2 - 1)(y_3 - 1)(z_4 - 1)]^{m-4}(y_3 - x_2)(z_4 - x_2)(z_4 - y_3)$$
$$= (x_2 - 1)^{m-4}(y_3 - 1)^{m-3}(z_4 - 1)^{m-2} + (x_2 - 1)^{m-2}(y_3 - 1)^{m-4}(z_4 - 1)^{m-3}$$
$$+ (x_2 - 1)^{m-3}(y_3 - 1)^{m-2}(z_4 - 1)^{m-4} - (x_2 - 1)^{m-4}(y_3 - 1)^{m-2}(z_4 - 1)^{m-3}$$
$$- (x_2 - 1)^{m-2}(y_3 - 1)^{m-3}(z_4 - 1)^{m-4} - (x_2 - 1)^{m-3}(y_3 - 1)^{m-4}(z_4 - 1)^{m-2}$$

(2.1.20)

Let

$$J_2(a,b,c) = \int_\Omega \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} (x_2 - 1)^{m-a}(y_3 - 1)^{m-b}(z_4 - 1)^{m-c} dx_2 dy_1 dy_2 dy_3 dz_1 \cdots dz_4$$

(2.1.21)

Putting(2.1.21)into(2.1.19), there will be the following formula.

$$I_2 = \frac{1}{(m-2)!} \frac{1}{(m-3)!} \frac{1}{(m-4)!} (-1)^{m-4}$$
$$\times [J_2(4,3,2) + J_2(2,4,3) + J_2(3,2,4) - J_2(4,2,3) - J_2(2,3,4) - J_2(3,4,2)]$$

(2.1.22)

$$J_2(a,b,c) = \int_\Omega \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} (x_2 - 1)^{m-a}(y_3 - 1)^{m-b}(z_4 - 1)^{m-c} dx_2 dy_1 dy_2 dy_3 dz_1 \cdots dz_4$$

$$= \int_{\substack{0 \ < \ y_1 \ < \ y_2 \\ \wedge \quad \wedge \\ z_1 \ < \ z_2 \ < \ z_3 \ < \ 1}} \cdots \iiint (-1) \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \left[\frac{(y_2 - 1)^{m-a+1}}{m-a+1} + \frac{(-1)^{m-a+2}}{m-a+1} \right]$$

$$\times \left[\frac{(z_3 - 1)^{m-b+1}}{m-b+1} - \frac{(y_2 - 1)^{m-b+1}}{m-b+1} \right] \frac{(z_3 - 1)^{m-c+1}}{m-c+1} dy_1 dy_2 dz_1 dz_2 dz_3$$

$$= \int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \times \frac{(-1) \times (y_2 - 1)^{m-a+1}(z_3 - 1)^{2m-b-c+2}}{(m-a+1)(m-b+1)(m-c+1)} dy_1 dy_2 dz_1 dz_2 dz_3$$

$$+ \int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \times \frac{(y_2 - 1)^{2m-a-b+2}(z_3 - 1)^{m-c+1}}{(m-a+1)(m-b+1)(m-c+1)} dy_1 dy_2 dz_1 dz_2 dz_3$$

$$+ \int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \times \frac{(-1)^{m-a+3} \times (z_3 - 1)^{2m-b-c+2}}{(m-a+1)(m-b+1)(m-c+1)} dy_1 dy_2 dz_1 dz_2 dz_3$$

$$+ \int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \times \frac{(-1)^{m-a+2} \times (y_2 - 1)^{m-a+1}(z_3 - 1)^{m-c+1}}{(m-a+1)(m-b+1)(m-c+1)} dy_1 dy_2 dz_1 dz_2 dz_3$$

(2.1.23)

$$J_3(i,j) = \int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} (y_2 - 1)^i(z_3 - 1)^j dy_1 dy_2 dz_1 dz_2 dz_3$$

$$= \iiint_{0<y_1<z_1<z_2<1} \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \left[\frac{(z_2 - 1)^{i+1}}{i+1} - \frac{(y_1 - 1)^{i+1}}{i+1} \right] \left[- \frac{(z_2 - 1)^{j+1}}{j+1} \right] dy_1 dz_1 dz_2$$

$$= \frac{1}{i+1} \times \frac{1}{j+1} \times \iiint_{0<y_1<z_1<z_2<1} \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} [-(z_2 - 1)^{i+j+2} + (y_1 - 1)^{i+1}(z_2 - 1)^{j+1}] dy_1 dz_1 dz_2$$

$$= \frac{1}{i+1} \times \frac{1}{j+1} \times \iiint_{0<y_1<z_1<1} \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \left[\frac{(z_1 - 1)^{i+j+3}}{i+j+3} - (y_1 - 1)^{i+1} \frac{(z_1 - 1)^{j+2}}{j+2} \right] dy_1 dz_1$$

$$= \frac{1}{i+1} \times \frac{1}{j+1}$$

$$\times \iint_{0<y_1<z_1<1} \left[\frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \frac{(z_1 - 1)^{i+j+3}}{i+j+3} dy_1 dz_1 - \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} (y_1 - 1)^{i+1} \frac{(z_1 - 1)^{j+2}}{j+2} \right] dy_1 dz_1$$

$$= \frac{1}{i+1} \times \frac{1}{j+1} \times \int_{0<y_1<1} \frac{(i+j+3)!}{(i+j+k+4)!} (1 - y_1)^{i+j+k+4} \frac{y_1^k}{k!} \frac{(-1)^{i+j+3}}{i+j+3} dy_1$$

$$- \frac{1}{i+1} \times \frac{1}{j+1} \times \int_{0<y_1<1} \frac{(j+2)!}{(j+k+3)!} (1 - y_1)^{i+j+k+4} \frac{y_1^k}{k!} \frac{(-1)^{i+j+3}}{j+2} dy_1$$

$$= \frac{1}{i+1} \times \frac{1}{j+1} \times \left[\frac{(-1)^{i+j+3}(i+j+2)!}{(i+j+2k+5)!} - \frac{(j+1)!}{(j+k+3)!} \frac{(-1)^{i+j+3}(i+j+k+4)!}{(i+j+2k+5)!} \right]$$

(2.1.24)

$$\int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} \times \frac{(-1)^{m-a+3} \times (z_3 - 1)^{2m-b-c+2}}{(m-a+1)(m-b+1)(m-c+1)} dy_1 dy_2 dz_1 dz_2 dz_3$$

$$= \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)} \times \int \cdots \iiint \frac{y_1^k}{k!} \frac{(z_1 - y_1)^k}{k!} (z_3 - 1)^{2m-b-c+2} dy_1 dy_2 dz_1 dz_2 dz_3$$

$$= \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)} \times \iiint_{0<y_1<z_1<z_2<1} \frac{y_1^k}{k!} \frac{(z_1-y_1)^k}{k!} (z_2-y_1) \frac{-(z_2-1)^{2m-b-c+3}}{(2m-b-c+3)} dy_1 dz_1 dz_2$$

$$= \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)(2m-b-c+3)}$$

$$\times \iiint_{0<y_1<z_1<z_2<1} -\frac{y_1^k}{k!} \frac{(z_1-y_1)^k}{k!} [(z_2-1)+(1-y_1)](z_2-1)^{2m-b-c+3} dy_1 dz_1 dz_2$$

$$= \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)(2m-b-c+3)}$$

$$\times \iint_{0<y_1<z_1<1} -\frac{y_1^k}{k!} \frac{(z_1-y_1)^k}{k!} \left[\frac{-(z_1-1)^{2m-b-c+5}}{2m-b-c+5} + \frac{-(1-y_1)(z_1-1)^{2m-b-c+4}}{2m-b-c+4}\right] dy_1 dz_1$$

$$= \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)(2m-b-c+3)} \times$$

$$\left[\int_{0<y_1<1} \frac{(2m-b-c+5)!}{(2m-b-c+k+6)!} \frac{(-1)^{2m-b-c+5}}{(2m-b-c+5)} \frac{y_1^k}{k!} (1-y_1)^{2m-b-c+k+6} dy_1\right.$$

$$\left. + \int_{0<y_1<1} \frac{(2m-b-c+4)!}{(2m-b-c+k+5)!} \frac{(-1)^{2m-b-c+4}}{(2m-b-c+4)} \frac{y_1^k}{k!} (1-y_1)^{2m-b-c+k+6} dy_1\right]$$

$$= \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)(2m-b-c+3)}$$

$$\times \left[\frac{(-1)^{2m-b-c+5}(2m-b-c+4)!}{(2m-b-c+2k+7)!} + \frac{(-1)^{2m-b-c+4}(2m-b-c+k+6)(2m-b-c+3)!}{(2m-b-c+2k+7)!}\right]$$

(2.1.25)

Putting(2.1.24)and(2.1.25)into(2.1.23), there will be the following formula.

$$J_2(a,b,c) = \frac{(-1)}{(m-a+1)(m-b+1)(m-c+1)} J_3(m-a+1, 2m-b-c+2)$$

$$+ \frac{1}{(m-a+1)(m-b+1)(m-c+1)} J_3(2m-a-b+2, m-c+1)$$

$$+ \frac{(-1)^{m-a+3}}{(m-a+1)(m-b+1)(m-c+1)(2m-b-c+3)} \times \left[\frac{(-1)^{2m-b-c+5}(2m-b-c+4)!}{(2m-b-c+2k+7)!}\right.$$

$$+ \left.\frac{(-1)^{2m-b-c+4}(2m-b-c+k+6)(2m-b-c+3)!}{(2m-b-c+2k+7)!}\right]$$

$$+ \frac{(-1)^{m-a+2}}{(m-a+1)(m-b+1)(m-c+1)} J_3(m-b+1, m-c+1)$$

(2.1.26)

Putting(2.1.26)into(2.1.22), there will be the following formula.

$$I_2 = \frac{1}{(m-2)!} \frac{1}{(m-3)!} \frac{1}{(m-4)!} (-1)^{m-4} \times$$

$$[J_2(4,3,2) + J_2(2,4,3) + J_2(3,2,4) - J_2(4,2,3) - J_2(2,3,4) - J_2(3,4,2)]$$

$$= \frac{1}{(m-2)!} \frac{1}{(m-3)!} \frac{1}{(m-4)!} (-1)^{m-4} \times \left[\frac{(-1)^{3m-2}(k+2)(m-4)!(2m+k+1)!}{m(m-1)(m+k+2)!(2m+2k+2)!}\right.$$

$$+ \frac{(-1)^{3m-2}(k+2)(m-4)!(2m+k-1)!}{(m-2)(m-1)^2(m+k+1)!(2m+2k)!} + \left.\frac{(-1)^{3m-2}(-4m-2mk-3k-k^2-2)(m-4)!(2m+k)!}{m(m-2)(m-1)(m+k+2)!(2m+2k+1)!}\right]$$

(2.1.27)

Putting(2.1.27)into(2.1.5), there will be the following formula.

$$N_{(m^{2k+3})/(H_2)} = (3m+2k-1)! I_2$$

$$= (3m+2k-1)! \frac{1}{(m-2)!} \frac{1}{(m-3)!} \frac{1}{(m-4)!} (-1)^{m-4} \times \left[\frac{(-1)^{3m-2}(k+2)(m-4)!(2m+k+1)!}{m(m-1)(m+k+2)!(2m+2k+2)!}\right.$$

$$+ \frac{(-1)^{3m-2}(k+2)(m-4)!(2m+k-1)!}{(m-2)(m-1)^2(m+k+1)!(2m+2k)!} + \left.\frac{(-1)^{3m-2}(-4m-2mk-3k-k^2-2)(m-4)!(2m+k)!}{m(m-2)(m-1)(m+k+2)!(2m+2k+1)!}\right]$$

(2.1.28)

The proof of Theorem2.1.1 is complete.

2. CONCLUSION

In this paper, the nested order statistics model is constructed, and the determinant integral is used to solve the Yang tableaux counting problem of approximate digital type 3, on the basis of which the Yang tableaux counting problem of digital type 9 can be solved.

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Explore the Rural Revitalization Strategy Under the Revitalization of Tourism Culture to Revitalize the Rural Path

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Abstract: In this paper, to understand the rural revitalization strategy of the relevant policy content, rural revitalization strategy and Tourism Culture Revitalization of rural ways, we can find the advantages and obstacles in the development of rural tourism culture, and put forward the rural tourism culture to promote the realization of the path of rural economic development, the formation of Chinese characteristics of rural tourism culture.
Key Words: Rural Revitalization; Strategic Analysis; Tourism Culture; Path

1.INTRODUCTION

As is known to all, the current rural tourism industry in China has been growing, making the rural economic situation improved, at the same time, part of the rural population to solve the employment problem. In the process of pursuing economic benefits, people also need to incorporate cultural factors into the current rural revitalization strategy, develop tourism culture, and unswervingly reform and innovate the rural tourism economy, so that the rural economy can form a special industrial chain, with certain rural characteristics. Promote the development of rural economy on the basis of tourism culture. Therefore, it is necessary to understand the background of the rural revitalization strategy, which will help to find the opportunity for the development of tourism culture, and to find the advantages and obstacles of the development of tourism culture, so as to better propose the realization path, promoting the sustainable development of rural tourism

1.1 Understand the strategic background of rural revitalization

At the current party meeting, the strategy of rural revitalization was put forward. Only by effectively solving the problem of agricultural energy can we achieve social and economic stability. In order to give priority to the development of rural agriculture, we must integrate urban and rural areas in accordance with the general requirements, establish relevant development mechanisms so that agricultural and rural areas can realize modernization, and have a profound understanding of China's national conditions, grasp the characteristics of rural development, explore the development of the law of modernization, better make up for the obstacles in the process of agricultural development. At the same time, the work of agriculture, rural areas and farmers put forward new goals, effective strategic deployment.

1.2 Opportunities for Rural Tourism Culture Development

Supported by the strategy of Rural Revitalization, this paper discusses the cultural path of rural tourism, and in order to understand the opportunity of its development, rural areas can make use of their unique resources to carry out continuous excavation, so that the rural tourism culture can have more characteristics to develop. At the same time, the development of rural tourism culture can promote the development of rural economy, make the strategy of rural revitalization and the integration of Tourism Culture, and provide certain policy support. However, the current rural problems are still a factor restricting the realization of the Xiaokang. In the process of developing rural tourism culture, people can make use of the power of nature to lay a foundation for the future development of rural tourism. [1]

2 ADVANTAGES AND OBSTACLES OF TOURISM CULTURE DEVELOPMENT UNDER THE STRATEGY OF RURAL REVITALIZATION

2.1 The advantages of the development of rural tourism culture

Business model innovation. Under the guidance of the rural revitalization strategy, it is necessary to perfect the agricultural service system and sum up the development factors involved in the tourism industry. For example, because people living in cities are under great pressure, the pace of life is faster, and the quality of their living environment is lower, which will make people's psychological satisfaction drop. Therefore, the development of rural tourism has become a kind of tourism model that people are more inclined to, no air pollution, away from the hustle and bustle of the city, can carry out the release of inner pressure.

Less resource consumption and less cost input. In the process of developing tourism culture industry, less resources can be consumed, the cost of input is lower, and higher economic returns can be obtained. At the same time, the utilization of the characteristic resources of rural areas can form a chain of tourism industry, to promote the formation of products with rural characteristics, to achieve the improvement of the living standards of farmers, at the same time, can lead to the solution of local labor issues, enrich the cultural life of local people, create economic benefits, and form a social impact. [2]

2.2 Obstacles to the development of rural tourism culture

Lack of a sound management system. As the current rural tourism industry is in the initial stage of development, the lack of a sound management system. At the same time, farmers do not have enough theory and knowledge, their cultural attainments are generally low, they occupy public areas, they do not clean up the environment, there will be

problems of environmental destruction, and eventually, will cause the rural tourism culture industry the overall influence to reduce.

There is a problem of over-exploitation and utilization of resources. In the current development of rural tourism, it is necessary to pay attention to the triple promotion of economic, ecological and social benefits. However, in the current investigation process, it is found that some people over-exploit in the process of development, reduce the efficiency of resource utilization, lack of financial support, no certain attention to talent cultivation and technology introduction. Only focus on short-term economic benefits, but ignored the protection of the ecological environment, destroy some of the original rural features, resulting in irreparable losses.

The form of rural tourism is too single. At that time, the rural tourism culture lacks certain characteristics, which makes the development of rural tourism in the direction of low-end development, at the same time, by some environmental impact, will make the lack of innovation. The development of tourism forms too single, most of the same tourism activities, will ignore the integration of its cultural characteristics. For the regional resources and markets are not fully used, will repeat the construction of the lack of standardized tourism management effect, so the establishment of tourism governance system can increase support.

3 ANALYSIS ON THE PATH OF REVITALIZING RURAL AREAS WITH TOURISM CULTURE UNDER THE STRATEGY OF RURAL REVITALIZATION

3.1 To promote the improvement of rural tourism governance system, strengthen the support and funding of various departments

First of all, in the process of rural economic development, the integration of tourism culture, to be able to formulate relevant systems and regulations, effective management of rural tourism management, improve the overall quality of rural tourism culture. For example, people should carry on the effective supervision and the reasonable arrangement to the relevant farmers, so that they can develop the rural tourism industry under the guidance of certain regulations. Secondly, the relevant government agencies should be able to make villagers form correct cognition and attach more importance to rural tourism culture; in terms of funds, they should increase support and build public facilities, such as parking lots and rest rooms, farmers are encouraged to use the network information platform to promote tourism products and enhance the visibility and influence of tourism services. In addition, the Tourism Department should make full use of its advantages, make a perfect plan, and develop the tourism project on the basis of the infrastructure.

3.2 Strengthening the training of talents and promoting the enrichment of human resources

In the process of exploring the way to rejuvenate the rural tourism culture, we should introduce professional talents to publicize the tourism culture and train the professionals regularly so that they can improve their service ability. In particular, some farmers who are actively involved in this

process are generally of low quality and need to be able to raise their tourism culture and service awareness and develop training programmes tailored to the specific circumstances of each job, enable the farmer to obtain the income truly in the village traveling industry. Secondly, the cultivation of professional personnel, to improve the overall quality, pay more attention to the mastery of service skills, the concept of its transformation can build a civilized consciousness. At the same time, under the influence of the relevant departments, can play their own initiative and actively lead the development of rural tourism culture. [3]

3.3 To promote the rational use of rural resources, the development of related business activities

In the process of the construction of rural tourism culture, it is necessary to make rational use of villages and resources, to improve the efficiency of enterprises in developing and managing effectively, so that the most traditional rural culture can be preserved, building a distinctive rural culture. Especially in view of the countryside cultural ecology, must carry on the related protection, carries on the development to the local history culture and the folk custom. Secondly, the environment of some natural scenic spots should be monitored and managed to avoid the destruction of the environment, so that rural resources can be sustainable development. For example, in the process of tourism activities, if the lack of management, it will lead to more and more intense conflict between human and ecological environment, will not only lead to the obscenity of resources and environmental resources will also decline. If people strengthen management, it can promote the economic development of rural areas, but also can integrate cultural and other factors, better balance the relationship between human and ecological environment, the full use of resources for rational development.

4 CONCLUSION

In the context of the rural revitalization strategy, in the process of analyzing the rural path of tourism culture revitalization, people should be able to develop various forms of tourism culture, form an industrial chain, and make rational use of rural resources, development and operation to enhance its effect. At the same time, the cultivation of professional talents can enrich human resources, guide farmers to establish tourism culture and service awareness, improve the overall quality.

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How to Strengthen the Construction of Soft Environment Supervisor Team

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Abstract: The team of soft environment supervisors is a social decentralized organization based on the optimization of business environment. It is selected and employed by local business environment construction organizations to assist in completing some tasks of optimizing business environment. How to strengthen the management of soft environment supervisors and make them play a greater role in optimizing the construction of business environment is an important topic worthy of in-depth study. In this paper, based on the research of *Baicheng City Supervisor Team Construction and Management Research under the Background of Optimizing Business Environment*, the effective methods to strengthen the construction of soft environment supervisor team are briefly discussed.
Key words: Optimize Business Environment; Soft Environment; Supervisor Team Construction

1. INTRODUCTION

In June 2016, in order to thoroughly implement the important speech of general secretary and the important instructions on soft environment construction, the Jilin Provincial Party Committee and the Jilin Provincial People's Government issued the *Opinions on Further Strengthening the Soft Environment for Economic Development*, guiding all localities and departments around the province to focus on the overall goal of "great service upgrading, building zero interference and developing barrier free". Efforts should be made to create an open and transparent government environment, an efficient and convenient service environment, a healthy and orderly market environment, a fair and just legal environment, a talent environment for gathering talents, and an honest and trustworthy social environment, so as to create a good investment and business environment for Jilin's high-quality economic development. Under the guidance of the provincial soft environment office, the team of soft environment supervisors has also been established and completed, which has played an important role in the work. How to further strengthen the management of soft environment supervisors has always been an important issue in the soft environment construction work institutions of the whole province. Combined with the actual work and project research, the author talks about his superficial opinions.

2. ANALYSIS ON THE CURRENT SITUATION OF SOFT ENVIRONMENT SUPERVISOR TEAM CONSTRUCTION IN BAICHENG CITY

In recent years, according to the requirements of relevant documents, Jilin Province has comprehensively strengthened the construction of soft environment team. Up to now, nearly 700 supervisors and special supervisors have been employed to directly or indirectly participate in the optimization of local business environment construction and achieved good results. After summarizing the construction and management of soft environment supervisors in Jilin Province, the soft environment supervisors need to strengthen the management from four aspects.

2.1 Appointment management of soft environment supervisors

Soft environment supervisor is a loose social organization based on further strengthening the soft environment construction of local economic development. Its composition is relatively complex. In order to give full play to its democratic supervision role and better serve the local economic development, we must pay attention to the quality of the selection and appointment.

2.1.1 Selection conditions

The selection and appointment of soft environment supervisors should be based on the principle of "reasonable structure, diverse personnel, appropriate tilt, open and transparent", adhere to the principle of caring about the soft environment construction of local economic development, and select those who volunteer to participate in the soft environment supervision work are honest and trustworthy, have a clear distinction between right and wrong, abide by discipline and law, be familiar with the policies and regulations related to social management and economic operation and the system requirements of soft environment construction, dare to seriously supervise and actively put forward opinions and suggestions.

2.1.2 Selection procedure.

In general, the selection and appointment of soft environment supervisors should be carried out according to the procedures of voluntary application, assessment and recommendation of the unit, and review and appointment by local soft environment construction organization. The special supervisor shall be examined and appointed by the municipal (prefecture) level soft environment construction work organization. The term of appointment of supervisors and special supervisors is generally two years.

2.1.3 Renewal and dismissal.

After the expiration of the term of appointment of the soft environment supervisor, the local soft environment construction work organization shall assess and score the performance of the soft environment supervisor during the employment period, and give priority to the supervisor with strong sense of responsibility, conscientious performance and outstanding performance; if the supervisor is not renewed after the expiration of the term, he will be naturally dismissed.

2.2 Discipline management of soft environment

supervisor

The team of soft environment supervisors is a social organization with relatively large number, scattered in all walks of life, flexible in supervision activities, and responsible for the supervision responsibility of local soft environment construction. It should not only be given certain powers, but also have certain restrictions, so the management is relatively difficult. The following requirements should be clearly put forward in the work:

(1) It is not allowed to seek illegitimate benefits in disguise when exercising power and performing obligations.

(2) To abide by the law and discipline, and be honest and self disciplined; shall not accept any invitation, gift, negotiable securities or entertainment activities related to the supervisor's identity.

(3) There is no right to investigate, inspect and handle soft issues or cases.

(4) To abide by the confidentiality system, and do not disclose the problem of proliferation report without permission.

(5) To timely criticize and educate the supervisors who violate the regulations. If the circumstances are serious, they can be admonished or even removed from the list. If the circumstances are especially serious, they shall be investigated for responsibility according to the law.

3. BEHAVIOR MANAGEMENT OF SOFT ENVIRONMENT SUPERVISOR

When the soft environment supervisor carries out supervision, he is generally authorized to take three forms of supervision to participate in the supervision of local business environment construction.

3.1 Independent supervision.

Each soft environment supervisor can independently participate in the supervision in three ways when one finds soft problems in business or social communication. The first is to conduct on-site real-time supervision on the behavior process of window service and administrative supervision. The second is to understand the situation from relevant departments and units, reflect problems and put forward opinions and suggestions. The third is to consult the documents related to the soft environment of relevant units.

3.2 Collective supervision.

In the business environment construction organization or the soft environment supervisor group organization, we should carry out targeted collective supervision on a certain kind of problem.[1]

3.3 Assistance supervision.

The soft environment supervisor who carries out independent supervision can use Jilin soft environment mobile app client to initiate or implement assistance supervision in case of the following situations during the implementation of supervision. First, supervisors can initiate supervision assistance when they need to assist in witness supervision during the performance of their duties. Second, the complainants can apply for supervision assistance when they need to assist in witnessing and supervising an ongoing soft environment incident. Third, the supervisors who receive the "supervision and assistance notice" should go to the scene in time according to the principle of "nearby as soon as possible", fulfill the obligation of supervision and assistance, and timely report the relevant situation objectively and truly.

4. ANALYSIS OF THE PROBLEMS AND CAUSES IN THE CONSTRUCTION OF SOFT ENVIRONMENT SUPERVISOR TEAM

Although under the guidance of the business environment construction organization, the local soft environment supervisors have played a positive role, but there are still some outstanding problems to be solved.

4.1 The personnel composition is not reasonable.

At present, most of the selected soft environment supervisors are the persons in charge of key enterprises and projects. There are not many persons in charge of small and micro enterprises or engaged in specific business. There are many people with certain status in the society, and there are not many ordinary people. In this way, on the one hand, these people do not understand the specific situation. It is difficult to find specific problems, and can not achieve effective supervision. On the other hand, their own work is relatively busy, and it is difficult to draw more energy to participate in supervision activities.

4.2 The consciousness of participating in supervision is not strong.

Many soft environment supervisors pay attention to the identification, not to play the role. There is self-protection psychology. When soft issues happen to themselves, they should show their identity as supervisors of soft environment, and let individual staff fear them in order to protect themselves. However, when soft issues happen to others, the supervision behavior is not active and unwilling to play a supervisory role from the deep mind.

4.3 There are relatively few organizational activities.

The management mode of local soft environment construction institutions to the soft environment supervisors is relatively simple; the organization activities are relatively less; the soft environment supervisors directly participate in the supervision activities are relatively less, and their important role is not fully played, resulting in the lack of sense of belonging and ritual of the soft environment supervisors.

4.4 Being Lack of supervision and assessment mechanism.

As the soft environment supervisors belong to the social supervision force, they do not have the legal responsibility of supervision, and the organizational form is relatively loose. If there is a lack of evaluation and reward and punishment mechanism at the same time, it is difficult to mobilize their enthusiasm to participate in the supervision.

5. EFFECTIVE METHODS TO STRENGTHEN THE CONSTRUCTION OF SOFT ENVIRONMENT SUPERVISORS

After learning from other supervisors' management experience and combining with their own practical work experience, this paper puts forward some effective methods to enhance the role of soft environment supervisors.

5.1 To strictly select and employ, and guarantee the quality.

In order to make the soft environment supervisor more

extensive and representative, and ensure that the supervisor has high personal quality and is competent for relevant work, it should be selected from the following personnel.

5.2 To strengthen training and unify understanding.

Because the soft environment supervisors come from different industries and different posts, the organization form is relatively loose. Therefore, after the completion of the supervisor selection, regular training should be carried out to unify the thinking, improve the understanding and enhance the supervision ability.[2]

5.3 To invite actively and improve participation.

In the work, in order to effectively enhance the participation of the soft environment supervisors, the soft environment construction work organization should actively invite the soft environment supervisors to directly participate in the construction of personalized soft environment, and enhance the enthusiasm of the supervision to participate in the supervision activities.

5.4 To strengthen assessment and stimulate enthusiasm.

In general, the soft environment construction management organization should organize the annual assessment, rewards and punishments for the selected supervisors every year.

6. CONCLUSION

To sum up, in order to strengthen the construction of local soft environment, the supervisor team management structure is relatively loose, the supervision content is more complex, and the role is more casual. Therefore, it is necessary to continuously strengthen the organization and management in practice, and gradually explore a set of innovative mechanism integrating team construction and management, and further from the aspects of personnel selection, daily management, and system level construction.

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Strategic Thinking on Coordinated Development of Regional Economy from the Perspective of Industrial Cluster--Taking Hebei Province as an example

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Abstract: Hebei economic development has the advantages of resources, hinterland and location, but affected by a series of reasons, the advantages have not been fully utilized. Compared with other cities, the development of industrial clusters lags behind seriously. The industrial level in economic development is low, and the economic export-oriented degree is also very low. How to use industrial clusters to promote economic coordinated development has become a necessity. So the practical problems should be solved. This paper mainly analyzes the practical problems faced by the coordinated development of Hebei economy, from the perspective of industrial clusters, capital, or system, and draws lessons from the successful development experience at home and abroad, provides countermeasures and suggestions for the development of industrial clusters, establishes and strengthens cooperation, improves the financing environment, and completes the infrastructure construction, so as to promote the coordinated development of regional economy.
Key words: Industrial Cluster; Coordinated Development; Financing; Cooperation; Hebei Province

1. INTRODUCTION

Scholars at home and abroad have different definitions of industrial cluster. The United Nations Industrial Development Organization -- UNIDO thinks that industrial cluster is the clustering phenomenon of enterprises in a certain region facing similar challenges in the production and sales of similar products. In this paper, it is considered that production area cluster is the aggregation of enterprises in a specific field, which is convenient for enterprises to learn and cooperate with each other and improve the competitiveness of enterprises.

2. CURRENT SITUATION OF INDUSTRIAL CLUSTER DEVELOPMENT IN HEBEI PROVINCE

Before the 21st century, Hebei industrial cluster has been in the wandering stage. In this stage, the regional economic development of Hebei Province has used national policies to form industrial clusters rapidly. However, this stage relies on the development trend of the regions along the line, and does not grasp the opportunity, and does not realize the establishment of industrial clusters. In 2011, Hebei industrial cluster began to enter the development stage. In the Seventh Party Congress, the development of industrial clusters was put in a strategic position, and the development of industrial clusters entered a new historical period, which greatly promoted the development of industrial clusters in Qinhuangdao area and the rise of new areas. From 2011 to the present, Hebei industrial cluster has entered the stage of rapid development; the development planning of industrial cluster has risen to the national strategic level, and the national support for the development of industrial cluster has increased.[1]

2.1 Analysis on the advantages and disadvantages of cluster development in Hebei Province

2.1.1 Advantage analysis

Hebei has geographical advantages in regional economic development. Hebei belongs to the capital area, which is located in the economic center. It is the key area for the coordinated development of regional economy, and also the gathering place of commerce and trade between the north and the south of China. It has great geographical advantages and provides convenient conditions for the economic development of Hebei. For example, Qinhuangdao is an important sea port in North China, an important transit place for coal transportation from north to south, and also the largest coal trading center in China. Hebei regional economic development has the advantage of hinterland, which can provide the source for material acquisition. It is the material guarantee of continuous expansion. The hinterland of Hebei is very broad. In addition to some cities in Hebei Province, it also includes coal resources boss, Inner Mongolia and other places. Tangshan port is the nearest access to the sea between North China and Northeast China, with convenient transportation and industrial cities such as Zhangjiakou and Tianjin.

Hebei is rich in mineral resources. At present, more than 150 kinds of mineral resources have been developed. In terms of energy, oil and gas resources are widely distributed in Hebei Province, and some resources are shown in Table 1. In terms of marine resources, the coastal zone covers a total area of 11379.88 square kilometers. It is rich in marine resources such as crude salt, natural resources and marine organisms. It is suitable for various forms of comprehensive development and has development potential.

2.1.2 Disadvantage analysis

In the development of regional cooperative economy, Hebei, Beijing and Tianjin have great differences, showing a dual structure. Hebei's overall strength is relatively high. Hebei hopes to be affected by other

regions in its economic development. However, due to the division of administrative regions and the lack of coordination agencies, the economy of Hebei has not been driven forward. Even if the rate of return on capital of Tianjin and Beijing is reduced, they can still use other convenient conditions to attract investment, and a large amount of capital flows into them, resulting in the lagging economic development of Hebei Province.

Hebei's economic development is facing a great disadvantage of talent competition. Talent flow will directly affect the regional economic development, and high-quality talents can improve the competitive advantage of resources. Although Hebei has advantages in talent and total education, it is lack of domestic leading first-class colleges and universities, and the per capita income is far lower than Beijing and Tianjin, so it is difficult to retain high-level talents, which affects the further expansion of Hebei's cluster economy.[2]

In order to use the national energy input demand, the role of regional economic development platform in Hebei is very obvious; the comprehensive service function is gradually enhanced, and the facilities construction is gradually improved. However, the port construction function of Hebei is relatively single, and the driving effect on the mainland is not obvious. Although the positioning of each port is slightly different, they all want to develop comprehensive ports, mainly responsible for cargo handling and transportation. There are overlapping functions, and can not play a leading role in the hinterland. There is a lot of competition, and it does not play its own role in attracting external communication.

This paper analyzes the threat of regional economic development in Hebei Province. Hebei industrial clusters are concentrated in petrochemical and iron and steel, so the resource supply will directly affect the restricting factors of industrial development. The expansion of Hebei industrial cluster will correspondingly lead to the expansion of energy. Although the resources themselves are relatively rich, they show a downward trend. From 2011 to 2013, the reserves will be reduced by more than 1 million tons, and iron ore will be reduced by more than 1352 million tons. Some resources are non renewable resources, which has brought great constraints to the development of energy consumption and economy in Hebei Province. In addition, the economic development of Hebei Province is facing the problem of water shortage.

In addition to the competition of Pearl River Delta and other places, Shandong Peninsula and Liaoning also bring great threat to Hebei. There is great competition in the field of investment and development, and there are overlapping situations of planned ports and projects.

2.2 Problems of cluster development in Hebei Province
Hebei is rich in resources, and its economic development is dominated by heavy industry, forming tea clusters dominated by steel and oil, and forming industrial clusters such as automobile parts industry and leisure industry. Although the economy has developed rapidly in recent years, the emergence of characteristic industrial parks can promote the coordinated development of regional economy to a certain extent. There are still many problems

to be solved in the construction.

2.2.1 Low level of urbanization
Economic development is closely related to port development. Analyzing the economic development situation of various countries, the development of cities and ports has positive correlation and mutual influence. In the past time, the urbanization level of Hebei port city was not high; Qinhuangdao was the first to develop, but the comprehensive strength was not high. Tangshan port construction was in a state of separation. The low level of urbanization affected the realization of port functions and restricted the development of industrial clusters.

2.2.2 The development of the tertiary industry is slow
Hebei's economic development is in the position of heavy industry, and the industrial chain is inclined to the middle and lower reaches. Among the three cities, only Qinhuangdao has a higher contribution rate of tertiary industry, while the other two cities are very low. In 2013, among the large-scale industries above Tangshan City, the equipment manufacturing industry increased by more than 40 billion yuan, with a year-on-year increase of 2.2 percentage points. Cangzhou is a comprehensive industry, with an increase of 127.1 billion yuan, of which heavy industry accounts for more than 85%, and Hebei's tertiary industry increases by 360.3 billion yuan less than 40%.[3]

2.2.3 Low degree of opening up and underdeveloped economy
Compared with other coastal cities, Hebei has a lower degree of opening to the outside world and less emphasis on export-oriented economy. Compared with other cities, Hebei has less than 50% of foreign capital utilization, and there is a big gap compared with other cities. Hebei coastal economic development is underdeveloped, which has little effect on Hebei's economy. It is in the middle and lower level in China's coastal cities. The port construction function is relatively simple; the attention to goods and containers is insufficient, and there is a lack of specialized large-scale wharf.

3. STRATEGIC SUGGESTIONS ON PROMOTING COORDINATED DEVELOPMENT OF REGIONAL ECONOMY

3.1 To strengthen regional cooperation
In the development of industrial clusters in Hebei, it is necessary to desalinate administrative consciousness as soon as possible, establish the concept of regional integration, seize the opportunity, strengthen the cooperation with Tianjin and Beijing, vigorously develop industrial clusters, analyze their own development in the overall environment, focus on the development of the entire coastal industrial clusters, and realize the dislocation development with the surrounding areas as soon as possible. In the development of Hebei industrial cluster, we need to fully consider its own advantages, realize the docking with Tianjin and Beijing, and provide a strong ideological power for the coordinated development of regional economy. At present, Beijing has a strong political advantage, Tianjin also has a policy advantage, so Hebei is at a disadvantage. In the development of industrial clusters, Hebei needs to break through the institutional barriers, make full use of the

strategic opportunities of collaborative development, accelerate integration, strengthen cooperation with other regions, and gradually stand firm in the competition. However, in the development of industrial clusters, we also need to see that it may lead to a single industrial structure. Therefore, in the development of industrial clusters, Hebei still needs to pay attention to the support of the government, reach a consensus with Tianjin and Beijing, and ensure the institutional guarantee.

3.2 To improve the management system

Hebei has great geographical advantages in the economic development of Beijing and Tianjin. Facing the great development opportunities, Hebei needs to update the development concept as soon as possible, change the previous development concept, and clarify the goal of building industrial clusters. Hebei cities need to be able to unify their thinking, analyze their own problems and weaknesses, change the traditional development concept, strengthen the development of industrial clusters, and carry out analysis from the perspective of national openness, so as to make industrial clusters develop intensively and intensively. In the cooperative development with other cities in Hebei, it is necessary to improve the management system and establish a unified coordination organization to ensure that the industrial cluster system can achieve complementary advantages, facilitate the overall coordination of the development of coastal areas, and avoid causing vicious competition. In the management of industrial clusters in Hebei, it is necessary to strictly control the access standards, standardize the degree of projects, and ensure the high standard construction of industrial clusters. Secondly, we should pay attention to the coordinated development of each industry space, accurate each functional module, do a good job in scientific planning and demonstration, and make clear the direction of industrial development. Specifically, it should improve the leading organization, set up a leading group, assign the responsibility to individuals, refine the work plan, and adhere to the monthly report on the development of industrial clusters.

3.3 To improve the financing environment

In the development of industrial clusters in Hebei, not only the support of the state, but also the ability to absorb social funds is needed. Hebei's economic development is not sufficient and its own financial resources are limited. Therefore, it is necessary to fully broaden financing channels, improve investment environment, establish and perfect financing institutions, and implement fiscal and tax incentive policies. In terms of financial investment environment, we should pay attention to the establishment of financing companies, encourage the establishment of diversified financing platforms and raise funds in various aspects. It is suggested to set up special investment and financing work leaders to ensure that various management measures can be implemented in place, attract the participation of domestic loving financial institutions, expand the coverage of existing banks, and establish a legal entity of banks as soon as possible. The credit management mode of the development of industrial clusters can promote the development of credit resources to the direction of industrial clusters and meet the capital needs of industrial clusters.

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Regulation and Research Progress of SCP2 Gene Expression

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Abstract: Sterol transporter (SCP2) is a non-specific lipid transporter. At present, there are few studies on the transcriptional regulation of SCP2, which are mainly concentrated in mammals. In view of this situation, this paper proposed the SCP2 gene expression regulation and research progress. The expression of SCP2 in different instar larvae of Helicoverpa armigera was consistent, that is, the expression level of hascp-2 protein in the midgut of 4th instar larvae was 0.8%. By analyzing the effect of haap-4 gene interference on the cholesterol content of Helicoverpa armigera, it was concluded that interference of haap-4 expression would lead to the decrease of hascp2 protein expression, and then affect the down regulation of haap-4 gene expression, thus reducing the cholesterol absorbed by Helicoverpa armigera.
Keywords: Sterol Transporters; Protein Interaction; Expression Regulation; Sterol Carrier Protein

1. INTRODUCTION

Sterol transporter (SCP2) is a nonspecific lipid transporter, which is widely distributed in vertebrates and invertebrates. It promotes cholesterol metabolism and cools storage and retention of cholesterol [1-3]. Human SCP2 protein can also enter the nucleus, bind with the regulatory region, regulate gene expression, enhance the stability of protein, and then participate in the formation and development of Alzheimer's disease [4-5].

Cholesterol plays three important roles in biological cells: swimming free cholesterol is used to build cell membrane; it is transported to peroxidase decomposition; it is transported to mitochondria to participate in alcohol biosynthesis [6-7]. The human body lacks key enzymes in cholesterol biosynthesis pathway. It can synthesize cholesterol independently and can only obtain cholesterol through food to meet the needs of physiological and biochemical activities [8-10].

In this paper, we analyzed the current SCP2 gene expression regulation and research progress, and found that the SCP2 gene expression regulation and research is still lacking. In this paper, we established the expression regulation and research progress of SCP2 gene in Helicoverpa armigera. In the study, according to the characteristics of Helicoverpa armigera SCP2 gene, combined with the experiment, the corresponding strategies were put forward, which had a positive impact on the expression regulation and research progress of Helicoverpa armigera SCP2 gene.

2. RESEARCH PROGRESS ON REGULATION OF 2SCP2 GENE EXPRESSION

2.1 Regulation of SCP2 Gene Expression

Main content of gene expression regulation is transcription level, which is determined by the interaction of regulatory elements in cis genome and trans genome. The expression of SCPx gene varies greatly in different species and tissues, even in different species and genders.

3. EXPERIMENTAL METHODS AND TTEPS

3.1 Extraction of Total RNA from Midgut of Helicoverpa Armigera

(1) Frozen sample was taken out from the ultra-low temperature refrigerator and ground with a grinding rod for about 0.6 h, and then the sample was placed at room temperature for 5 min;

(2) Add 250 μl chloroform to the sample in the ultra clean table, cover the tube cover, shake violently for 18S, and then stand for 4min. Chloroform is highly toxic. Pay attention to wearing masks and gloves during the whole operation process;

(3) Centrifugation to remove the supernatant, use a medium gun to absorb a clean, add 2ml 50% ethanol, gently suck, blow, wash and suspend;

(4) Same is 5 ℃, 13000 RPM centrifugation for 8 min, do not supernatant, and then shorten 3 min to remove the liquid;

(5) Repeat steps 6 and 7 again;

(6) Open the room temperature for 6-11min and blow dry;

3.2 Extraction of Nucleoprotein from Midgut of Helicoverpa Armigera

(1) Midgut tissues of the 5th instar cotton bollworm (Helicoverpa armigera) aged 3 days were dissected. After PBS cleaning, the midgut tissues were put into a 2ml EP tube, and about 150 mg tissue samples were collected;

(2) Centrifugal speed was adjusted to 550 rpm, the time was 6 min, and the temperature was 5℃. The supernatant was completely removed by centrifugation;

(3) Add 1200 μl cold CREI solution and homogenize with glass homogenizer;

(4) Take out the EP tube, swirl at high speed for 16S, and ice bath for 11min;

(5) After centrifugation at 5 ℃, 13500 rpm for 15 min, the supernatant was slowly absorbed and placed in a new tube. The obtained sample was the nuclear protein of the midgut of Helicoverpa armigera, which could be directly used for EMSA test or cryopreservation at - 85 ℃.

4. DISCUSSION

4.1 Experimental Results of HaAP-4 Interference on Helicoverpa Armigera

(1) Expression of HaAP-4 in Helicoverpa armigera at different ages

The midgut of Helicoverpa armigera was dissected and RNA was extracted. In order to screen the suitable age of Helicoverpa armigera, the experiment was repeated three times. The data in Figure 1 are from the expression level test of haap-4 in different age stages of Helicoverpa

armigera, and the results are shown in Figure 1.

The results of Figure 1 and Table 1 showed that the expression level of haap-4 mRNA in 4-year-old Helicoverpa armigera was the highest, followed by 6-year-old Helicoverpa armigera, then 5-year-old Helicoverpa armigera, and finally 3-year-old Helicoverpa armigera. The results were consistent with the expression of SCP-2 in different age larvae, that is, hascp-2 protein was highly expressed in the midgut of 4th instar larvae.
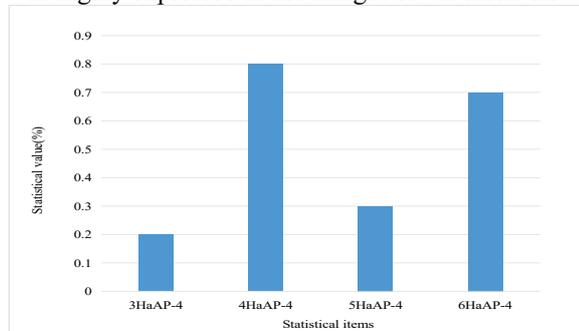
Figure 1: Expression of HaAP-4 in different age stages of Helicoverpa armigera

Table 1: expression of HaAP-4 in different age stages of Helicoverpa armigera

Age	MRNA expression level(%)
3HaAP-4	0.2
4HaAP-4	0.8
5HaAP-4	0.3
6HaAP-4	0.7

(2)Effect of HaAP-4 gene interference on cholesterol content in Helicoverpa armigera

The data in Figure 2 are from the analysis of cholesterol content in the adipose tissue of Helicoverpa armigera. The results are shown in Figure 2. The results showed that: as shown in Figure 2, the cholesterol content of Helicoverpa armigera in the experimental group was significantly lower than that in the control group, which was about half of that in the control group, indicating that interference with the expression of haap-4 led to the decrease of hascp2 protein expression. The experimental results are consistent with the theoretical inference. The positive regulatory effect of haap-44 on hascp2 promoter and the important role of hacp2 protein in the absorption of exogenous cholesterol by Helicoverpa armigera were confirmed.
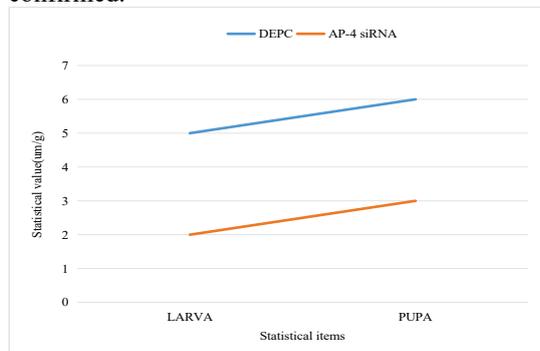
Figure 2: Analysis of cholesterol content in adipose tissue of Helicoverpa armigera

4.2Effects of Interference with HaAP-4 Gene on the Growth and Development of Helicoverpa Armigera

In this experiment, haap-4 siRNA was designed and injected into the larvae of Helicoverpa armigera, and then the cholesterol content of Helicoverpa armigera was measured and analyzed. It was found that inhibition of haap-4 gene expression not only resulted in the down regulation of hascp2 expression, but also reduced the content of cholesterol absorbed by Helicoverpa armigera (Figure 2) Ha.AP -The positive regulation of hascp2 and the effect of hascp2 on cholesterol transport Transfusion.

5. CONCLUSIONS

Through the study, we believe that SCP2 is an important factor affecting gene expression levels of different organisms. The results showed that the cholesterol content in the experimental group was significantly lower than that in the control group, indicating that the interference of haap-4 expression led to the decrease of hacp2 protein expression, and hascp2 played an important role in the cholesterol absorption process of Helicoverpa armigera. The results showed that cholesterol played an important role in the growth and development of insects, and hascpc2 protein played an important role in the process of insect cholesterol intake.

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Research on Problems in Kindergarten Math Education

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Abstract: Kindergarten mathematics education is an important part of children's comprehensive development education. This article analyzes the status quo of mathematics education activities in kindergartens through the investigation of daily mathematics education activities in Chinese kindergartens, and puts forward optimization suggestions based on the problems in teaching.
Keywords: Kindergarten; Mathematics education; Status quo

1. INTRODUCTION

Kindergarten mathematics education focuses on stimulating children's interest in mathematics and is an important tool to promote children's thinking and cognitive development. 1 At present, in the process of mathematics education in many kindergartens, there are still some problems that cannot be ignored in how to organize scientific and effective mathematics education activities, how to choose operating materials, and how to make the evaluation function again to promote the development of children. Based on the actual development of kindergarten mathematics education activities, this paper considers optimization strategies through investigation and analysis of the status quo.

2. ANALYSIS OF PROBLEMS EXISTING IN KINDERGARTEN MATHEMATICS EDUCATIONAL ACTIVITIES

Through the analysis of observation records and interview data, none of the surveyed public kindergartens has the problem of "primary schooling". Teachers can basically use games as a medium to carry out mathematics activities to guide children to understand simple mathematics knowledge and perceive life mathematics. However, the survey found that there are still some problems that need to be optimized in mathematics education activities, which are specifically manifested in the following four aspects.

2.1 Educational materials are boring

The interview data shows that teachers generally tend to use finished teaching aids and are able to master the operating specifications proficiently. The teaching aids in the mathematics corner are mainly finished teaching aids, and teachers' self-made teaching aids are often only used as "displays." The main reason lies in two points. One is that the teaching aids themselves are not very interesting, and it is difficult to attract children to choose their own games; second, the self-made teaching aids take a long time to make and are easy to break, and teachers sometimes need one thing for multiple purposes, so some are more complete and exquisite The homemade teaching aids are rarely used for children to play. The comprehensive survey results show that due to the influence of teachers' skills, cognition and other factors, simple, repetitive, and uniform operation materials are used more frequently, and children's enthusiasm for participating in activities is not well mobilized, which affects the effect of activities to a certain extent.

2.2 Activities are boring

Through observation, it is found that the mathematics activities designed by kindergarten teachers are not interesting, the game links lack scientific planning and pre-predetermined problems, and it is difficult to take care of all children and fully mobilize children's interest and curiosity in math learning. Taking "understanding graphics" in small classes as an example, teachers use blackboard writing, graphics cards, physical objects and other materials to carry out activities. The main body of the activity is divided into two parts: teacher's explanation and demonstration and children's group game. The teaching link where teachers use teaching aids is intuitive but not interesting. In the game session, the teacher designed a game of "Help the graphic baby go home": the children were divided into different groups to cooperate and put the graphic cards left in the classroom back into the corresponding graphic basket. Due to differences in developmental levels and personality characteristics, some children "dominate" games, while some children hardly participate in games. Teachers' lack of intervention or improper intervention is also difficult to achieve the expected goals.

2.3 Narrow evaluation

The rigor of mathematics itself makes the results accurate, which easily leads to the pursuit of accurate results when preschool teachers begin to evaluate children's learning, ignoring process evaluation and emotional evaluation. Through observation and interviews, we found that in various daily mathematics education activities, teachers' praise often indicates that children have given accurate answers to the results of a certain mathematics problem, but this kind of evaluation of children at different stages of development is based on a unified standard. The approach ignores the differences between individuals and is narrow.

3. SUGGESTIONS FOR IMPROVING THE LEVEL OF MATHEMATICS EDUCATION IN KINDERGARTENS

In response to the above problems from the survey, we believe that improvements can be made from the following aspects:

3.1 Broaden the ideas for making teaching aids

Preschool teachers can broaden their ideas for making teaching aids and lead children to collaborate. Although children's works may be rough and simple, they also promote the development of their intelligence and practical ability in the process of active exploration and

repeated attempts. Teachers can also clarify the supporting role of parents in production, encourage parents to participate in the learning process of children, help children collect materials, provide suggestions, and make teaching aids together with parents and children. When selecting educational materials, we must pay attention to innovation and diversity, showing childlike innocence and fun. Teachers can work with young children to use waste items in daily life, such as using old cardboard to make jigsaw materials and waste beverage bottles to make model materials; they can also integrate the guidance of art disciplines, use rich colors, draw beautiful patterns, and design. The novel shape attracts children's interest in practice and learning while fully integrating mathematical knowledge. While providing young children with opportunities to get close to nature, they continue to enrich educational materials.

3.2 Enhance the interest of educational activities

The abstract and logical characteristics of mathematics knowledge make the principle of interest in children's mathematics learning must be taken seriously. Organizing activities in the form of games and creating a relaxing learning atmosphere can enable children to obtain a pleasant emotional experience. 2 But what needs attention is to avoid the monotony, repetition of the game and the behavior of the game for the sake of the game. There are various types of math games in kindergartens, and teachers can choose according to different teaching contents. Operational math games are mainly through the hands-on operation of children to gain certain mathematical knowledge. Sports math games combine mathematics concepts with physical activities. For example, when children in a large class learn the composition of numbers, they can record numbers and compare numbers through sandbag games, and obtain mathematical knowledge through induction. In addition, there are competitive mathematical games, mathematical intelligence games, etc., which can be integrated into mathematical activities according to the actual situation.

3.3 Improve the evaluation system

The theory of multiple intelligences believes: "The ultimate goal of education must be to enhance human understanding". 3 Individual differences have produced different combinations of intelligence. According to the theory of multiple intelligences, creating hierarchical and multidimensional evaluation standards for children's mathematics learning and constructing a complete evaluation system can benefit children again in the evaluation process. "The concept of modern education evaluation emphasizes that the purpose of evaluation is not to evaluate for evaluation, but to evaluate for development." 4 Paying attention to the recent development areas of different children, taking evaluation

as an effective support for the development of children, and integrating evaluation throughout the entire learning process, can truly realize the value of evaluation.

4. CONCLUSION

Mathematics has a wide range of applications. 5 As an important part of children's overall development education, kindergarten mathematics education promotes children's self-construction and harmonious development through the training of children's cognition, skills and emotions, and closes the quantitative relationship and spatial form of children with the surrounding world. Connected together. However, in the actual educational activities of kindergartens, affected by many factors, there are still some problems that cannot be ignored in kindergarten mathematics education. All practitioners of pre-school education should scientifically control daily educational practice and design high-quality math education activities to better assist children in understanding things and understanding nature, meeting the needs of children's growth, and promoting children's all-round development.

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Research on the Types, Causes and Governance Paths of "Micro-corruption" of China

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Abstract: Based on the criterion of resources and order, this paper classifies "Micro-corruption" of China, which has various types, large quantity and wide area. The main reasons why "micro-corruption" is prone to occur frequently and widely are that some grass-roots cadres lack ideals and beliefs, supervision effect is not good, and punishment is not enough. In order to prevent the spread of "Micro-corruption" from its source, we should strengthen integrity education at the grass-roots level, and innovate the mode of power supervision, and establish the mechanism of cooperation and linkage governance.
Keywords: Micro-Corruption; Types; Full and Strict; Governance Over the Party

1.THE CONNOTATION AND TYPES OF "MICRO-CORRUPTION"

"Micro-corruption" refers to the grass-roots workers at the county level and below in the course of exercising public power, ask for benefits from the masses by taking advantage of one's position, false report falsely claim, interception of private division, benefiting friends and relatives and other corruption problems. "If even minor cases of corruption are not investigated and dealt with, they will be copied and amplified by more people. The accumulation of these seemingly minor lapses will seriously undermine the legitimacy of the public system, and even officials and members of society who are not corrupt will lose confidence in their loyalty to the regime"

[1].In January 2020, Xi Jinping stressed again at the Fourth Plenary Session of the 19th Central Commission for Discipline Inspection of the CPC, "We must thoroughly combat 'micro-corruption' in people's livelihood areas, punish those protectors who indulge and cover up the Mafia, rectify the "stumbling block" hindering the implementation of the policy of benefiting the people, and promote all-round perfection of the Party organizations at the grass-roots level" [2]. In the current crucial period of the comprehensive promotion of the strategy of rural revitalization, the control of "Micro-corruption" has become particularly urgent and significant.

Based on the standard of resources and order, this paper classifies the typical cases of "micro-corruption". Resources refer to the organic integration of various materials, policies, funds and projects to maintain and ensure the effective operation of rural society, including National Resources and village-level collective "three-capital". Order mainly refers to the normal and orderly state of Rural Society, which is formed by various formal and informal systems such as Party discipline, laws and regulations, rules and regulations, detailed rules and measures, village rules and folk conventions. Based on the criteria mentioned above, this paper classifies "micro-corruption" from three dimensions: undertake national resources, manage collective "three-capital" and manage rural public affairs (Figure 1).

Types of presentation of "micro-corruption" under the criterion of resources and order (Figure 1)

Standard	Dimensions	Type of presentation				
Resources	Undertake national resources	Abuse one's power for personal gains	False claim	Detainment	Benefit friends and relative	embezzlement
			Bait and switch	Usurped and Split up		
	Manage collective "three-capital"		Expropriate income of collective land	Embezzlement of collective resources		
Order	Manage rural public affairs		ask for benefits from the masses by taking advantage of one's position	taking bribes	Vote rigging	Dereliction of duty
			Illegal charges		The village bully	
					Criminal and gang-related	

2.THE CAUSES OF "MICRO-CORRUPTION"

2.1 Lack of ideals and beliefs

Influenced by factors such as traditional concepts, educational level and sources of information, some cadres at the grass-roots level are often accustomed to working on the basis of their experience and interpersonal relationships, coupled with a lack of initiative to learn from the new ideas, ideas and policies of the Party and the state, lack of strict discipline on their own thinking and behavior. Some, driven by economic interests, often lose their ideals and beliefs, lose their sense of purpose, and gradually develop unhealthy tendencies such as individualism, Hedonism and money worship; Some

believe that their " charade " will not be concealed by the relevant departments because they are far beyond "The sky is high and the emperor is far away", in addition, because the grass-roots people do not know about the relevant policies, all kinds of "petty greed and petty possession" corruption psychology will come naturally without being aware of it.

2.2 Ineffective supervision

Firstly, rural cadres at the grass-roots level often have greater "discretion" in implementing higher-level policies, and "selective execution" is more common, and may even be carried out through "benefit transmission", some corrupt cadres in counties and townships form a

"community of interests", and the supervision of their superiors is a mere formality, which provides a living space for the breeding of "micro-corruption". Secondly, the discipline inspection and supervision force of County and village still has the realistic problem of not daring to supervise and unwilling to supervise the "top leaders" of the Party and government and their leading cadres. Third, the grass-roots people should be the main participates of the "micro-corruption" governance, but in practice, the People's supervision is faced with the practical problems of not daring to supervise, not willing to supervise and not able to supervise, which leads to the unsatisfactory supervision effect.

2.3 Insufficient Punishment

Robert Kligard argued, "Corruption motive = Bribe - Moral loss - (Opportunity to be discovered and sanctioned × Punishment) > Salary + Moral satisfaction of the clean" [3]. The smaller the opportunity or probability of punishment, the greater the corruption motivation and the greater the possibility of power corruption. In some areas, grass-roots cadres, especially those in village communities, who are given "light punishment" after they break the law and discipline, will not have a substantial impact on working life, so the low cost of violations of discipline and law leads to a high incidence of "micro-corruption". But after the "full coverage" of the reform of the supervisory system, some cadres still push their luck, believing that "law does not punish the minor things", and that even if they are investigated and prosecuted, law enforcement and judicial punishment often fail to be lax, which, in turn, encourages "micro-corruption".

3.THE EFFECTIVE WAY TO CONTROL "MICRO-CORRUPTION"

3.1 Strengthen integrity education at the grass-roots level

First, strengthening the construction of Party organizations at the grass-roots level, matching the secretaries of Party organizations, taking the opportunity of promoting the normalization of the educational activities under the theme of "remain true to your original aspiration and keep our mission firmly in mind", and strengthening the education of the ideals and beliefs of the vast number of grass-roots Party members and cadres, to make up for the spiritual calcium. Second, increase the grass-roots publicity efforts to improve the grass-roots awareness of the rule of law, so that they can use legal means to protect their legitimate rights and interests of rational thinking ability. Third, we will strengthen moral education for cadres at the grass-roots level, constantly cultivate good qualities that are loyal to the Party and can stand the test of the masses, and urge them to consciously study the new ideas of the Party and the State, to demonstrate the fine and simple style of Party and government and to promote social customs. Fourth, making use of new media on the Internet, making real cases into video or micro-movies, organizing grass-roots cadres to watch regularly, and enhancing ideological consciousness, the thought of corruption will be stifled in the "embryonic" state from the root.

3.2 Innovate the mode of power supervision

First, "We will comprehensively promote the inspection system at the city and county levels, shine the sword of "micro-corruption" around the masses in a timely manner" [4]. Second, to promote the extension of the supervision function of the town and street to the "last kilometer" of the village community, to select a group of competent and excellent inspectors to serve as the "sentinel" and "probe" of the work of the town and street discipline inspection and supervision, so as to realize the full coverage of supervision over all grass-roots public officials. Third, through strengthening publicity and education on the law, improving the system of letters and visits, the system of democratic consultation, we can effectively activate the democratic supervision function of the grass-roots masses and effectively form a joint force of social supervision, so that "micro-corruption" has no place to hide. Fourth, the use of modern information technology, such as big data, cloud computing, artificial intelligence, to create a big data monitoring platform, do a good job of real-time data tracking, comparative analysis, and provide a strong technical support for precise supervision of "micro-corruption".

3.3 Establish the mechanism of cooperation and linkage governance

We should step up efforts to enforce discipline and law, strengthen cooperation and linkage with public security, procuratorial, auditing, and other departments, establish mechanisms for information sharing, referral of clues, and case investigation, and severely investigate and punish various forms of "fly greed" and "ant greed", and lock "black sheep" into institutional cages. Combining anti-mafia with punishing "corruption" at the grass-roots level, we should not only crack down on such violations of law and discipline as the Mafia at the grass-roots level, the family forces manipulating grass-roots elections, and the exploitation of the people, but also dig deep into the "umbrella" and corrupt elements behind them, break the "network of connections" and "network of interests", and earnestly safeguard and promote the people's sense of gain and security. We will improve the reward and protection system for people to report corruption, eliminate their worries, involve them in the governance of "micro-corruption", and deprive the evil forces, family forces and their "protection umbrella" of safe havens.

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An Analysis on *The Rocking-horse Winner* from the Perspective of Social and Historical Criticism

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Abstract: The background of *The Rocking-Horse Winner* is set in the post-industrial revolution of Britain. It reflects the distortion of healthy and harmonious interpersonal relationship by money in the western industrial society. This paper aims to use the theory of social and historical criticism to analyze the causes of the tragedy of *The Rocking-horse Winner* from the perspectives of society and family relationship. It is necessary to grasp the theme of this work, and to reveal the destruction of modern industrial civilization on human nature and its warning significance to contemporary society.
Keywords: Social and Historical Criticism; *The Rocking-Horse Winner*; Society, Family Relationship

I. INTRODUCTION

The Rocking-horse Winner is one of Lawrence's famous short stories written in the 1920s when industrial civilization was highly developed. In this period, the upper class of British bourgeoisie presented the appearance of spiritual imbalance, emotional dislocation and soul distortion under the impact of bourgeois material civilization. It reflects the distortion and cruelty of modern industrial civilization to human nature from certain way. This study further interprets the tragic causes of the short story from the two levels of society and family relationship, aiming to reveal the destruction of modern industrial civilization on human nature.

II.THEORETICAL FRAMEWORK

Social and historical criticism is an early and influential mode among many criticism methods. It mainly emphasizes the relationship between literature and social life, and holds that literature is the representation of real life, formed by a certain social and historical environment [1]. Social and historical criticism attaches importance to inclination of the writer and emphasizes the value and social function of literary works. British critic Christopher Caudwell further points out that literary criticism should take social and historical changes into account, play a positive social function, and observe the significance of literary works.

III.ANALYSIS OF *THE ROCKING-HORSE WINNER* FROM THE PERSPECTIVE OF SOCIAL AND HISTORICAL CRITICISM

3.1 Social Background of *The Rocking-horse Winner*

The Rocking-horse Winner was created in 1920s, which was at the peak of the development of industrial civilization. The ideology of production was gradually replaced by the ideology of consumption. People competed with each other blindly, and the atmosphere of money worship and the idea of money first spread the whole society. The short story shows the distorted values can eventually lead to family tragedy.

The house is haunted by the unspoken voice, "There must be more money!" [2] The whispering is not only in the Paul's family, but also in the whole society. At the beginning of the 20th century, the pursuit of wealth in Britain's upper class is called "a never-ending fireworks show". People pursued gorgeous clothes, exquisite food, groups of servants and beautiful exotic holiday. The nobles could not afford to live in luxury; they had to sell their land in exchange for money for maintaining their living standard and social status. However, most of the upper middle class are not lucky to live in style. Take Paul's family as an example, they had to sell their soul and humanity for luxurious life.

People's thoughts and behaviors are affected by the social environment inevitably. The house is haunted by the voice, and the voice can be consider as the dominant ideology of society which makes people lose themselves in greed. It is the cry of the industrial age, the devil nut of the consumerist culture.

3.2 The Family Relationship in *The Rocking-horse Winner*

Paul's mother, Hester, is a money-oriented female who was driven by money into apathy. In order to satisfy his mother's endless desire for pleasure, Paul gives up his studies and plunges into gambling crazily. Similarly, his father also does not fulfill his duty and obligation of being a husband and a father. He does nothing for his wife's pursuit of material needs or mental love, he also fails in his duty of education to his son. To some extent, it can be considered that his father is self-seeking rather selfless. Uncle Oscar seems to care about Paul, but his care and love is out of the pursuit of money. As Paul's elder, he should stop Paul immediately when he knows that Paul is gambling, rather than provide him with funds to indulge him in gambling. In order to gain more money, Oscar even encourages Paul to predict the name of the winner horse. Bassett, a gardener of Paul's family, shows great respect, loyalty, and trust to Paul. Especially he makes a profit from the horse race after Paul's prediction, he is more religious as a sincerely follower. He just only obeys and assists the little master Paul with blind loyalty.

Family environment is important for children's growth, and parents' love is usually a necessary emotion for a family, and also a necessity for a kid's healthy growth. But in the story, parent's love is absent, which is the biggest spiritual dilemma in Paul's family[3]. In *The Rocking-horse Winner*, there is no love exchange between parents.

The only thing they have in common is the pursuit of money. They inadvertently build Paul's view of money first. Paul, growing up in such a family environment, is destined to be the victim of the desire of family members.

3.3 The Warning Significance of the Story for Modern Society

Although this story happened in 1920s, it still has a strong practical significance to the highly developed material civilization today. With the development of economic globalization and cultural globalization, Chinese and Western cultures have integrated with each other. Under the erosion of Western consumerism values, the consumption of some college students in the new era have been alienated to a certain extent. They gradually abandon their rationality in consumption activities, carry out blind consumption, and become one-way consumption machine [4]. A part of college students are addicted to the endless consumption desire and activities, and lose their personal subjectivity. They maintain that only consumption can meet their own unique taste and personality, and make their pursuit of happiness in life come true, which leads to consumption becoming the first in their whole life. Besides, College students are a huge group in society, which contains great consumption power in the new era. Their consumption values have a great influence on the long-term development of economy. In generally, it is significant that college students should establish scientific consumption values for social and economic development and personal growth.

IV. CONCLUSION

The author applies the theory of social and historical criticism to make the study of *The Rocking-horse Winner*. It is found that Paul's tragedy is not only a personal tragedy, but also a family tragedy, and even a social tragedy. The author also found that the most interesting is that the great contrast between the seemingly beautiful title and the end of the story. The title of the story is worth thinking about what the winner gets. Paul wins money, but he dies; his mother gets money, but she loses her only son; what the rocking-horse brings to the child is not happiness, but a tool to take his life away. Lawrence shows readers the setbacks and distortions suffered by the people of Western industrial society under the pressure of bourgeois material civilization. People should follow the laws of life development and maintain a harmonious and balanced relationship between human and nature.

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A Probe into the Effect of Multimedia Technology in the Teaching of Chinese Folk Music

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Abstract: The history and culture of Chinese folk music are extensive and profound. In our country's traditional culture, there are many types of folk music of the Chinese nation, which have important cultural heritage values. With the improvement of our country's economic status, a large amount of support has been invested in Internet technology, and multimedia technology has developed rapidly. The use of multimedia technology to support the combination of audio, video and images for folk music teaching can stimulate students' interest in folk music and improve the quality of teaching. This paper mainly introduces the characteristics of folk music and the effects of multimedia technology in music education to promote the sustainable development of folk music.

Keywords: Multimedia technology; Folk music; Music teaching

1. THE CHARACTERISTICS OF CHINESE FOLK MUSIC

In the Chinese culture with thousands of years of history, folk music has a wide range of unique folk music types, and the style and tune characteristics are consistent with the national characteristics of our country. In recent years, a lot of support has been invested in Internet technology, and our country has gradually become a major country in the world, and attaches great importance to the inheritance of national culture. The introduction of multimedia technology to carry out teaching activities for the people has enriched teaching methods and promoted the spread of folk music in various ways. Multimedia technology plays an important role in music teaching. Therefore, teachers should follow the progress of the times, master modern and advanced multimedia technology, and apply multimedia technology to assist in the development of folk music teaching, which can protect the inheritance of folk music.

Folk music has the characteristic of casually speaking. Because most of the folk music is created spontaneously by the people, and it is spread from person to person orally. In the process of development and inheritance, folk people make improvements according to their own ideas, reflect the music wisdom of folk people, and provide greater value to our culture.

In addition, folk music is improvised. The communicator sings according to the feeling of the moment. Learners can only practice through listening and vague memory. They lack written records of music scores, so that they are easily left behind. But improvisation is also one of the ways of folk music creation.

Furthermore, some folk music has absorbed the expression skills of rap music in tunes and rhymes, so as to enhance the expression of story situations. When a folk song is widely popular in different places, the personality characteristics of different people in different regions will change the tune of the original song, and the tune of the person's voice will change. In view of the regional, improvisational, oral and collective characteristics of popular music, only oral teaching exchanges have caused folk music to mutate in the process of dissemination.

2. THE EFFECT OF MULTIMEDIA TECHNOLOGY IN FOLK MUSIC TEACHING

2.1 To diversify the teaching and communication of folk music

There are some problems in the traditional music teaching, and the communication form of folk music is usually oral communication. For example, the way of communication leads to the slow speed of communication, and the lack of original meaning in people to people, which has a certain impact on the development of folk music and the learning of future generations. The traditional way of teaching and communication is influenced by many factors, such as economy, time and region. In the new era of rapid development of our country's economy and network technology, multimedia technology has been vigorously developed. With the use of multimedia technology in various fields, it has brought great convenience to folk music teaching and dissemination, and improved the way of dissemination. Under the background of multimedia technology and network technology, the form of communication has undergone major changes, and the following types of teaching communication can be achieved. In terms of the timeliness of communication, the use of multimedia for teaching, through the combination of video and image, can improve the interest of learners, which can make the spread of folk music more objective and more primitive. The network has the spatial characteristics of storing massive resources, which means that, to a certain extent, as the resources of media, it is infinite, that is to say, any information related to folk music can be learned through the Internet, which is impossible in traditional media. The characteristic of network and multimedia technology is that it can not only transmit teaching synchronously, but also broadcast teaching through playback, which is very flexible in communication teaching. In the era of network development, using multimedia technology to teach and spread folk music can effectively improve the quality of teaching communication and promote the development

and inheritance of national culture. [1]

2. 2To make folk music more vivid and vivid

Multimedia teaching makes students no longer just stare at the blackboard, but ensures that the knowledge in the textbook satisfies their curiosity. Listening to music is the art of music expression, and it is also the teaching method of music. If students want to learn folk music, they should first understand music, otherwise the beauty of music will not be experienced. To make students have a clear understanding of the use of multimedia music scene, so that students can have a clear understanding of the use of music. If music is only transmitted by sound, it is difficult for learners to understand and imagine the image of music. However, through multimedia technology to teach, we can build abstract pictures and show them in the form of video, which makes folk music more vivid and vivid, let learners deeply understand the mood and experience of the creators at that time, and combine music emotion with background, so as to deepen the sound matching The impression of happiness. For example, the song "happy moon" uses multimedia technology to create the scene of the creator at that time. Through the understanding of the music image, learners can understand folk music works more easily, thus improving their interest in learning and promoting the sustainable development of Chinese folk music teaching.

2.3 Te ffectively improve learners' aesthetic

In the process of spreading folk music, using multimedia technology to support teaching activities can improve learners' aesthetic ability and interest. Using multimedia technology to create situational teaching mode is of great significance to improve teaching efficiency and the development of national culture. Multimedia has the function of combining sound, video and text. Students can read the text directly, listen to the sound and watch the pictures, and understand the songs in combination with each other. Video can also be played through multimedia to provide vivid scenes. Therefore, multimedia plays an irreplaceable role in the establishment of intuitive teaching environment, which can greatly promote classroom teaching, make students eager to learn, stimulate the desire of knowledge, and establish learning platform for students.The main purpose of the spread and development of folk music is to promote students' aesthetic knowledge and enhance their understanding of the beauty and creativity of music. The essence of music

is aesthetic education, which has gradually formed a consensus in the music world. Therefore, we need to cultivate aesthetic ability, musical expression ability and music creativity of students. In the teaching of Chinese folk music, the introduction of multimedia technology as an auxiliary tool can directly show the beautiful natural landscape and many activity scenes described in songs, so that learners can have a deeper understanding of songs. For example, in the teaching of songs protecting the Yellow River, multimedia technology is used to teach so that students can enjoy the scenes of Chinese people's struggle, feel the heroic image of the Chinese people in interesting images such as color and music, and feel the beauty of folk music from the heart, and promote the development of learners' aesthetic ability[2]

3. CONCLUSION

According to the summary, Chinese folk music has a long history and culture, and it has become a distinctive artistic resource in the world, and it is also a precious cultural heritage of our country. Folk music in various places is full of the true feelings of the local people and is a sign of local customs. How to effectively inherit folk music is a problem that must be solved at the moment. With the rapid development of Internet technology, the combination of multimedia technology and folk music teaching to carry out teaching activities can allow more learners to understand the beauty of it. Multimedia technology has brought great changes to the dissemination of folk music culture, effectively solving the problem of missing original music due to region or time. In addition, multimedia technology can give full play to its advantages in music teaching activities, allowing people to understand and love folks.

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To Improve the Soft Power of National Culture and Promote the Development and Prosperity of Socialist Culture

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Abstract: In today's world economic globalization, the country's cultural soft power plays an important role in the strength of the nation and reflects national unity and creativity, and is the spiritual pillar of the nation. The improvement of cultural soft power can also show that a country belongs to a period of rising. The call of "promoting cultural development and prosperity" was put forward in the People's Congress of our country. In the construction of national socialism, culture can serve as the spiritual pillar of a harmonious society. In any period of development, it is essential to support the culture of developed countries. This paper discusses how to improve our country's cultural soft power and promote the sustainable development of our country's excellent cultural industry.

Keywords: Socialism; Cultural soft power; Prosperity and development

1. OPPORTUNITIES AND CHALLENGES FACED BY IMPROVING CULTURAL SOFT POWER

Since our country has implemented the reform and opening policy, it has gradually grown into an economic and military power in the world. In the context of globalization, every country and every nation can not do without the support of the country's advanced cultural soft power if they want to achieve leapfrog development. The strong cultural soft power provides a steady stream of national cohesion and creativity, which play a key role in national competition. For the development of our country's cultural soft power, to solve the problems that have emerged is an important step to enhance the country's cultural strength and promote the development and prosperity of socialist culture. Therefore, how to enhance our country's cultural soft power and become a cultural power in the world is facing infinite challenges.

The reason why our country's cultural soft power has been greatly improved is that it has developed under the guidance of socialism and the background of economic and cultural globalization, continuous learning and reform. Economic globalization has promoted the development trend of economic and cultural integration, as well as promoted the development of cultural industries in all countries, and the competitiveness of advanced culture has become increasingly greater. The integration of science and technology and culture, as well as the integration of modern science and technology, especially the integration of information and cultural technology, has promoted the development of cultural industries. The progress of science and technology has changed the way of creation, production, dissemination and consumption of art and culture. It has helped to improve the quality of our products and the process of cultural integration, and to accelerate our country's cultural industry in the world. At the same time, the development of the cultural industry has become an important indicator of a country's innovation capability and technological development level. In our country, many cultural enterprises with international awareness and international vision have actively explored overseas markets and made considerable progress.

The cultural industries of major countries in the world are developing vigorously. In many countries, cultural industries have already accounted for a large part of the gross national product. With the increasing opening of domestic market, international cultural industry groups have occupied the Chinese market, and 50 global entertainment media companies have accounted for 95% of the global cultural market, which poses a serious challenge to the survival of our emerging cultural enterprises. At present, the world cultural industry market is dominated by Europe, the United States, Japan and South Korea. For example, major companies in Hollywood try their best to produce films, especially to produce American films. The films are in more than 150 countries and regions in the world, and now 70% of their revenues dominate. European stock markets and the U.S. are increasingly evident in Canada, Latin America, Asia and Oceania. In 1999, American companies produced 57.6% of the world's audiovisual products (including movie tickets, TV shows and home videos).

2. TO IMPROVE CULTURAL SOFT POWER AND PROMOTE PROSPERITY AND DEVELOPMENT

2.1 To build socialist core value system

To improve the national cultural soft power is a problem of creating an atmosphere conducive to improving the moral and ideological level of the whole society. It was mentioned in the People's Congress held in China that the development of the country must first start with the development of national culture, and has been committed to developing the basic core values of socialism and introducing the advanced culture of the country into the whole process of the construction of spiritual civilization and the party. Through the establishment of such a system, we should improve and develop the current situation of socialist culture. In terms of leading the fashion with the socialist concept of honor and disgrace, we should strengthen the education of situation and policy and the moral education of minors. In addition, we should

strengthen the ideological, moral and political education of students, so as to build a healthy growth of young people to benefit the whole society and improve the moral education of teenagers. Through the "three villages" movement of culture, science and technology, prize winning literature and art works will be promoted in schools, schools and barracks, so as to promote the creation of mass spiritual civilization.

2.2 To reform cultural system and implement cultural science and technology innovation

In the development of culture, the implementation of scientific cultural innovation, increasing the investment of funds, and bringing advanced culture into the world, can enhance the soft power of contemporary Chinese culture. The necessary spiritual factors and relevant institutional arrangements of the culture of scientific and technological innovation are the premise of producing scientific and technological creativity. The core of labor-intensive economic growth is input, consumption, production and low efficiency, which is the key to achieve this goal. To liberate and develop cultural productive forces is to emancipate and develop cultural productive forces through scientific and technological progress and further reform of cultural institutions. Through the innovation of our current cultural system, we can accelerate the development of Chinese cultural industry, improve the influence of our culture in the world, and then improve the soft power of contemporary Chinese culture, so as to make the socialist culture develop continuously. The strength of cultural development plays a key role in reflecting the comprehensive national strength of a country, which can reflect whether a country belongs to an economic and cultural power. At present, the development of cultural industry reflects the importance of the correlation between culture and economy. The rapid development of advanced culture is the product of the combination and common development of strong economy and cultural market, and is one of the industries that most directly express the identity and tension of cultural power. With the increase of the value created, the position of cultural industry in the national economy has gradually improved. In the countries with the highest comprehensive strength, the cultural industry has become an important part of development, and the development momentum of each country's culture is strong. At present, there are still many problems in Chinese cultural industry that our advanced culture has not entered into the globalization. Only by speeding up the development of cultural industry can we promote the development of socialist culture and safeguard the national cultural sovereignty and national interests.

2.3 To advocate core value identification and enhance national cohesion

In the process of social development, advocating people's recognition of cultural values can appropriately improve the effectiveness of contemporary Chinese cultural construction, and strengthen the ideological identity of the development of Chinese soft power culture to a certain extent. The strength of national culture is often reflected in the national cohesion, which is mainly the result of accepting the socialist core cultural value. The cultural values in the guidance of socialist core values can plan our cultural development route and development goals well. Since the founding of the People's Republic of China, great achievements have been made in the socialist market economy established in our country. In line with the development trend of economic and cultural globalization, our cultural soft power has been increasingly developed. With the change of the world structure and the adjustment of people's interests, people's thought have undergone profound changes. At this stage, it plays a key role in promoting our prosperity and development by carrying out cultural teaching to enable people to deeply understand our country's history and culture.

3. CONCLUSION

In the context of globalization, our country's cultural development has been effectively inherited and its scale has also expanded. However, compared with other countries with stronger cultural strength, there is still much work to be done. Facing this challenge, we must carefully analyze the competitive advantages and successful industrial development models of foreign excellent cultural industries, accelerate the establishment of a cultural development and reform system, create an environment conducive to cultural development, increase the international reputation of the cultural industry, and contribute to our country's excellent culture to integrate into the international cultural market to open up a path, continuously improve and develop our country's cultural soft power through advanced cultural exchanges with foreign countries, and promote the development and prosperity of socialist culture.

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Tan Carpenter's Strategic Management Case Study

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Abstract: This paper introduces the listed company Chongqing Tan carpenter Crafts Co., Ltd. from the company profile, corporate culture, brand building, financial situation and market leadership, using SWOT analysis and competitive strategy method, analyzes the company's strengths, weaknesses, opportunities, threats and differentiation strategies implemented by the company, and puts forward suggestions for Tan carpenter future development. Tan ChuanHua, the founder of Carpenter Tan, has a bumpy and legendary road to prosperity. His entrepreneurial story is an important foundation for the company commercial publicity and brand building. It is precisely because of his frustrating and legendary life experience and perseverance, his indomitable character, which is not easy to be defeated by fate, has aroused the emotional resonance of countless people, thus driving the company. The sales of the products, played a very good advertising effect. The management center of TAM carpenter Holding Co., Ltd. is located in Hong Kong and Jiangsu, and the factory is located in Sanxia coast, Wanzhou, Chongqing. Beautiful environment, covering an area of 54000 square meters. After more than ten years of development, he has developed into a professional company integrating toiletries and jewelry.
Key words: Tan Carpenter; SWOT Analysis; Competitive Strategy; Brand Building; Corporate Culture

1.INTRODUTION

Chongqing Tan carpenter Handicraft Co., Ltd. was established in 1993, and Sanxia Handicraft Co., Ltd. was officially established in 1997.Adhering to the essence of Chinese traditional handicrafts, we are committed to the R & D, manufacturing and sales of high-quality wooden products with natural, handmade, traditional culture and fashionable modern style. Main wood accessories, wood accessories, car accessories and other home accessories .Up to now, Chongqing Tan carpenter Co., Ltd. covers an area of 54000 square meters, has a long history of 26 years, has more than 40 patents and more than 1200 chain stores, the product qualification rate reaches 98%.

2.BRAND BUILDING

In the mid-1990s, he tried to sell his right-hand comb into a smaller one. In the middle of the 1990s, he tried to make a smaller fish out of the river. This almost desperate attempt to survive, let him in the wood products sub field - wood comb crafts have more vision. Improve technology, hire workers, this small enterprise in Wanzhou, Chongqing, has gradually become a characteristic enterprise that can not be ignored. Of course, Tan ChuanHua experience gives us a new story about disabled people from the very beginning. At first, he got a loan of 290000 yuan. Then he suddenly thought that the newspaper office would spend money on advertising and find a bank loan of 1 million yuan to expand production. People in Wanzhou and even Chongqing can believe that Tan ChuanHua can make a fortune by combing. However, the miracle always belongs to the former private teacher. At the end of 2009, Tan carpenter had 835 franchisees in Hong Kong with annual revenue of more than $65 million and was listed on the China stock exchange at the end of this year.

The brand story of Carpenter Tan is its core competitiveness. In the field of high-end wooden products, there is almost nothing that can compete with its competitors. In addition, the infectious entrepreneurial story of Carpenter Tan also inspires consumers deep resonance for Chinese traditional culture and Chinese national spirit. This brand story conveys five core values: carpenter family, challenging fate, vicissitudes, disabled entrepreneurship and focus. Any of these selling points can give birth to countless great companies, and Carpenter Tan can be one in five. It is natural to win the favor of consumers.

3.FINANCIAL ABILITY AND MARKET LEADERSHIP

Through the analysis of the balance sheet, cash flow statement and income statement of tankapent Holding Co., Ltd., we can see that the company has low financial risk, strong liquidity and profitability, and the company is in good condition. The proportion of fixed assets and long-term liabilities of the company is low, showing a light asset structure. The turnover rate of the company assets decreased and the utilization of assets was not ideal. The company adopts the stable financing, the risk is low, the company is short-term investment, but the investment efficiency is not high. The company share price is undervalued. From the financial point of view, tancapente asset light model has the following characteristics:
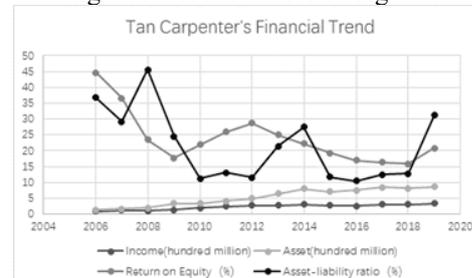
4.SWOT ANALYSIS

Carpenter Tan combines traditional technology and modern manufacturing technology perfectly, uses high-quality raw materials supplemented by exquisite technology, and influences the market with quality, and

breaks out his own world in the fierce competition. Tan carpenter adheres to innovative thinking and keeps pace with the times. It has signed a contract with a famous foreign designer firm to hold a creative design competition of Carpenter Tan handicrafts with different themes every year to pool ideas and create an international brand together with design masters. Instead of adopting the direct operation mode with high maintenance cost, the franchise operation mode is adopted to realize production and marketing control, channel control and brand control..Mr. Tan focuses on the high end wood handicraft market, formulates a high price strategy, and sets a unified national price. There is no discount or price reduction to meet the needs of consumers for high-end luxury brands. Tan carpenter commercial essence and commerce are based on the organic combination of classical traditional culture and dynamic modern culture. The brand of Carpenter Tan is rooted in Chinese traditional culture, which contains rich traditional culture from products, services and retail terminals. In the initial stage of operation, high-quality wooden comb needs large investment, complex technology and high access threshold, which effectively intercepts competitors in the same industry and reduces the threat of potential competitors.

Although it can realize the repair and maintenance restrictions without chain stores, there are many problems in the actual operation process. Many customers report that the maintenance cycle of woodworking products is too long and the maintenance quality is poor. From the perspective of the development expectation of the franchise market, the operating cost has an upward trend, which has brought business pressure to the franchisees, and the sustainable profitability of the franchisees is facing great challenges. Mr. Tan is famous in the domestic market, but his sense of identity in the international market is not as high as that in the domestic market. There is still a long way to go for the world top brands.

5.COMPETITIVE STRATEGY

5.1Basic competitive strategy and competitive strategy implemented by tankapent

The basic competitive strategies that enterprises will adopt are low cost strategy, centralization strategy, differentiation strategy and mixed strategy. Tan carpenter mainly adopts the differentiation strategy. The combs used in people daily life include cheap plastic combs, ordinary wooden combs and high-grade atmospheric wooden combs. In the field of comb, the comb made by Carpenter Tan has no price advantage. In order to distinguish the cheap plastic comb from the ordinary wooden comb, Mr. Tan positioned his products in the field of high-end wooden comb. Carpenter Tan believes that wooden comb crafts not only have real value, but also influence and spread of Chinese culture. When customers give wooden comb gift boxes, they also represent the inheritance of Chinese traditional culture. This concept has been understood and recognized by people, and has been widely spread. While being recognized by customers, Carpenter Tan profit has also been improved.

5.2The reasons for Tan carpenter differentiation strategy

Although carding is a relatively blank market, competitors will consider entering this field because Carpenter Tan has achieved success in this field. Therefore, Tan carpenters has to consider differentiation and differentiate their products from other products to make their brands more competitive. The basic connotation of products is no longer to meet the basic needs of consumers for products, but more to consider the improvement of the technical content of products, and more to meet the improvement of the living standards of consumers. Tan carpenter differentiation strategy is conducive to meet the increasingly diversified consumer needs of customers. In combs market segment, few competitors adopt differentiation method, and the implementation of differentiation strategy helps enterprises to quickly occupy market share. "

Innovation is the driving force of an enterprise and the core guarantee of its development. Carpenter Tan employees originally had wood carving technology foundation and solid craftsmanship skills. These skills are preparing for innovation. The company internal staff have unique creativity. In Tan ChuanHua entrepreneurial stories, there is a little-known story. In order to ensure the quality of products, Carpenter Tan burned 150000 combs. Through this war, Carpenter Tan will win the reputation of the outside world. The high quality and exquisite carving of his products are recognized and pursued by most consumers, which has a certain degree of customer stickiness. Carpenter Tan has a unique technology and a long history in the wood products industry. Since 1997, Carpenter Tan comb has gained a better reputation. After Tan ChuanHua ordered the burning of 150000 combs, he advertised in the media to recruit cooperative banks, which aroused widespread concern in the society. Through this way, Tan ChuanHua obtained a loan of 1 million yuan, which fully reflected the marketing ability of Carpenter Tan.

6.PROSPECTS AND SUGGESTIONS

The author of the company strategic objectives of a more comprehensive comb and analysis. What impressed me most was the legend of Tan ChuanHua, the founder of the company, the company strong sense of social responsibility and the traditional Chinese culture contained in its products. Mr. Tan has a strong market leadership ability and is in a leading position in sorting out this market segment. He is almost invincible and has strong marketing ability. He perfectly combines his own entrepreneurial experience with the product itself to stimulate the emotional resonance of consumers. For the future development of the company, Mr. Tan has the following suggestions. Focusing on the development of overseas markets and taking the high-end route, aiming at the special characteristics of foreign consumers, such as hairstyles and hairstyles, we re-examine the characteristics of the brand itself and foreign markets, and design products suitable for consumers carding. As Mr. Tan Chuanchuan, the founder of the company, said, the secret of Tan carpenter success is nothing but that he is not eager to pursue the growth rate, adhere to a good carding and adhere to the "Integrity, labor, happiness" as the core

of the corporate culture, to do our best to undertake social responsibility.

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Research on the Operating Mode and Feasibility of College Student Music Brand: A pilot Study of Music by Young

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Abstract: Taking *Music by Young* as an example to explore the operating mode and feasibility of college student music brands. We conduct a preliminary analysis of the entire college student music market by investigating the basic situation of *Music by Young*. Based on the internal and external competitive environment and situation analysis under competitive conditions, the main internal advantages, disadvantages, and external opportunities and threats that are closely related to the research object are listed through investigation, and arranged in a matrix form, and then used systematically Analytical thinking, matching various factors to analyze. Using the SWOT method, it is possible to conduct a comprehensive, systematic, and accurate study of the situation of the research object, so as to formulate corresponding development strategies, plans and countermeasures based on the research results.
Keywords: College student; Music brand; College students; SWOT; Music market

I. INTRODUCTION

Music by Young is the most influential music brand for college students in China. This article analyzes the business model and projects of *Music by Young*, so as to understand the factors that promote the continued development of *Music by Young*, and put forward relevant suggestions for the future development of *Music by Young*.

A. Methodology

Collect information through the Internet, the *Music by Young* brand and the official website of the company to which it belongs, and social media reports. Suggest future development through interviews with founders.

B. Analysis methods

SWOT model, Blue Ocean Strategy.

C. Limitation of the study

The limited time and the limitations of the epidemic made it impossible to communicate face-to-face with the company and analyze the financial data that it could make public.

II. BACKGROUND OF MUSIC BY YOUNG

The *Music by Young* brand belongs to Beijing QiaoHe Cultural Media Co., Ltd. The brand started at the *Music by Young* Festival in 2017. It has operated undergraduate music for more than three years and is recognized as the most influential young music brand for university students in mainland China. It is also the only brand in mainland China that focuses on music for university students. It is associated with more than 100 universities across the country and has a unique and most extensive campus music resource. The brand holds more than 100 music festivals and music scenes. In 2019, it launched the National College Student Music Alliance and *Music by Young* College Student Musician Support Program with Beijing and Nanjing as the core, and is committed to promoting overseas students' music exchange.

The following are four representative activities.

A. Music by Young Festival

In 2017 and 2018, *Music by Young* held the largest college student music festival in Beijing. The festival gathers more than 60 bands from more than 40 schools in Mainland China, creates the hottest sounds of the times in the outdoor room, and presents with the older generation musicians of the glorious era Carnival.

B. Music by Young National Union of College Students Music Societies

Music by Young formally established the National Union of College Student Music Societies in 2019. It has 28 universities in Beijing and 15 universities in Nanjing as its core, bringing together the music societies of more than 100 universities nationwide. As of January 2020, it has hosted more than 100 large and small campus music scenes, salons, performances, and competitions. Almost all college student bands in mainland China have been on the poplar stage.

C. Music by Young National College Student Independent Musician Support Program

In 2019, the *Music by Young* brand officially launched the *Music by Young* College Student Independent Musician Support Program. It will conduct campus tours, musician specials, and music festivals. It will produce singles for outstanding original musicians. Now it is expanding to the center of Beijing, And communicate closely with overseas college musicians to help more young musicians mature, walk out of campus, and realize their musical dreams.

III. ANALYSIS THE ORGANISATION

A. Value

Music by Young is not only a link that connects college students' music feelings, but also an important bridge between the new generation of musicians and the music market, as well as enterprises and college students.

B. Mission

1. *Music by Young* has the most extensive university student resources in China.
2. Better discover the new generation of musicians.

C. Vision

1. Promote communication between the enterprise and the college students market.
2. Conducive to making music into live and promoting

people's music consumption.

3. Conducive to the in-depth development of the music industry.

4. Conducive to the spread and development of new generation music.

IV. Marketing

We study market feasibility by SWOT analysis.

A. Strengths

In addition to benefiting the development of college students' music, the brand *Music by Young* has also contributed to the college student market.

This brand uses music as a bridge to promote communication between enterprises and college students. Through offline and online publicity and other promotional methods (such as music festivals, music competitions, online courses, etc.), other brands (electronic products) are quickly, efficiently and conveniently., Education brands, food and beverage, KTV, sports brands, etc.) to enter the college student market, in the most easily accepted way by college students, to meet the needs of cooperative enterprises, and has been widely praised by cooperative enterprises.

B. Weakness (current major problems)

College students are a rapidly updating group. For *Music by Young*, this is both an opportunity and a challenge. The rapid renewal of college students can accumulate an audience for *Music by Young* like a snowball, but if the brand does not keep up with the pace of the renewal of college students, it will also greatly reduce its influence

C. Opportunities

First, there are more than 70 million college students in China. In addition to tuition fees and school supplies, living expenses amounted to 123.42 billion, and related products are ordered to enter the college student market.

Second, college students are both producers and consumers of music. There are many stars from the campus, and the annual expenditure of college students on music amounts to 5.915 billion. This is a huge market.

Third, there are few brands that make college students' music, but they don't focus on making college music.

D. Threats

A good reputation is the key to the success of the brand. Supporting college musicians requires more capital injection, but some companies' sponsorship is merchandise rather than cash.

V. ENVIRONMENTAL SCANNING

On May 9, 2018, the "2016 China Campus Market Development Report" (hereinafter referred to as the "Report") jointly surveyed by the China Campus Market Alliance was released at the "2017 Chinese University Students New Economy and New Media Development Summit". The "Report" shows that in 2016, the total scale of China's college student consumption market reached 685 billion yuan, forming a situation in which basic life consumption is the mainstay, followed by digital products, and education and training and cultural entertainment coexist. Among them, the average monthly meal expenses for college students is 705.8 yuan, and the Engel coefficient is 32%, reaching the level of affluence. Research shows that social media is the first media

information source for college students to obtain commodity information.

VI. SCOPE OF WORKS, PROGRAMMING

Music by Young has organized more than 100 music scenes and competitions for college students. In 2019, it launched the National College Student Music Alliance and *Music by Young* College Student Musician Support Program with Beijing and Nanjing as the core, and is committed to promoting overseas students' music exchange.

VII. Organisation structure and culture (including Board, CEO(leader), staff)

Music by Young is a board of Beijing QiaoHe Cultural Media Co., Ltd.

The founder of *Music by Young* is the general leader of the team. In addition, it also has a campus executive team, marketing team, promotional design team, etc. Each team has 3 to 5 people, and whenever a music event is held, student volunteers will be called in to assist the work.

VIII. Financial Management. (funding sources, revenue models)

I. Public accountability

There are two main social partners of *Music by Young*. The first is a music copyright company. *Music by Young* screens music copyrights from new generation college students to music copyright companies. The second type is businesses that need to enter the college student community. Merchants provide *Music by Young* with sponsorship funds to intervene in music activities to promote products.

II. Propose strategies for future development

I was fortunate to interview the founder of *Music by Young*. The following content is summarized based on her dictation.

With the current popularity and influence of *Music by Young*, it can try to own a physical music art education center, located in the Beijing business district. Based on the brand's resources of college students, performance resources, equipment and teachers of some music schools, *Music by Young* Art Education Center can be a collection of music education (college students, star education) and music dining bar, A new comprehensive music art education center. The activity center aims to provide a place for people who love art to find friends and learn new knowledge. The project will focus on music enlightenment education (bilingual), supplemented by musical instrument education, and use its own brand advantages to set up star experience classes, star interaction classes and other forms to allow more people to feel the charm of music and make music change more Human life.

In the evening, *Music by Young* Music Art Education Center mainly performs art activities combining performances and restaurants, and the performance content is mainly based on the achievements of students. At the same time, stars will be invited to join to enrich the content of the restaurants and bars and create a new immersive enjoyment.

A. Mission

1. *Music by Young* has the most extensive college student

resources and is a convenient channel for communication companies to quickly enter the college student market. Having a physical arts education center is conducive to the promotion of related products for companies that need to enter the college student market.

2. There are many college students eager to learn music, especially those majoring in science and engineering but who love music. This group of people is also an important audience for *Music by Young*.

3. *Music by Young* has accumulated some star resources. College students are an important fan base for celebrities, and they also have powerful consumer star courses. In addition to campus preaching, the use of physical venues to set up star experience classes can better build a bridge between stars and college students, which is beneficial to both sides and is also beneficial to the promotion of *Music by Young* itself.

4. The opening of the music dining bar can provide a fixed performance venue for the *Music by Young* brand, which is conducive to the promotion of the brand.

5. Better discover the new generation of musicians.

B. Vision

1. Promote communication between the enterprise and the college students market.

2. Conducive to comprehensive quality education.

3. Conducive to making music into live and promoting people's music consumption.

4. Conducive to the in-depth development of the music education market.

5. Conducive to the spread and development of new generation music.

III. SWOT analysis

A. Strengths

Music by Young has a high reputation, good brand image and credibility among college students. It has hosted more than 100 campus music events in three years. Almost all college student bands have been on the stage of *Music by Young* in Beijing, and every college student music lover has seen a performance by *Music by Young*.

If it establishes a physical education institution, it will be well publicized.

B. Weaknesses

Although *Music by Young* has a high popularity among college students, but education-related projects do less and lack experience. At the same time, the reputation of the education industry is also very important. If it is not done well, it will affect the brand reputation of *Music by Young* itself. Therefore, it is necessary to establish a sound music education mechanism before implementing the plan.

C. Opportunities

With the development and progress of science and technology, In the market, the musical instrument teaching market has long been mature and has become a fiercely competitive Red Sea.

The music quality education for college students has not yet been fully developed in China, and it is a blue ocean with many opportunities. This is also the direction of the development of *Music by Young* education.

D. Threats

The physical site needs the rent of the site, the operating salary of the personnel, etc., and the cost is relatively high. Therefore, a more complete profit model is needed before the project can be started.

IV. Blue Ocean Strategy

1. The scale of the Internet education industry has grown steadily, and quality education is still the key development direction. In the second quarter of 2019, the transaction scale of the Chinese Internet education market increased by 13.1% month-on-month to reach RMB 117.35 billion, with a year-on-year growth rate of 39.2%. With the steady growth of the industry and the development and application of new technologies, more new scenarios and new models have emerged in Internet education, and the degree of industrial diversification has further deepened. In addition, from the perspective of macro-policy and capital flow, quality education still maintains high popularity, which is a key layout area for major manufacturers.

With the growth of the national economy, the amount and proportion of per capita consumption of education, culture and entertainment of Chinese residents continue to increase, providing an economic foundation for the development of the interest and quality education industry including music education. It is estimated that the transaction scale of the Internet music education market in 2019 will reach RMB 14.50 billion. Under the background that interest quality education is supported by macro factors such as policy, economy, and technology, the growth potential of the Internet music education industry will be further released.

IX. CONCLUSION

Music by Young is an excellent college student music brand with market potential. It maintains the college student population through music feelings, contributes to the new-generation music market, and provides a fast, efficient, and convenient channel for enterprises to enter the college student market. If it can own a physical art center in the future and introduce educational resources, it will have a promising future. If it is possible, I also hope to gain an in-depth understanding of *Music by Young*'s income and expenditure and perform supplementary analysis.

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How to Improve the Communicative English skills as University Students

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Abstract: English is a course that students need to focus on during their studies. Unlike other professional courses, the ultimate goal of English learning is to enhance the English application skills. Oral communication is an important way of using English, and it is also an aspect that university students need to focus on. In the process of learning English at the university level, we should not only focus on our major courses, but also constantly practice enhancing our oral communication skills, so that we can really master the language of English and make practical use of it. This paper briefly analyses the improvement of students' oral communication skills in English.
Keywords: University Students; English; Oral Communication Skills

I. CONSOLIDATE BASIC VOCABULARY AND GRAMMAR KNOWLEDGE

Communicative competence in English is the process of using English to express one's views and opinions in everyday communication and activities, mastering the basic methods and skills of listening and speaking, and being able to complete conversations and exchanges with other people. For university students, English oral communication skills are an important measure of their English learning, and a basic personal ability that contemporary university students should have. In the process of improving our oral communication skills, we need to base ourselves on our actual situation, adopt a variety of improvement strategies, set higher demands on ourselves, and practice our goals in the process of daily learning to promote our own ability development.

Although this ability is more focused on our listening and speaking, basic vocabulary and grammar also play a more important role in the actual oral communication process. Only by mastering a solid foundation of vocabulary, understanding what is commonly used in the process of daily oral expressions, and using basic vocabulary corresponding to what you want to express, can you express your own ideas clearly. In the process of listening to others' expressions, one can also understand exactly what they want to express. Grammatical knowledge is the core of English learning. Only by mastering solid grammatical knowledge can we express what we want to express in the process of oral expressions and avoid the problem of unclear expressions due to the problem of language order. In order to consolidate our vocabulary and grammar knowledge, besides completing the tasks set by our teachers, we should also have the awareness of active learning, develop good English learning habits, be able to use our spare time to memorize English vocabulary and learn English lexical grammar, and apply the vocabulary and grammar we have learned in our daily oral communication process. For vocabulary learning, we should mainly memorize several times, reduce the number of words memorized each time and increase the number of times memorized, so that we can better memorize vocabulary, but also master some methods that are conducive to memory, using a variety of ways to learn the derivation of vocabulary, and for grammar knowledge, we should fully combine the role of example sentences to experience the use of grammar knowledge in the actual English expression.

II. CORRECT OWN MENTALITY

The reason that causes most college students to improve their English oral communication ability is the lack of confidence and the fear of speaking English. In the process of English learning before entering the university, students' English learning mainly focuses on written content, and they improve their English performance through reading and writing, this way can make students more adaptable to the current examination system in China, but it is not conducive to the improvement of students' English learning ability, and it will also make students gradually lose their English oral expression ability, and there are also many students who will not pay attention to the phenomenon of oral expression[1]. In the process of improving one's English oral communication ability, correcting one's own mentality is a very important step and the first prerequisite. First of all, we should realize the importance of oral communication in English, not as an English learning task to complete, but as a way to improve and enrich ourselves, and secondly, we should build up a strong self-confidence and be determined that our oral English communication ability can be improved continuously, so that we can use English and dare to express ourselves in the classroom and in the language communication process outside of class. Many college students have difficulty in overcoming this problem because of their own psychological aspects. As college students in the new era, we should have a high degree of self-confidence and be firm that we can continuously overcome various difficulties on our learning path. For many college students, this is the most difficult step, but a good start is half of success [2]. Once you build up your confidence, correct your mentality and dare to speak English, you will be able to promote your ability to improve one practice at a time.

III. PARTICIPATE IN ORAL COMMUNICATION PRACTICE ACTIVITIES

Compared with the campus life in secondary school, the most significant feature of university study is the increase of various activities, which provide students with a variety

of opportunities, and it is a very good way for us to improve our English oral communication skills by participating in activities related to English oral expression[3]. During our study in school, we should not only focus on completing our major courses, but also participate in various activities to improve ourselves, expand our friendship circle and improve our communication skills. Participating in English communicative practice activities can not only improve your English-speaking skills in the process of expressing yourself in English with others, but also expand your circle of friends and enrich your college life. During the studies at school, there are many opportunities for expression in English classes, and we should actively participate in various types of communicative activities, and if there is a similar situation that need to participate in, we should enthusiastically sign up and actively express ourselves. In addition, we should always pay attention to the relevant English clubs and English corner activities, and after school, if we have enough time and do not have conflicts with the study of professional courses, we should actively participate in English oral communication activities, in the process of participating in activities, we can make our own oral expression to practice, and also in the process of communication with others, form a contrast, enhance our own ability to improve, and They can discover the gap between themselves and others. This kind of communication activity is not only the process of improving English oral communication ability, but also the process of enriching oneself. Because of the diversified content of English oral communication, it is possible to communicate the emotions and learning methods of students with others through this kind of oral communication activity.

4.CONCLUSION

University students are the main force of future social development, with the gradual improvement of China's internationalization and international status, it is very necessary to have strong English oral expression ability. College students should realize the importance of oral expression in English for their own development, cultivate a good sense of English learning and English learning concept, master solid basic English knowledge, improve their oral expression ability and oral expression skills, and be able to use oral expression to complete daily communication and deepen their English learning. During our study period, we need to complete all English learning tasks carefully and actively participate in various English learning activities.

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Talent Training Exploration of Electronic Information Engineering Based On OBE

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Abstract: This paper analyzes the connotation of OBE, it shares some experience in implementing OBE, and it introduces the construction of the talent training system of the electronic and information engineering major of Jilin Engineering Normal University. It introduces the methods used in the professional talent training process of this major from the formulation of the curriculum system, the curriculum construction activities of the teaching and research section, the use of tutors, the content and form of school-enterprise cooperation, and the strengthening of ideological and political education to train outstanding student party members. And finally, it shows that the professional construction adopted the OBE teaching model has unique advantages in guiding students' employment and entrepreneurship, it has achieved certain phased results.
Keywords: OBE; Electronic and Information Engineering; Talent Training; Ideological and Political Education

1.EXPERIENCE OF ADOPTING OBE

Outcome Based Education (abbreviated as OBE) is the ultimate demand for students to acquire the corresponding ability, achieve the expected learning objectives or complete the education. The concept clearly points out that the goal of teaching design and teaching implementation is the final learning achievement obtained by students through the education process. The final meaning of OBE: (1) OBE emphasizes that every student has his own characteristics. As long as he / she works hard, he / she can achieve certain results in his / her studies, but his / her methods or approaches may be different. Moreover, as long as we master the correct methods and approaches, we will gain more. (2) OBE emphasizes personalized development and evaluation. According to the differences of each student, different gradients of scientific assessment grades are formulated. The students' learning status is obtained through scientific assessment, and the teaching methods adopted are corrected in time according to the results. (3) OBE emphasizes delicacy. Results the evaluation should be based on whether the students are proficient in the content. Each student needs to be provided with appropriate learning methods and methods, and they can achieve the effect of learning improvement. (4) OBE emphasizes performance responsibility. Schools need to set up scientific evaluation methods, and can improve the basis of sunrise, so that students understand their learning effectiveness, and increase their initiative. (5) OBE emphasizes competency based. The ultimate goal of education is to endow students with corresponding abilities. Therefore, education can make students acquire corresponding abilities by setting corresponding courses. It can also be understood that there is a certain corresponding relationship between curriculum setting and the final cultivation of negligible.

The student should first be clear about the learning results by adopting OBE is the final learning achievement. Of course, it was used as a starting point to enable students to be targeted, and the achievements should be finally evaluated, or converted into performance indicators. Secondly, the school should construct the curriculum system. Learning achievement represents a kind of ability structure, which should have a certain mapping relationship with the curriculum system. It can also be expressed as that the acquired ability is obtained from the curriculum. Therefore, the construction of curriculum system determines whether the ability structure can be obtained effectively, which is the key of OBE. Thirdly, teachers should adopt differentiated teaching strategies for students. OBE mode is ultimately based on the acquisition of students. Therefore, teachers should be able to take differentiated training according to the special situation of different students in the teaching process..

2.THE CONSTRUCTION OF OBE

In order to cultivate professional and technical talents, it mainly carries out the following construction contents:

The college sets up a professional teaching system construction group to strengthen the construction of OBE. The college has set up a professional teaching system construction group, which is composed of college leaders, teaching and research section directors, enterprise experts and professional backbone teachers. With reference to the construction experience of brother colleges at home and abroad, combined with its own advantages and characteristics, the college fully meets the talent needs of enterprises, and formulates a set of curriculum system that meets the characteristics of students and the minimum graduation requirements of applied talents training program When the program was formulated, the training objectives and graduation requirements of students were put in the first place. The whole talent training plan was formulated through the result orientation, the professional ability of students was sorted out by the positions to be engaged in, and the corresponding courses were set up through the professional ability, and a complete and scientific talent training framework of electronic information engineering was formed.

The teaching and research section regularly carries out teaching and research activities to improve OBE teaching courses.

In order to implement the OBE, the teaching and research section of electronic information engineering carries out some theoretical and practical teaching activities on OBE

teaching. We can learn the teaching methods and teaching means of other teachers at the meeting, which can effectively find out and make up for deficiencies, and modify and improve the personal teaching methods and teaching means of teachers. Through communication and learning activities, the effectiveness of teaching methods and teaching contents of teaching and research section is maintained.

The tutor mode it organize students to set up research groups and carry out teaching and research activities.

Students are divided into several groups. Students in the group from their usual study, teaching and research activities, participating in various electronic design, innovation and entrepreneurship competitions, graduation thesis and final employment, the whole university process is completely tracked and guided by the instructor. The group starts from the first exchange meeting to sort out the learning objectives, and holds regular group meetings, mainly in the form of heart to heart talk, so that students can show their achievements and plans to other students. We should give full play to the advantages of various competitions, publicize and implement the advantages of the competitions in advance, actively encourage students to participate in the competitions, sort out the learning objectives, promote learning by competitions, make good use of various teaching competitions, and comprehensively implement the teaching concept of OBE. School enterprise cooperation, in the curriculum and environment to create a good position for students to grow. Enterprises are supported to participate in the construction of curriculum system, and experts and teachers from the industry are invited to set up corresponding professional elective courses, so that enterprises can also participate in the teaching process of talent cultivation. Teachers of professional courses can have close contact with enterprises, connect the teaching contents with the requirements of enterprises, and focus on the practical contents of enterprises involved in the theoretical course explanation, so that students can finally achieve the unity of knowledge and practice. Organize students to visit and practice in well-known domestic counterpart enterprises, so that some students with professional learning interest can participate in the study of enterprise courses, enable students to contact enterprises and understand enterprises more, and at the same time, students can set up personal goals as soon as possible by broadening their professional vision.

Improve the feedback and evaluation mechanism of talent training, and track the feedback of graduates and social evaluation.

The College of information engineering has set up a leading group for graduate tracking survey and information feedback, with the dean as the group leader, the deputy secretary in charge of student affairs and the vice president in charge of teaching as the Deputy group leader, and the professional teachers as members. The leading group is responsible for studying and formulating plans and measures for the follow-up investigation and

information feedback of graduates. Through telephone, wechat or face-to-face communication, the paper conducts a detailed investigation on several key contents, such as suggestions on the setting of professional courses and practical links, learning and working experience, and personal ideas on the school's professional construction. The survey data are sorted out to form a report and sort out various needs The problems to be concerned are fed back to the vice president of teaching and the professional director for continuous improvement of specialty construction.

3.SUMMARY OF IMPLEMENTING OBE

OBE is widely used in the construction of curriculum system and teaching and research work, and a set of structure and system of learning output evaluation driven by learning output is constructed, which is applied to specialty construction and practical teaching. Through the construction in recent years, our college students have achieved excellent results in various competitions year by year. In 2020, the college students' innovation and entrepreneurship training program and the "Internet plus" College Students' innovation and entrepreneurship competition were selected. 7 projects were identified as national level projects, and 4 were electronic information engineering majors. Finally, 3 projects were recommended to the provincial "Internet plus" College Students' innovation and entrepreneurship competition, and electronic information engineering majors accounted for 2 projects. At present, the electronic information engineering specialty is exploring a talent that meets the development of the province and the country.

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Research on Characteristics and Teaching Methods of Table Tennis Club in Colleges and Universities

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Abstract: With the advancement of quality-oriented education, the status of physical education has gradually improved. Therefore, continuous innovation of teaching models has become the main problem of improving the quality of physical education in colleges. And table tennis clubs should take lifelong sports service as an important guiding ideology, and teach students in accordance with their aptitude in the teaching process, so as to cultivate students' interest in playing table tennis. This paper mainly analyzes the teaching characteristics of table tennis clubs, stimulate students' learning autonomy and improve students' self-management ability in a hierarchical way of teaching, so as to effectively analyze the teaching methods of table tennis clubs.
Keywords: Table tennis; Clubs; Characteristic teaching

1. INTRODUCTION

With the advancement of the reform process of physical education, it is imperative for colleges and universities to reform the table tennis curriculum. Table tennis sport is "national ball" in our country, its mass foundation is relatively solid, and college students also like this sport very much. However, under the traditional teaching mode, there will be a phenomenon that students love table tennis sport but reject table tennis courses. Therefore, in order to cultivate students' interest in the table tennis course, the course should be developed with an innovative teaching mode. The teaching mode of club enables students to occupy the dominant position in the learning process and is more conducive to stimulating students' interest in learning.

1.1 Stimulating students' interest in learning

As a teacher of college table tennis club teaching, he has strong professional ability and can give students more professional guidance in the teaching process. The students who join the table tennis club must also like table tennis very much. Under the impetus of their hobby, students can also participate in learning more actively, so that they can better master table tennis skills. At the same time, students will effectively improve their table tennis skills among students, which will encourage students to become more interested in playing table tennis, and form a more virtuous circle.

1.2 Stimulating students' learning autonomy

Starting from the characteristics of table tennis sport, table tennis clubs usually adopt two teaching methods in the teaching process, including multi-ball teaching method and teaching method. These two teaching methods let students choose according to their own actual situation, and the difficulty of practice is also selected by students themselves. In this way, students can start from their own physical fitness level and make appropriate adjustments to exercise intensity, which gives full play to the student's dominant position in learning to a certain extent and promoting students' autonomous learning.

1.3 Cultivating students' good exercise habits

Table tennis club teaching has a certain stimulating effect on stimulating students' learning initiative. In group teaching, students' learning progress can be adjusted appropriately according to the group's situation, which is more conducive to students' mastery of table tennis skills. Therefore, under the principle of teaching students in accordance with their aptitude, it is helpful to the individualized training of students, and enables students to fully master specific sports skills, and encourages students to exercise regularly in this sport. At the same time, students participate in the learning of the table tennis club out of interest. Table tennis is not only an interest for them, but also a means of fitness and entertainment. Moreover, students can take the table tennis club as a platform to broaden their communication, which helps to cultivate students' social adaptability [1]. Therefore, in college table tennis club teaching, students can effectively cultivate good sports habits and help them form the concept of lifelong sports.

2. THE TEACHING METHODS OF TABLE TENNIS CLUB IN COLLEGES AND UNIVERSITIES

2.1 To conduct stratified teaching and teach students in accordance with their aptitude

As we all know, there are certain differences between people, and so are college students. Table tennis, as a skill sport, can highlight the gap of students' sports level. If students' differences are not taken into account in the teaching process, but the same standards, teaching contents and evaluation standards are used, the poor students will be incomplete, and the good students will be more than adequate. The use of table tennis club teaching is a breakthrough to the traditional teaching method. It is aimed at the individual differences of students, including the differences in the technical level and physical quality of students. The teaching effect of table tennis is further improved by means of hierarchical teaching. At the same time, for the students with poor foundation and low comprehension, teachers should give more patience, demonstrate and explain the knowledge for them, and help them establish confidence by encouraging them, so that

students can master the technical essentials of playing table tennis more accurately. On the contrary, for students with good foundation and strong insight, teachers can appropriately improve their requirements so that such students can learn higher skills.

2.2 To carry out table tennis teaching by team learning

Table tennis is a sport that requires the cooperation of two people to complete, and the antagonism and fun of this sport can be better reflected when the two players have small differences in level. Therefore, in the hierarchical teaching mode, students can be guided to choose classmate with the same level to practice in groups, so as to achieve common progress. Then, several groups of students form a table tennis team, and a stronger student can be chosen as the team leader. The team leader's responsibility is to guide and help the team members according to the teacher's guidance. Through the relevant teaching practice, it is found that this teaching mode enables students in the club to continuously improve their table tennis skills in mutual encouragement and supervision, and also enables students with poor foundation to reduce the burden in their hearts, so that they can effectively improve their self-confidence under the continuous consolidation of their own table tennis foundation. In addition, through the strong students to guide the poor students, students get common progress and reduce the workload of physical education teachers to a certain extent. This method is conducive to cultivating students' sense of responsibility, so that students can gradually form a friendly friendship in the learning state of mutual help and mutual supervision, to improving the teaching quality and efficiency of table tennis courses [2].

2.3 To develop students' self-management ability in the way of competition

In the process of table tennis teaching in colleges and universities, the most critical teaching link is the confrontation game. Through the confrontation game, students can effectively improve their own skills, strengthen their on-the-spot ability, effectively improve their competitive level, and further cultivate their psychological quality. In addition, in the process of confrontation, students not only can improve their table tennis competitive ability, but also can improve their planning ability and organizational ability, which has a good role in promoting the overall development of students. At the same time, the game method used in table tennis club teaching not only includes higher-level table tennis matches, but also includes competitions between lower-level teams, and teachers are not responsible for organizing students to compete. No matter what level of competition, they are organized by students themselves, teachers are responsible for providing venues, technical guidance, and competition results will be part of the student assessment. In this way, it can effectively stimulate students' autonomy, encourage students to actively participate in the activities of table tennis club, effectively cultivate students' good sports habits, let students really like table tennis courses, and further improve their table tennis skills.

3. CONCLUSION

From the above, in the teaching of table tennis courses in colleges and universities, the teaching method of clubs is different from traditional teaching concepts. It respects the individual differences of students. It starts from the actual situation of students and carry out targeted teaching to students to meet the individual needs of students. Therefore, in order to better exert the teaching efficiency of club teaching, it is necessary to continuously innovate teaching methods and use brand-new teaching concepts to promote the further improvement of table tennis teaching courses.

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A Course Recommendation Method for Online Teaching Platforms Based on AHP

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Abstract: Aiming at the lack of personalized course recommendation for learners in online teaching platforms, this paper proposes an intelligent course recommendation method based on analytic hierarchy process (AHP). First, the multiple factors that influence the learners' choice of courses need to be studied and analyzed to establish a reasonable analytic hierarchy process model for course recommendation. Then, the judgment matrix is constructed according to the learners' preference. Finally, the weight vector is calculated and then used to evaluate the courses. Thus, the purpose of intelligent course recommendation for learners can be achieved.
Keywords: AHP; Online Teaching; Course Recommendation

1. INTRODUCTION

In recent years, with the development of network and communication technology, the construction and sharing of learning resources presents a new development trend. Various online classes, MOOCS, live classes and so on are springing up. And various online teaching platforms and learning applications are emerging one after another [1][2]. When learners join in online studying, they are often dazzled by all those huge supplies of courses and resources and feel very difficult to find their required courses effectively and accurately. To address above issues, this paper proposes to introduce the analytic hierarchy process (AHP) of data mining into online education in order to achieve the purpose of intelligently recommending courses to the learners and improving the efficiency of the learners' online course selection.

2. THE ANALYTIC HIERARCHY PROCESS

In daily life, people often encounter decision-making problems that need to consider multi-dimensional and multi-level factors. The Analytic Hierarchy Process proposed by Thomas L. Saaty, an American operational research scientist, can well solve such problems [3]. AHP is a qualitative and quantitative, systematic and hierarchical analysis method [4]. Generally, the influencing factors of the problem will be separated according to the final goal to be achieved, and each factor will be hierarchically divided according to the logical relationship between the factors to form an analytic hierarchy process model. After that, qualitative and quantitative analysis is carried out step by step to determine the weight allocation scheme from the target layer to the lowest factor layer, so as to provide the final decision-making method [5][6].

When the learners of online teaching platform have no clear learning objectives, it is difficult to make suitable choices in the face of a large number of course resources. At present, the common way for course selection in online teaching platform are mainly classified browsing and keyword searching [7]. The efficiency of classified browsing is very low. And keyword searching is only suitable for those learners who have very specific needs. When a lot of learners enter the online teaching platform, they find themselves cannot match their interests and needs with the provided course resources. Analytic hierarchy process can decompose the learners' interests, needs, knowledge background and other factors related to the selection of courses, and use matrix eigenvalue and eigenvector operation to recommend courses that meet the learners' needs by mathematical calculation [8].

3. A COURSE RECOMMENDATION METHOD FOR ONLINE TEACHING PLATFORMS BASED ON AHP

The goal of this study is to recommend suitable courses for the learners in online teaching platforms. Its main idea is as follows. First, analyze and decompose the factors that affect the learners' choice of courses, and determine the judgment indexes. Second, establish the hierarchical structure model of course recommendation, and determine the AHP index system. Then, construct the judgment matrix according to the relative priority relationship between the factors or indexes. Finally, after the consistency of the judgment matrix is verified, the weight vector for the factors is calculated and then can be used to evaluate the courses not learned and produce recommendation course list for the learners according to the evaluation results. For the convenience of research, we assume that all the online courses on platforms have already been labeled with tags that match the learners' preference factors.

(1) Learners' Preference Learning
The first step of our recommendation method is to study the learners' preferences. The factors influencing the learners' choice of courses should be decomposed into certain preference criteria. Preference criteria are the basis of using analytic hierarchy process to recommend courses. In order to improve the accuracy of course recommendation, it is necessary in the learning stage to scientifically and reasonably figure out the adequate criteria that can really represent the learners' preferences, such as their knowledge background, education level, interest categories, expectations, etc. These factors correspond to the index system below.

(2) Establishing the Analytic Hierarchy Process Model for Course Recommendation
Suppose there are many courses for the learners to choose, including course *1*, course *2*, ..., course *n*. Comparisons need to be made among the *n* candidate courses according to their tags matching with the learners' preference criteria, such as course direction or field, difficulty degree, time

requirements and other criteria, so as to establish a hierarchical structure model for AHP. In the hierarchical structure model, the optimal course is in the goal layer at the top, every criterion or index or factor is in the middle criteria layer, and all the candidate courses are in the decision layer at the bottom, as shown in Figure 1. By means of investigation, interview, case study and literature review, we pursue to summarize and develop a sophisticated factor index system required by the criteria layer, revise and improve the index specifications and requirements. The improved index system will later be fed back to the above preference criteria acquisition. The determination of the criteria index system at early stage is of most importance.
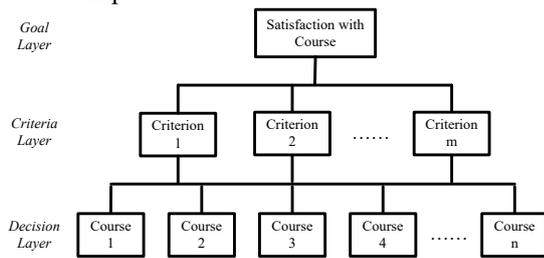

Figure 1 AHP model of course recommendation

Due to the complexity of various factors affecting course recommendation, in order to meet the needs of the learners more accurately, there may be more than one level of evaluation index system based on analytic hierarchy process. In addition, during the use of AHP, if an adopted criterion or a factor index is unreasonable, its meaning is not clear, or the relationship between the factors is not correct, it will reduce the quality of the results of AHP, and even lead to the failure of AHP decision-making. Therefore, to ensure the rationality of the hierarchical structure, the following principles should be observed: a) when decomposing and simplifying problems, the main factors should be grasped without omission or redundancy; b) attention should be paid to the relationship between the strengths of comparative factors, and the factors that are obviously different in strengths should not be laid at the same level.

(3) Constructing Judgment Matrix at Each Level

The judgment matrix is used to evaluate the relative importance of each factor in the upper level. Taking Figure 1 as an example, relative to the level of each index, the "optimal course" is the factor of the upper level. So, for the "optimal course", the relative importance between the factors of the lower level should be evaluated.

Assuming that we want to compare the influence of m low-level factors $Y = \{y_1, y_2, ..., y_m\}$ on a higher-level factor X, Saaty suggests that pairwise comparison of factors can be adopted to establish a paired comparison matrix. That is to say, take two factors y_i and y_j at a time, and use c_{ij} to express the ratio of the influence of y_i and y_j on X. All the comparison results are expressed by matrix $C = (c_{ij})_{m*m}$, which is called paired comparison judgment matrix between X and Y (judgment matrix for short). As for how to determine the value of c_{ij}, Saaty suggests to use the numbers 1 to 9 and their reciprocal as the scale [9], as shown in Table 1.

Table 1 Saaty's 9 scale method

Scale	Definition
1	Equal importance
3	Moderate importance of one over another
5	Essential or strong importance
7	Very strong importance
9	Extreme importance
2, 4, 6, 8	Intermediate values between the two adjacent judgements
Reciprocals	If the ratio of the importance of factor i to factor j is a_{ij}, then the ratio of the importance of factor j to factor i is $a_{ji}=1/a_{ij}$.

The process of constructing judgment matrix is to judge the influence of each factor index on a certain higher-level factor. After comparative analysis and considerate research, a judgment matrix can be derived as shown in Table 2.

Table 2 Importance judgment matrix C between factors

Factors	*F1*	*F2*	*F3*	*...*	*Fm*
F1	*1*	c_{12}	c_{13}	...	c_{1m}
F2	c_{21}	*1*	c_{23}	...	c_{2m}
F3	c_{31}	c_{32}	*1*	...	c_{3m}
...	...	...	...	...	...
Fm	c_{m1}	c_{m2}	c_{m3}	...	*1*

(4) Checking the Consistency of Judgment Matrix

When comparing multiple factors, people may make logical errors, such as "A is more important than B, B is more important than C, and C is more important than A". To ensure that the obtained judgment matrix will not produce logical errors, and meet the consistency and transitivity between factors, and provide reliable input for subsequent weight calculation, it is necessary to check the consistency of the constructed judgment matrix.

The consistency checking rules designed in this paper are as follows. It is assumed that the consistency index is CI, which can be calculated as:

$$CI = \frac{\lambda_{\max} - n}{n - 1}$$

Here, n represents the order of matrix A and $\lambda_{\max}$ is the largest eigenvalue of matrix A. The smaller the CI, the greater the consistency. Considering that the deviation of consistency may be caused by random reasons, when testing whether the judgment matrix has satisfactory consistency, it is necessary to compare CI with the average random index RI to obtain the consistency ratio CR, which can be calculated as:

$$CR = \frac{CI}{RI}$$

RI is related to the order of judgment matrix. In general, the bigger the order of the matrix, the greater the probability of consistent random deviation [10]. Generally, the matrix order is between 3 and 10, and the corresponding relationship is shown in Table 3 [11]. When $CR < 0.1$, it is considered that the consistency of the judgment matrix is acceptable. Otherwise, it is not satisfied with the consistency, so it is necessary to modify

the pairwise comparison judgment matrix.

Table 3 The relation between *RI* and matrix order

Order	3	4	5	6	7	8	9	10
RI	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

(5) Calculating Weight Vector

After the judgment matrix passes the consistency checking, the eigenvector corresponding to the maximum eigenvalue of the judgment matrix is normalized to get the weight of each index.

(6) Course Evaluation and Recommendation

The final evaluation score of each course is obtained by the weighted sum of the scores of each index. At last, all the course evaluation scores are sorted, and the top-N recommended course list is generated. As the weight vectors of different types of learners may be different, the course evaluation scores for different learners are also different, forming a personalized course recommendation ranking list for each learner.

4. CONCLUSIONS

In order to solve the problem of insufficient relevance between the learners and the course resources in online teaching platforms, this paper proposes an intelligent learners oriented course recommendation method which is based on the analytic hierarchy process. First, the multiple factors that influence the learners' choice of courses need to be studied and analyzed to establish a reasonable analytic hierarchy process model for course recommendation. Then, the judgment matrix is constructed according to the learners' preferences. Finally, the weight vector is calculated and then used to evaluate the courses. Thus, the purpose of intelligent course recommendation for the learners can be achieved.

The recommendation method proposed in this paper can greatly improve the efficiency of the learners in selecting course resources and reduce their blindness in course browsing and searching. The purpose of this study is to provide a certain method reference for the online teaching platform in the process of connecting the learners and the education resources. The optimization of the application process of AHP and the practice in the actual online teaching resource platforms still need to be strengthened.

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On the Humor of the comedy skit *Set Your Heart at Rest* from the Perspective of Pragmatic Presupposition

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Abstract: Pragmatic presupposition plays an important role in the generation of verbal humor. Based on the comedy sketches called *Set Your Heart at Rest* in the Spring Festival Gala of the Year of the Monkey, this paper discusses the generation of linguistic humor effects from the perspective of misinterpreting pragmatic presupposition, resetting pragmatic presupposition, adapting pragmatic presupposition, and pragmatic presupposition conversion.
Keywords: Humorous Effects; Pragmatic Presupposition; *Set Your Heart at Rest*

1. INTRODUCTION

Humor plays an important role in our daily communication and gradually becomes an vital part of our life. People's language expression, facial expression, and body movement can produce humor. Humorous language is not only an art, but also the embodiment of human wisdom wisdom, which can bring happiness to our life.

As far as linguistics is concerned, the majority of scholars have studied the language of humor, but the research based on pragmatic presupposition theory is rare. Based on the theory of pragmatic presupposition, this paper studies the humorous speech acts of the actors in the comedy skit *Set Your Heart at Rest.*

This thesis attempts to analyze the humorous language of the comedy skit *Set Your Heart at Rest* from the perspectives of misinterpreting pragmatic presupposition, resetting pragmatic presupposition, adapting pragmatic presupposition, and pragmatic presupposition conversion. The comedy skit *Set Your Heart at Rest* is a program on the Spring Festival Gala of the year of the monkey in 2016. The language of this comedy skit is featured by humorous, which is easy to understand, straight to the theme, and full of thought-provoking. The comedy skit is based on the daily life of the common people, taking the common events of telecom fraud as the prototype to design this comedy skit. This comedy skit dares to expose the social reality and directly attacks the weakness of the legal society, and thus it has great educational significance and gives the audience a lesson.

2. PRESUPPOSITION THEORY

Presupposition theory is an important theory in pragmatics. Presupposition originated from a concept of philosophy. In 1892, the concept of presupposition was put forward by Frege, who is the founder of modern logic and he is also a famous German philosopher. Presupposition refers to the hypothesis made by the speaker when speaker speaks a certain utterance or sentence, that is, the premise that the speaker must satisfy in order to ensure the appropriateness of the sentence or speech.[1]Presupposition can be divided into two categories: semantic presupposition and pragmatic presupposition. Generally speaking, semantic presupposition is characteristic by objective and static. Semantic presupposition is far away from context, in other words, it is the analysis of sentence itself; while pragmatic presupposition is featured by subjective and dynamic, and pragmatic presupposition must depend on context.[2]

Semantic presupposition refers to the semantic relationship between two propositions, that is, whether a sentence is correct or not must satisfy certain preconditions. In a word, any sentence will have a corresponding semantic presupposition. [3]

Pragmatic presupposition refers to that some people are very sensitive to context, which may be related to the views, attitudes, and thoughts of the speaker or the hearer. [4] Pragmatic presupposition involves many aspects, including the speaker, the hearer, the context of the context, cultural background knowledge, and other factors. Pragmatic presupposition usually occurs when both sides of the communication know a certain information or can rely on the context of the context to infer the information, so this kind of information does not need to be expressed at all. [5] Generally speaking, pragmatic presupposition has the characteristics of generality, subjectivity, and unidirectionality.

3.THE APPLICATION OF PRAGMATIC PRESUPPOSITION IN THE COMEDY SKIT *SET YOUR HEART AT REST*

The theme of the comedy skit *Set Your Heart at Rest* is to be honest and trustworthy and treats each other sincerely. As we all know, honesty and trustworthiness is not only a virtue, but also an excellent traditional Chinese culture. Sun Tao, Shao Feng, Wang Hongkun, and Li Yilun participated in the comedy skit. Among them, the actor of Sun Tao plays the role of patient; the actor of Wang Hongkun plays the role of uncle, that is Shao Feng's father; the actor of Shao Feng plays the role of Xiao Shao; the actor of Li Yilun plays the role of passer-by.

3.1 Misinterpreting Pragmatic Presupposition

The misinterpreting pragmatic presupposition refers to the humorous language effect behavior caused by either the speaker or the hearer destroying the common knowledge in the process of communication. The so-called common knowledge refers to that the content of presupposition is the knowledge system and language environment shared by both sides of communication, or the common cultural background knowledge of both sides of communication,

which can maintain the effectiveness of communication.[6] All in all, for the first thing, if the speaker and the hearer lack the common knowledge and information in the process of communication, there will be communication barriers, leading to misunderstanding and at last, it can create humor. For the another thing, even if the speaker and the hearer share the same knowledge, but due to the subjective initiative of the individual, the speaker will destroy the inherent knowledge framework of the hearer and it may produce humorous speech acts. For example:

Eg1: Sun Tao: Happy new year, everyone, ... I succeeded. I succeeded in the hospital.... Succeed!

Example one is the first act of the opening of the comedy skit *Set Your Heart at Rest*. Sun Tao comes out with new year's greetings. In example 1, Sun Tao and the audience share the same knowledge. In the audience's mind, "success" means that a person has successfully accomplished something. But then Sun Tao said that he had been hospitalized successfully, which made the audience's expectations fall short, thus producing a humorous speech effect. In addition, in the last sentence of this passage, buying a neckerchief in red means success. In the audience's mind, they don't have the knowledge information at all, which leads to misunderstanding, and finally the effect of humor is produced.

Eg2: Shao Feng: ouch, dad! Sun Tao: ...I'm the dog!... Shao Feng: (laughter) ouch!... Sun Tao:..., I'm not a liar...

In example 2, Sun Tao, Shao Feng, and the audience share the same language environment. Shao Feng knows what the canine branch means, mentioned by Sun Tao, and the audience also knows what it means. This is what happened. During the first conversation between Sun Tao and Shao Feng, Shao Feng suggested that Sun Tao changed his heart. It is known to us all that dogs belong to the canine family, and it is abusive to say who is a dog. Obviously, Shao Feng scolded Sun Tao for not being human. The first conversation between them ended in an unhappy atmosphere. Therefore, when Sun Tao said that he was the canine, it fully met the psychological expectations of the audience, which caused a humorous effect, and finally all of people secretly laughed.

Eg3: Sun Tao: ... What did I do? Shao Feng: What have you done? Do not you know it? ...succeed!

The conversation in example 3 takes place in the second call between Sun Tao and Shao Feng. Shao Feng, who had received a telephone call of Telecom fraud before, no longer believed anyone. During their first call, Shao Feng indirectly called Sun Tao a dog, which made Sun Tao angry. In this exchange, Shao Feng directly regarded Sun Tao as a bad man and carried out moral education. Shao Feng directly borrowed Chinese traditional culture and taught Sun Tao a lesson. The justice, honesty, and filial piety mentioned in Shao Feng's speech are all common knowledge and are excellent traditional Chinese culture. In addition, the sentence of "A man is thinner than a yellow flower", mentioned Shao Feng, is derived from Li Qingzhao's Song Dynasty's *Drunken haze, thick clouds, sorrow of the day*. The poem wants to express the meaning that a person is even thinner than the yellow flower, which just coincides with *Not much meat*, and the language

expression is very interesting. Similarly, Chinese culture's doggerel *The skin is thicker than the wall* and *Bullets don't penetrate* echo one by one, and the language expression is very humorous and vivid. As Chinese people, we all know these cultural backgrounds, but Shao Feng's use of these as a metaphor for Sun Tao is not appropriate, which leads to humorous speech acts, and finally it makes the audience laugh.

Eg4: Wang Hongkun: Did you say that?! Sun Tao: I didn't say that. Wang Hongkun: Did he say that about you? Sun Tao: A concubine can't do that!

This dialogue in example 4 is one between Sun Tao and Wang Hongkun, who is the Shao Feng's father. Sun Tao told Wang Hongkun about Shaofeng's accusation that Sun Tao was a dog. After hearing this, Wang Hongkun was very angry and called for Sun Tao to fight back. However, Sun Tao said: a concubine can't do it and this made the audience laugh. It is known to us all that this sentence "a concubine can't do it" belongs to the lines in the large-scale palace drama *Legend of Zhen Huan*. The situation is like this, when the emperor let the queen hate himself, the queen cried out: "do you think I don't want to, a concubine can't do it!" Since then, this sentence has become the Internet buzzwords, and has been used by many people in various situations. Sun Tao used this sentence to reply to Wang Hongkun's question and It was very funny and totally unexpected, thus creating a humorous effect.

Eg5: Sun Tao: good! In ancient China, there was a militarist named Sun Tzu? How do you say Shao Feng? Sun Tao: are there pits on the road that you don't walk on?... Shao Feng: ah, I've heard of it. Sun Tao: what have you heard? My name is sun. I said that!

The dialogue in example 5 takes place after Sun Tao and Shao Feng have a meet. At that time, Wang Hongkun and Li Yilun are also present. Shao Feng and Sun Tao had three conversations before, and all ended with Shao Feng reprimanding Sun Tao. It is clearly known that Sun Tao is full of grievances, but can not solve them. After Sun Tao and Shao Feng met each other, Sun Tao can not help but express his depression. At the same time, Shao Feng soon realizes that he had wronged Sun Tao before, so he is very ashamed to listen to Sun Tao's anger. As Chinese people, it is notorious that there was a military strategist named Sun Tzu during the spring and Autumn period and the Warring States period, and he wrote *The Art of War*. However, these next words said by Sun Tao's are not uttered by Sun Tzu in ancient China, but these words are made up by Sun Tao to educate Shao Feng. This completely destroys the knowledge framework in the audience's mind and causes humorous language effect, which makes the audience applaud.

3.2 Resetting Pragmatic Presupposition

The resetting pragmatic presupposition refers to the fact that one of the speaker and the hearer changes or cancels the previous pragmatic presupposition consciously or unconsciously, and then utters contradictory utterances through resetting the pragmatic presupposition. In a word, the resetting pragmatic presupposition means that the speaker intentionally or unconsciously guides the hearer to accept a pragmatic presupposition, but then he or she

will negate and utter the words contrary to the presupposition, thus causing a great psychological gap and finally forming humor. For example:

Eg6: Shao Feng: Well, old sun, do you want to be cured completely?... Sun Tao: Oh, how about animals?... Sun Tao: dog! Wolf dog, wolf dog, are you stupid? Shao Feng :(audience applauds) right, right, and right, you are all dog family! Sun Tao: Yes, the matched-typed worked.

This conversation in example6 takes place in the first conversation between Sun Tao and Shao Feng. Shao Feng thinks that Sun Tao is the one who cheated on the phone, so Shao Feng sneers at Sun Tao. After learning that Sun Tao has a heart disease, Shao Feng deliberately says that he wants Sun Tao to change the heart of an animal, which can be the heart of a wolf. However, when all of people accepts this sentence, Shao Feng deliberately guides Sun Tao to say that he should change the heart of a dog. As we all know, dogs are used to curse people. Thus, Shao Feng indirectly scolds Sun Tao for not being an individual. The audience also knows Shao Feng's implied meaning, which produces a humorous language effect and causes a burst of cheers from the audience. More interesting is, Shao Feng also come a sentence: you are all canine, and this sentence is more interesting! According to our common sense, it is known to us all that Canidae refers to the medium and symmetrical body, which is conducive to running, including wolf, dog, and human and so on.

3.3 Adapting Pragmatic Presupposition

Adapting pragmatic presupposition refers to the speech act in which the speaker guides the hearer into the pragmatic presupposition, and then communicates according to the speaker's own thoughts and communication methods, so as to realize the speaker's purpose and intention. Finally, it will destroy the hearer's psychological expectation and cause humorous speech acts. For example:

Eg7: Sun Tao: Oh, yes, yes. Shao Feng: Hello, who is it?...Sun Tao: Your father is in the hospital....Sun Tao: Yes. Sun Tao: this matter of yours..., Or you call my card.

This conversation in example7 takes place in the first conversation between Sun Tao and Shao Feng. Shao Feng has just hung up the phone call of telecommunication fraud, so Shao Feng is still in a state of palpitation at the moment. Shao Feng naturally regards Sun Tao as a liar. It happens that Sun Tao and the previous liars have the same surname as Sun Tao and this strengthens Shao Feng's conjecture in his heart, thus Shao Feng begins to ask Sun Tao some questions purposefully. For example, Shao Feng put forward: "Hey, my father didn't have any money?" "well, can I transfer the money to my dad's card?" "Oh Oh, my dad didn't have a card! Oh, that's troublesome. " These words appeared in Shao Feng's conversation with the cheater. It's very coincident that Sun Tao's reply is almost the same as that of the liar. In this way, this dialogue completely achieves Shao Feng's bad intention, and Sun Tao successfully takes the bait. Sun Tao is not sure why and is happy to wait for Shao Feng's positive response. Sun Tao naively thinks Shao Feng will immediately pay for money. However, Shao Feng hangs up the phone with a mockery attitude and this is not the result Sun Tao wants at all, producing a humorous effect. Finally, the audience applauds and laughs one after another.

Eg8: Shao Feng: ah, old sun, ... Sun Tao: of course!... Shao Feng: I can't cure him yet!!!

This dialogue of example 8 takes place in the first call between Sun Tao and Shao Feng, which is the follow-up part of example 6. Shao Feng successfully leads Sun Tao to say that he is a dog. Shao Feng has achieved his goal and was very happy. When Shao Feng is elated, Sun Tao realizes that he had been fooled by Shao Feng, and is in a bad mood suddenly. The answer to the this simple question is very funny, which produces humorous language effect.

3.4 Pragmatic Presupposition Conversion

Pragmatic Presupposition Conversion refers to that the speaker unilaterally cancels the original presupposition and replaces it with a new one. There are two ways to change the focus in pragmatic presupposition: the first one is to change the focus topic in speech, the other one is to use homophony to achieve pragmatic presupposition. For example:

Eg9: Shao Feng: Oh? Just call your card!... Sun Tao: Oh, the health care reform has been carried out, ... Shao Feng: ah, how can two or three hundred be enough?... Shao Feng: how about two hundred million!!!!... Sun Tao: No, I can't save so much money in my card!!!

This conversation of example 9 also happens in the first conversation between Sun Tao and Shao Feng, which happens before the example of 6 and 8. Sun Tao suggests that Shao Feng transfer the money, namely, two or three hundred yuan to his bank card, but Shao Feng proposes 100 million yuan or even 200 million yuan, which obviously changes the focus topic of language, forming a humorous effect. Example 9 obviously belongs to the first case of the shift of focus topic in pragmatic presupposition.

Eg10: Sun Tao: why do I go to the police station? Shao Feng: you are a liar! Sun Tao: I'm not a liar!... Sun Tao: I'm not a psychopath!... Shao Feng and Li Yilun: Hey, what the hell are you?...Sun Tao: I'm a liar in a psychopath! Li Yilun: go, go to the hospital! (Shao Feng: go to the police station!)

The dialogue in example 10 takes place after Sun Tao and Shao Feng had a meet. The thing is like this. Before they meet formally, Sun Tao first meet Li Yilun and Sun Tao also mistakes Li Yilun for Shao Feng. So Sun Tao begin to vent his anger on Li Yilun. Li Yilun is full of grievances and don't know why. However, the warm-hearted Li Yilun do not fight back, and he regards Sun Tao as a mental patient, offering to take Sun Tao to the hospital. So in Li Yilun's eyes, Sun Tao is a psychopath. At this time, Shao Feng appears and instead says that Sun Tao is a liar, while saying while pulling Sun Tao to the police station. The three of them are just like this and each holds his ground. Seeing this, Sun Tao says that he is a liar in a psychosis, skillfully replying to the two people's questions and this just like the proverb: killed two birds with one stone. Sun Tao confuses Shao Feng and Li Yilun and successfully plays them over. Therefore, in this dialogue, Sun Tao changes the focus topic of his speech, producing a

humorous speech effect, which makes the audience laugh. Example 10 is obviously the first case of the shift of focus topic in pragmatic presupposition.

4.CONCLUSION

This study takes the theory of pragmatic presupposition as the theoretical framework and takes the comedy skit *Set Your Heart at Rest* as the corpus to analyze the generation of humorous speech acts in comedy skit. It is found that the actor's speech acts use the strategies of misinterpreting pragmatic presupposition, adapting pragmatic presupposition, and pragmatic presupposition conversion to achieve humor effect, while relatively less use of resetting pragmatic presupposition. In brief, the humorous words and the exaggerated body movements can make the sketch more popular with the audience.

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Using E-commerce to Promote the Transformation and Upgrading of Manufacturing Industry-An Analysis of Dongguan in Context of Guangdong-Hong Kong-Macao Greater Bay Area

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Abstract: Manufacturing industry is the core component of the industrial system. As an important means to create wealth, manufacturing industry has long been the core industry of rapid social and economic development in Dongguan City. As the "manufacturing capital" and "world factory", Dongguan City, after many years of economic development, has been also faced with some issues such as the disappearance of demographic dividend. The proposal of Guangdong-Hong Kong-Macao Greater Bay Area (GBA) offers a new opportunity for the development of traditional manufacturing industry in Dongguan. In this context, it is of great significance to study the transformation and upgrading of manufacturing industry. Currently, e-commerce has become one of the most powerful methods to promote the transformation and upgrading of manufacturing industry. In view of the industrial convergence in GBA, we analyze how to use e-commerce to transform and upgrade the manufacturing industry in Dongguan. We find that under the background of increasing costs of labor, land and other production factors, Dongguan manufacturing industry must shift from labor-intensive towards capital technology intensive, so as to improve the competitiveness of the industry and increase the added value of products. Manufacturing enterprises can effectively reduce risks and find new points of profit through C2B, product crowdfunding and other e-commerce modes.
Keywords: Manufacturing industry; transformation and upgrading; e-commerce; Guangdong-Hong Kong-Macao Greater Bay Area

1. INTRODUCTION

Guangdong-Hong Kong-Macao Greater Bay Area (GBA) consists of 2 special administrative regions and 9 Pearl River Delta cities of Guangdong. It is a major decision made by the Central Committee of the Communist Party of China (CPC) Central Committee with Comrade Xi Jinping as the core. It is a new measure to promote a new pattern of comprehensive opening up in the new era and a new practice to promote the development of "one country two systems". On February 18, 2019, the Central Committee of the CPC and the State Council issued the outline of the development plan for the GBA, and issued a notice requiring all departments in various regions to implement it in combination with the actual situation. In this context, Dongguan municipal government proposed to build "bay area city, quality Dongguan" to build an advanced manufacturing center in GBA [1]. In 2019, the GDP of three cities (Shenzhen, Guangzhou, Foshan) in Guangdong have exceeded 1 trillion yuan. Guangzhou and Shenzhen are still the front lines of Guangdong, and Dongguan's GDP will also reach 948.3 billion yuan, which is expected to become the next trillion club members [2]. In Dongguan, each town has its own characteristic industry and each industry has its own specialized market. Dongguan's five pillar industries are electronic information manufacturing, electrical machinery and equipment manufacturing, textile, clothing, shoes and hats manufacturing, food and beverage processing and manufacturing, paper and paper products industry. Four characteristic industries are: Toy and sporting goods manufacturing industry, furniture manufacturing industry, chemical manufacturing industry, packaging and printing industry.

However, compared with the United States, Japan and the United Kingdom with developed manufacturing industries, it is not difficult to find problems in Dongguan's manufacturing industry. On the one hand, unreasonable industrial structure, sufficient cheap labor and insufficient investment in science and technology lead to low labor productivity and backward production mode [3]. On the other hand, Dongguan manufacturing industry has a high proportion of material consumption in the production process, the degree of deep processing and technical content is not high, the added value of products is low, and the profitability is poor. The development of GBA will break through the spatial restrictions, institutional barriers and administrative regional restrictions between cities. It will achieve a new cross regional development pattern of complementary advantages, total factor circulation, regional division of labor and cooperation, effective allocation of resources, and synchronous economic and social development. It will force Dongguan's industrial quality adjustment and upgrading.

Currently, the rapid development of e-commerce also provides a favorable opportunity for the transformation of manufacturing enterprises. E-commerce not only broadens the shopping channels of consumption, but also

greatly enriches the purchasing space of manufacturing enterprises. At the same time, the rise of new e-commerce models, such as C2B and product crowdfunding, also provides new opportunities for the transformation and development of manufacturing enterprises. Therefore, this paper will focus on the background of GBA to explore the possibility of transformation and upgrading of Dongguan manufacturing enterprises combined with e-commerce.

2. DILEMMA IN THE TRANSFORMATION AND UPGRADING OF MANUFACTURING INDUSTRY

2.1 Weakness in innovation and awareness of brands

Many enterprises in Dongguan are still passive independent innovation. Even if the government has issued relevant preferential policies to encourage scientific research and innovation, a considerable number of enterprises are still lack of enthusiasm for investment in R&D and innovation, only concerned about whether the products currently produced have a market, which is limited to short-term profits [4]. Among them, the brand construction is the most able to reflect the enterprise innovation consciousness. Although many small and medium-sized manufacturing enterprises are aware of the importance of brand building, in the actual production and operation, they are more concerned about the survival of enterprises in front of them and lack of long-term awareness. As the establishment of a brand is a long-term work, all links need to be prepared in advance, including product research and development, production, promotion, after-sales service and other aspects, are important factors to constitute the brand. The establishment and maintenance of these links need a large amount of funds to ensure, which makes it more difficult for enterprises to establish their brands, thus embarking on the old road. This approach largely benefits from cheap labor costs. However, with the continuous rise of domestic labor costs, a large number of large-scale factories in Dongguan will face the difficulties of transfer, scale reduction and even bankruptcy.

2.2 Medium or low-end place in value chain

Due to historical reasons, China's industrialization started late, enterprises often lack of core technology, naturally in the international division of labor in the process of manufacturing. However, the manufacturers in this link only invest in the cost of labor, plant land resources, production and processing equipment, water and electricity and other factors in the production process. Although the cost is very high, such element costs are replaceable in different countries or regions, and the demand is more flexible. Enterprises lack initiative in competition, so it is inevitable to fight price war.

This is the case in Dongguan. It has abundant labor force and cheap land resources, but the capital and technology with higher added value is relatively scarce. Therefore, it is difficult for Dongguan to obtain high value due to the development of labor-intensive industries relying on factor resources.

The serious dependence on foreign investment caused by the defects of policy supply also limits the possibility of Dongguan manufacturing industry extending to both ends of the "smile curve". First of all, due to the incentive of export tax rebate and other policies, many manufacturing enterprises prefer to import raw materials at high prices from abroad rather than purchase at low prices in the domestic market. In terms of policy, the loose bonded policy of "no restriction on regions, no restrictions on commodities and no restrictions on enterprises" has been implemented for enterprises engaged in processing trade, as well as an open management policy, so that both simple processing trade and high value-added processing trade can enjoy preferential treatment without distinction. This is equivalent to encouraging the unlimited processing of foreign businessmen. Under the background of local government GDP index and export-oriented, it is difficult for Dongguan manufacturing industry to transform and upgrade.

When the manufacturing industry is in the middle and low-end position, the product competitiveness is bound to be insufficient. The first is that the product quality is not stable enough. Due to the backward technology and other factors, it is difficult for some of Dongguan's manufactured products to reach the industry's high standards in the world. Second, the independent R&D capability is not strong, and the lack of core technology limits the upgrading of manufacturing value chain. Third, the products of Dongguan manufacturing industry are mainly labor-intensive products with low technology content. Even if there are a small number of high-tech products, the processing process is relatively short, and the key links of the production process are mastered by foreign countries.

3. E-COMMERCE PROMOTING THE TRANSFORMATION AND UPGRADING OF MANUFACTURING INDUSTRY

3.1 Boosting product innovation in manufacturing industry

With the deepening of the integration of manufacturing industry and e-commerce, the extensive and in-depth application of the new generation of information technology in the manufacturing industry will continue to break the boundary between the manufacturing industry and other industries, making the market competition faced by manufacturing enterprises intensify. Enterprises must constantly explore new product innovation to produce more competitive products. At the same time, e-commerce will also help manufacturing enterprises to carry out product innovation. Based on the development of e-commerce technology, manufacturing enterprises can conduct more accurate positioning and Analysis on the needs of consumers, and build a product system driven by data: first, big data Internet technology enables enterprise R&D personnel to mine more effective consumer information in advance, which helps users to participate in the front-end R&D design of the industrial chain; second, manufacturing enterprises Through the information platform, the industry receives feedback from consumers on the use of products and use requirements. These feedback information helps R&D personnel to complete the optimization and innovation of products. The most representative models are C2B mode and product crowdfunding mode.

C2B is a manifestation of e-commerce mode, namely customer to business. In C2B mode, the manufacturer's production is based on the needs of consumers, so consumers first put forward demand according to their own preferences, and then manufacturers organize production according to these needs. In order to show individual needs, consumers often customize products according to their own preferences, or actively participate in product creative design, production and pricing, and manufacturing enterprises are responsible for customized production. Product crowdfunding mode is also a new e-commerce shopping mode, which is an important embodiment that the public decide the products and services they need at the starting point of the value chain. Consumers can participate in the product design and personalized customization.

C2B mode can reduce costs for small and medium-sized enterprises, expand market share, such a transaction mode, save a lot of intermediate links, save transaction costs. Similarly, the product crowdfunding model can also test whether the product can be recognized by the market before mass production. If the product is recognized by the market, it can be mass produced, otherwise, the product can be modified. This kind of product crowdfunding, to a great extent, can reduce the risk that the products cannot be recognized by the market after mass marketing, and effectively reduce the cost of enterprises.

3.2 Helping the manufacturing industry to carry out brand marketing

Brand marketing is the most important link in brand building. Dongguan's manufacturing industry needs to carry out brand marketing as far as possible on the basis of innovative products, so as to obtain high-quality users. The essence of brand marketing is to cultivate customer stickiness, which can help enterprises gain advantages in the fierce market competition. The application of e-commerce in manufacturing enterprises is deepened, which can help brand marketing and make the following three marketing methods more operational. The first is story telling. By telling the stories of the founders, brand establishment and product development, the products can enter the vision of consumers. The interesting and easy spreading stories can attract customers' attention, so that customers can have a deeper understanding of the products and even the enterprise, so as to strengthen the customer's sense of cooperation. The second is to establish channels. Manufacturing enterprises can publish product information, sales information and user purchase comments on industry websites, comprehensive websites and various search engines, so that existing customers or potential customers can easily and quickly search for relevant product information and increase brand exposure. Third, play circle. Manufacturing enterprises can make full use of Internet information technology to build a customer exchange platform. Product updates and activities can be sent to customers in a timely manner. Customers can not only consult product related issues on the platform, but also share product experience with other customers to form a friendly and interactive communication circle. Improving the communication frequency between users and between users and enterprises is beneficial to the cultivation of customer loyalty, and the product can form word-of-mouth and be promoted in potential customer groups outside the circle.

3.3 Improving the after-sales service level of manufacturing industry

With the application of e-commerce, information technology and manufacturing enterprises continue to integrate and innovate. It is no longer difficult to collect the operation of sold equipment. Manufacturing enterprises can make rational prediction of product failure risk through information collection, establish data model, and then give corresponding solutions by expert consultation. Enterprises can provide a series of after-sales value-added services and communication services to effectively improve the level of after-sales service and enhance the reputation of enterprises. Good corporate reputation is beneficial to enhance the competitive advantage of products and realize more efficient marketing mode.

4. CONCLUSION

Under the background of the construction of GBA, Dongguan can realize the cooperation with other cities in the bay area, realize the complementarity of resource elements, and use e-commerce to promote the transformation and upgrading of Dongguan's traditional manufacturing industry in product innovation, brand marketing, after-sales service, and extend to the front-end of the industry chain, and strive to build itself into a manufacturing center city in GBA.

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Ideological and political exploration in the Teaching of "Perpetual Calendar Design"

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Abstract: Taking a specific teaching content of digital electronic technology course as an example, this paper refines the ideological and political teaching objectives of the course, and integrates it into the Trinity Teaching Mode of "theory + practice + ideological and political". The teaching practice proves that the teaching effect is good, and the teaching goal of all-round education is experimented.
Keywords: Digital electronic technology; Ideological and political course; Teaching method; Trinity

1. INTRODUCTION

In 2016, the National Conference on Ideological and Political Work in Colleges and Universities decided to make full use of classroom teaching as the main channel and run ideological and political work through the whole education and teaching process, so that a variety of courses and ideological and political theory courses are combined together in the same direction to realize the whole process of education and comprehensive education. Since then, colleges and universities across the country have carried out in-depth teaching reform, combining theory with ideological and political education organically, and realizing the curriculum goal of "knowledge impart and value guidance". As a professional basic course in national engineering colleges, how to add ideological and political teaching in theoretical courses and help students form a correct world outlook, outlook on life and values from different philosophical perspectives has also led to in-depth exploration and practice. This paper takes a specific counter teaching content of "digital electronic technology foundation" as an experimental case, discusses how to effectively integrate the theory, practice and ideological and political Trinity in teaching, improve the learning effect and enrich the students' humanistic feelings.

2. TEACHING CASE OF CALENDAR DESIGN

"Calendar design" requires students to use chip 74163 to design decimal, hex and other counters, and then realize the time display part of the calendar. In order to conform to the cognitive law of students and make it easier for them to accept new knowledge, it is necessary to integrate theory with practice, emphasize scientific and exploratory nature, and pay attention to enlighten students' thinking, association and innovation consciousness. In order to achieve the above goals, the teaching process is carried out by combining multimedia courseware with experimental circuit, which presents the teaching content in front of students intuitively, vividly and interestingly. Through learning the basic theory and method of digital system logic analysis and design, students can have the ability to analyze and design digital logic circuit independently by using standard integrated circuit, and lay a solid foundation for subsequent courses.

The content of the counter integrates the ideological and political education of "Chinese core", "made in China" and "national heavy equipment should be in their own hands". In the process of teaching, it sets the ideological and political goal of "cultivating new people who are responsible for national rejuvenation". Through the study of this course, students can be inspired to actively participate in experiments and attach importance to experiments by means of various experimental teaching modes combined with various assessment and evaluation, thus effectively consolidating the theoretical teaching foundation and improving students' engineering practice and research and development ability. At the same time, integrating ideological and political education into experimental teaching [1], making bold attempts and innovations in classroom teaching, enriching and developing the connotation of digital electronic technology basic course teaching in the new era will play a positive role in improving students' professional and ideological and political quality.

3. CASE DESIGN OF TRINITY OF THEORY, PRACTICE AND IDEOLOGY AND POLITICS

3.1 Integration Design of Ideological and Political Content

(1) At the beginning of the course, the development history of China's integrated chip is briefly described. After nearly 10 years of special implementation, a breakthrough has been achieved in batch of key equipment for integrated circuit manufacturing. More than 30 kinds of high-end equipment and hundreds of key material products have been successfully developed and entered the domestic and foreign markets, filling the gap in the industrial chain. Stimulate students' sense of responsibility.

(2) In the middle stage of the course, "it's easy to understand on paper, and we must practice it." Theoretical knowledge can not only stay on the principle of content, to achieve the unity of knowledge and practice, there must be practice, just as the so-called 'the beginning of knowing, the accomplishment of knowing". Students

in groups use the distributed "pocket" experimental platform to carry out experimental operation in class. In practice, they constantly summarize innovative experience, learn deeply, and face difficulties

(3) At the end of the course, it quoted "major scientific and technological innovation achievements are important and powerful tools of the country, which must be firmly grasped by ourselves, and must rely on self-reliance and independent innovation." To encourage students to "forge ahead, unremitting struggle."

3.2 Overall Teaching Design

(1) MOOC leader. In the preview stage, the basic principles of integrated chip 74163 were studied according to the teacher's requirements. In the classroom teaching, the teacher asked students to gradually consolidate the precautions in the process of circuit design of the chip by setting questions.

(2) In class experiment: students in groups use the "pocket" experimental platform to realize the experiment, and carry out the experimental teaching in the classroom, so as to organically combine the theoretical teaching and practical links. In case of design problems, guide students to discuss and solve problems step by step, so as to realize "engineering application-oriented teaching".

(3) Classroom flipping: Students' representatives are invited to come to the stage for design explanation, giving full play to students' subjective initiative and realizing "classroom flipping". At the same time, students' language expression ability and adaptability are trained.

4. TEACHING EFFECTIVENESS

(1) The patriotic feelings of the students are stimulated. Through the explanation of the history of chip manufacturing in our country, we can make the students realize that "lagging behind will be beaten", arouse their sense of responsibility, and take on the responsibility of national rejuvenation through their own efforts.

(2) "Cramming" becomes "practicing all over the hall". It has changed the previous situation that "teachers are full of students, and students' sense of participation is weak". It also gives students the classroom, and teachers become the organizers of teaching, even weakening the dominant position of teachers.

(3) The classroom teaching mode of "Cooperative Learning + pocket experiment" is constructed. Through the practice of circuit design, production and debugging, students can solve the problem of boring and abstract learning and the separation of theory and practice. It improves the students' comprehensive analysis ability, innovation ability and team spirit, and builds the course into a course with depth, difficulty and challenge.

(4) The classroom flipping is realized [2-4]. Through many times of practice, it is found that the students on the stage need to use concise language to present the design of this group to everyone, so as to exercise their language expression ability; because the students under the stage have experienced the same design process, they are more serious when listening to the class, and they will also put forward some practical problems, so that the students' emergency response ability can be improved at the same time. The whole classroom learning atmosphere is rich, students in "play" to achieve "learning".

Students' evaluation of classroom teaching in the past. Students like this way of learning while operating, because it is of great help to their innovation ability and practical operation ability.

5. CONCLUSION

Through the construction of "theory + practice + ideological and political" trinity teaching method, ideological and political education is organically integrated into the teaching process, which not only stimulates students' interest in learning, guides students to establish patriotic feelings, and enhances their confidence in joining the powerful scientific research country, but also realizes the dialectical relationship between theory and practice, cultivates students' practical ability and knowledge application ability, and realizes ideological and political education and knowledge application ability The parallel professional education enriches students' humanistic feelings.

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Study on The Innovation of Ideological and Political Education in Colleges and Universities Guided by Humanistic Care and Psychological Guidance

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Abstract: This paper explains the scientific connotation of humanistic care and psychological counseling leading ideological and political education in Colleges and universities from different angles, combs the important significance of strengthening humanistic care and psychological counseling in Ideological and political education in Colleges and universities, and emphatically discusses the importance of "thinking of humanistic care and psychological counseling" from "one goal, two ideas, three principles, four relationships and five strategies" How to achieve humanistic care and psychological counseling between "guiding" and "getting the actual effect of humanistic care and psychological counseling".

Key words: Humanistic care; Psychological counseling; Colleges and universities; Ideological and political education

1. BACKGROUND OF THE TIMES

At present, China has entered a critical period of development, reform and contradictions. The imbalance of interpersonal relationship, the uneven distribution of interests, the wide gap of family status, the differences of personality characteristics and living habits will cause conflicts and psychological imbalance among college students. According to the survey, the freshmen who have psychological problems because they are difficult to adapt to college life usually account for more than 5% of the total number of freshmen.

The development trend of internationalization, marketization, diversification and popularization of higher education has also brought unprecedented impact and challenge to the quality of student training and the mode of education management. Novel coronavirus pneumonia migrant workers are increasing year by year, the demand for employment market is tight, and migrant workers with certain experience and hardworking spirit are constantly joining the contingent of employment contingent. In addition, the employment situation of college graduates has become extremely grim due to the complex international situation and the influence of the new crown pneumonia epidemic. The resulting fear and anxiety break their psychological balance, making them lack confidence in life, lose hope for the future, do nothing about the situation, and even feel that survival is meaningless.

2. SCIENTIFIC CONNOTATION

From the perspective of pedagogy, the object of education is human, and the function of education is to promote the healthy growth and comprehensive development of human. Ideological and political education is a form of education, but also fully consider the physical and mental development and personality characteristics of the educated, the implementation of humanistic care and psychological counseling.

Marxist theory of human's all-round development puts forward that the only way to realize human's all-round and free development is to combine education with productive labor, that is, to integrate theory with practice. When carrying out ideological and political education for students, we should not only instill theoretical knowledge and lead by example, but also pay attention to the personal practice of the educated, which requires ideological and political educators to fully respect the subject status and personality differences of the educated, We should pay attention to the physical and mental health and development needs of the educated in thought, study, work and life, respect the dignity of students, and respect their right to choose and develop when they realize their self-worth.

Starting from Maslow's hierarchy of needs theory, ideological and political education in Colleges and universities should pay attention to the multi-level needs of college students. Psychological counseling is different from psychological education and psychotherapy. It is a two-way interaction based on communication. It starts from the actual needs of students, and according to the different psychological characteristics of different students in different periods, it takes dredging students' psychological barriers and solving students' actual difficulties as the fundamental starting point and foothold.

3. SIGNIFICANCE

3.1 To enhance the pertinence and effectiveness of Ideological and political education of college students.

Close to the students' ideological reality, the ideological and political education which seems to be "tall" is integrated into the "grounded" students' daily life. It is easier to find the entry point and focus point, and it will not make the students produce rebellious psychology, which greatly improves the pertinence and effectiveness.

3.2 It is conducive to promoting the comprehensive, free and healthy growth of college students.

Combining education with students' development closely, relying on rich and colorful second classroom activities and various forms of professional skills competition, we can cultivate

students' good moral quality and exquisite professional skills, so as to lay a foundation for future students to better adapt to the society and serve the society.

3.3 It is conducive to the construction of harmonious campus and harmonious society. To help students solve practical difficulties, enhance the sense of belonging to the school and the joy of life, ease students' psychological confusion, help students find the goal and motivation to move forward, and build a harmonious relationship between teachers and students.

4. MAIN PATH

4.1 Focus on one goal. In order to promote the healthy growth of college students and ensure their comprehensive and free development as the fundamental goal, we should guide students to adhere to the guiding ideology of Marxism, strengthen the common ideal of socialism with Chinese characteristics, carry forward the Chinese spirit, actively practice the socialist core values, improve cultural quality and moral quality, and realize the harmonious development of body and mind.

4.2 Establish two concepts. Establish the concept of "student-centered" and "teaching students in accordance with their aptitude". "People oriented" is to fully respect the law of education and the law of students' physical and mental development, take students' all-round development as the fundamental starting point and foothold of education, and meet students' legitimate and reasonable demands to the maximum extent. "Teaching students in accordance with their aptitude" is to carry out different education in a targeted way, so that each student can develop his strong points and avoid his weak points, and obtain the best development.

4.3 Grasp the three principles. The principle of classified education. According to the different personality and psychological characteristics of students in different stages of study in school and in different aspects of thought, study, work and life, students are divided into different categories to achieve targeted ideological and political education. According to the social demand for talents, the actual situation of the school and the needs of personal development, we should grasp the necessity and feasibility of classified education, and pay attention not to violate the goal of quality education and people's all-round development, and not to violate educational fairness. Step by step. We should respect the order, stage, imbalance, complementarity and individual difference of students' physical and mental development, carry out the work step by step according to the characteristics of students' development, and should not "encourage the seedlings"; we should implement education according to the different characteristics of students in different stages, and should not "cut across the board"; we should respect and appreciate students' personality differences, and fully tap students' potential At the same time, we should guide students to develop their strengths and avoid their weaknesses. The principle of keeping pace with the times. The physical and mental characteristics of students are not unchangeable, but gradually change with their own development or the external objective environment. In order to avoid the one sidedness and irrationality of

education, we should treat it from the perspective of development.

4.4 Straighten out the four relationships. The relationship between students and teachers. To build a harmonious relationship between teachers and students, we should use teachers' noble professional ethics, perfect personality charm, superb art of education management, and exquisite level of education and teaching to infect and educate students, so as to gain students' respect and recognition for teachers. We should fully respect the students' personality characteristics, active participation consciousness and personal dignity, create conditions to promote the full and free development of learning, deal with the students' daily affairs fairly and openly, cooperate with each other, trust each other, and form a loving, sincere, harmonious and harmonious relationship between teachers and students. The relationship between meeting social needs and meeting personal needs. Personal needs are the essential requirements of Ideological and political education in Colleges and universities, and are the fundamental starting point and ultimate goal of education; social needs put forward objective requirements for ideological and political education in Colleges and universities, point out the development direction, enrich the education carrier, and innovate the education methods. The relationship between theoretical guidance and practical exercise. Any theory is produced under certain historical conditions, and the objective things are constantly changing and developing. Only under the guidance of scientific theory can practice achieve the purpose of transforming the objective world. What theory reflects is the essence and law of things and the commonness of things. However, the objective things are diverse and have vivid and rich personalities. The organic combination of theoretical guidance and practical training is the dialectical unity of generality and individuality. The relationship between positive education guidance and promoting self-improvement. The ultimate goal of Ideological and political education is to make the educated self-education and self-discipline. Any method of education and management should focus on cultivating their habit and ability of self-education, and strive to improve their ability of self-education, so that they can eventually self supervise, self restrain, self correct and self motivate without educators and managers.

5. FOCUS ON THE IMPLEMENTATION OF FIVE STRATEGIES

5.1 Fully understand and grasp students' personality characteristics and development needs, and do a good job in students' tracking record and observation. At the beginning of enrollment, students should fill in the basic information registration form and student contact card, fully understand the basic information of students' family, personal basic information, hobbies and personality characteristics, and establish student information files. At the end of the semester, according to the students' performance in thought, study, work, life and other aspects, update and improve the content of students' information files, and record the track of students' growth and development. It can not only make students know

their own development and changes, facilitate their own adjustment and improvement of academic planning, career planning and life planning, but also enable teachers to timely and accurately grasp the development of students. Make full use of new media means, occupy the position of online education, build online education platform, communicate with students through wechat, QQ and other forms, be students' intimate friends and mentors, go deep into students' learning and living places, and understand students' needs. For example, through the system of class contracting by the leaders of colleges and departments, the system of regular theme class meetings, the system of irregular student discussion, the system of going deep into students' dormitories, and the system of leaders' reception day, we can comprehensively understand the basic situation of students, and effectively solve their life and learning difficulties, so as to better carry out ideological and political education for students.

5.2 To create a warm and harmonious campus cultural atmosphere full of humanistic feelings. We should carry out all kinds of theme education activities, literary and sports activities, formulate rules and regulations full of flexibility and humanistic feelings, conduct all kinds of evaluation and selection work fairly, justly and openly, respect students' right to participate and know, increase humanistic education courses and increase humanistic practice activities. Establish a friendly atmosphere of unity and mutual assistance, a high spirited atmosphere and a positive and enterprising learning spirit, help students gradually develop good living and learning habits, and constantly improve their comprehensive quality. We should give full play to the educational guiding function, value guiding function, personality shaping function, intellectual development function, physical and mental adjustment function of the campus cultural environment and the inhibition function of unhealthy atmosphere, so as to reflect the unique role of the campus cultural environment in the ideological and political education of students. The campus cultural environment includes not only the static "hard environment" such as the architectural facilities full of humanistic atmosphere, advanced and perfect scientific research equipment, safe and comfortable activity sites, picturesque pavilions, but also the unity and cooperation, mutual concern, modesty and willingness to learn, and helping others in the colorful community activities, sports competitions, academic lectures, calligraphy and painting exhibitions And so on. "Hard environment" is conducive to students' integration of feelings and scenes, and they will receive subtle education in the process of upgrading from image thinking to rational thinking; "soft environment" is conducive to students' Cultivation of good ideological and moral quality in the process of sublimating from "moral cognition" to "moral practice", so as to promote the healthy growth of college students.

5.3 Establish the work concept of highlighting employment orientation. To carry out the academic and career education activities of "taking students' employment as the guidance, cultivating students' core competitiveness as the goal, and serving students' growth

and success as the purpose", and effectively build a platform for students' employment service and social practice, so as to promote the improvement of students' Comprehensive ability, To promote students to grow into useful talents in society; to carry out various professional skills competitions, improve students' professional skills, integrate education into students' daily needs, change boring preaching into lively and interesting activities, and improve the effectiveness of education.

5.4 To build a high-quality, professional and capable ideological and political education team. According to the standard of "four good teachers", we should build a team of teachers with noble morality, profound knowledge, excellent charm and exquisite skills, form a perfect and efficient network system of student education, management and service, and encourage party and government leaders, cadres, full-time teachers, social forces and family members to actively participate in Ideological and political education. Fully understand and accurately grasp the different characteristics of students in each stage and link, formulate clear management requirements and educational objectives, and implement the whole process management. Ideological and political education, mental health education, professional skills training, academic and career planning education, entrepreneurship and employment guidance services, personality development and quality improvement are included in the ideological and political education work to achieve the goal of comprehensive development.

5.5 to form a joint force of Ideological and political education of college students; fully consider the role of family, school, society and country in the harmonious interaction of Ideological and political education of college students. The school actively creates conditions, widely strives for the support of all parties, makes full use of limited resources, builds a working team, and improves the working system to escort the ideological and political education of students. Parents should not pretend to be bystanders and irrelevant people, only regard their children's ideological and political education as a matter of school and teachers. They should actively communicate with teachers, pay attention to children's personality characteristics and development needs, give children full autonomy and reasonable suggestions, and do not impose their own interests and development needs on children. The society should also provide objective, real, timely and effective information on talent demand, and assist schools to do a good job in students' Ideological and political education and talent training.

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Multi-Dimensional Path of Marxist Theory Leading Ideological and Political Education in Colleges and Universities

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Abstract: With the development of society, the country pays more attention to the ideological and political education. As the base of cultivating national talents, colleges and universities should strengthen the ideological and political education of students and promote their all-round development. This paper mainly analyzes the multi-dimensional path of Ideological and political education in Colleges and Universities Guided by Marxist theory, hoping to promote the development of socialism with Chinese characteristics in a better direction.
Keywords: Ideological and political education; Colleges and universities; Multidimensional path

1. INTRODUCTION

Marxist theory plays a guiding role in the ideological and political work in Colleges and universities. It is related to the major issue of how to cultivate talents in Colleges and universities. Only by integrating Marxism into students' ideological values, can students develop in an all-round way. And the ideological and political education in Colleges and Universities under the guidance of Marxist theory is an important way to cultivate successors of the socialist system with characteristics for our country.

2. DISCIPLINE CONSTRUCTION IS THE BASIS AND PREMISE OF PLAYING THE LEADING ROLE OF MARXIST THEORY

Marxism plays an irreplaceable role in the ideological and political education in Colleges and universities. To do a good job in the discipline construction of Ideological and political education in Colleges and universities is the basis and premise to play the leading role of Marxist theory. Marxist theory is an important theoretical action guide on the road of socialism with Chinese characteristics, and its guiding ideology is the foundation of the party. If college students want to contribute to the country and society, they must have a solid theoretical foundation, correct outlook on life and values. Only with sound personality and universal concept can we shoulder the burden of the great rejuvenation of the Chinese nation. Colleges and universities in the construction of Ideological and political education, to correctly understand and grasp the guiding ideology of Marxism, and the practical use of the living soul of Marxism. What the country leads the ideological and political theory course of colleges and universities with Marxist theory is to make students understand the system and development situation of their own country better, and it is the theoretical support for cultivating the next generation of talents. When setting up ideological and political education in Colleges and universities, we

should pay more attention to the guidance of Marxist theory and make it the theoretical support of Ideological and political education for college students. To promote the development of Marxist theory in Colleges and universities, the most important thing is to give priority to the development of Marxism in Ideological and political education, so as to promote the development of Marxist theory as the focus of education in Colleges and universities, build a good learning environment, and provide basic guarantee for students' better learning. In the process of Ideological and political education in Colleges and universities, we must take Marxist theory as the basis of discipline construction, combine with the actual situation of our university, give priority to the development of Marxist theory, and make it lead the construction of moral education in Colleges and universities.

3. MULTI LEVEL EDUCATION AND TEACHING SYSTEM IS THE MAIN CHANNEL TO PLAY THE LEADING ROLE OF MARXIST THEORY

Colleges and universities are the main places to carry forward the socialist core values and cultivate talents who can realize the Chinese dream of the great rejuvenation of the Chinese nation. The ideological and political classroom in Colleges and universities is the main channel to cultivate students' thoughts, and also an important position to play the leading role of Marxism. But from the current ideological and political education curriculum, the current ideological and political education curriculum is single and boring. For students, ideological and political course is the content with strong theoretical and obnoxious. If teachers use the traditional teaching mode again, the quality of cultivating students' values will decline a lot. With the development of our society, students' thoughts are more novel, and students' psychology and physiology at this age will also have great changes. Colleges and universities must pay attention to this problem, organically combine students' spiritual needs with theoretical knowledge, and build a multi-level comprehensive teaching system with ideological and political theory courses as the main course, Party school courses, classic reading guidance courses as auxiliary teaching materials The education and teaching system of the position, promote students' psychological growth and the development of Ideological and political theory course in Colleges and universities. The ideological and political theory course in Colleges and universities has always been a course that college students must learn. In the ideological and political course, teachers should pay full

attention to adhere to the Marxist theory as the basis, and play its leading and supporting role in the ideological and political theory course in Colleges and universities. Moreover, colleges and universities should timely integrate the latest research results of Marxist theory into the teaching of Ideological and political course, so that college students can develop Marxism and treat problems dialectically when solving problems in life. At the same time, they should transform the key and difficult points in Ideological and political course into the research of Marxist theory, so as to promote the leading role of Marx.

4. EXCELLENT TEACHERS ARE "SOUL ENGINEERS" WHO PLAY THE LEADING ROLE OF MARXIST THEORY

For the students' Ideological and political theory education, the teachers of Ideological and political course play a key role in the students' Ideological and political education. However, from the current teaching of Ideological and political theory course in Colleges and universities, some ideological and political teachers' explanation of Marxist theory mostly stays on the surface of the concept, the teaching method is single, the teaching content is only theoretical education, without combining with the current situation of China's actual development, the students' practical ability is not strong, and the Marxist theory has become a far cry On the horizon, theoretical knowledge is close at hand. And many college students for the ideological and political course learning is only to complete the learning task, for the ideological and political theory course content is just remember what to learn, smoothly pass the exam, for deep theoretical knowledge lack of understanding, in real life, also can't use the knowledge of Marxist theory to analyze and solve problems. In order to solve the above problems, the teachers of Ideological and political course must really play the leading role of Marxist theoretical knowledge in the ideological and political theory course in Colleges and universities, and do their own work well. First of all, teachers themselves must have profound Marxist theoretical knowledge, noble moral character and firm belief. In the process of teaching, we should play our own appeal, actively spread Marxist ideas, and lead students to learn better. The school should also strengthen the ideological and political construction of teachers, hold regular activities, communicate with other school's ideological and political teachers, promote the flow of teaching ideas, and promote better teaching and education. Schools should also conduct regular selection, set an example, create a good atmosphere of teachers' ethics, and encourage teachers to be more active, quality and quantity of Ideological and political theory education for students. Secondly, teachers are the leader of teaching and educating people, educators must first receive education, teachers should really understand Marxism and socialism with Chinese characteristics theory, consciously adhere to the guidance of Marxism theory in teaching, better education for students, not only let students complete the learning task, but also let students have the ability to use Marxism theory to solve problems In order to promote the development of Ideological and political education in

Colleges and universities.

5. CAMPUS CULTURE IS THE "SOFT ENVIRONMENT" TO PLAY THE LEADING ROLE OF MARXIST THEORY

With the development of Ideological and political education guided by Marxist theory, the construction of campus culture is essential. College students have strong plasticity. Forming a good and correct concept during the university period has a great impact on the future growth. A positive cultural atmosphere can imperceptibly affect students. Therefore, colleges and universities should actively play the role of campus culture when leading ideological and political education in Colleges and universities with Marxist theory, innovate the existing campus culture, make the campus culture in line with the situation of modern development, and build more content about socialist core values and Marxist theory, so that students can learn Students grow up in a long-term cultural atmosphere. For example, colleges and universities can create a cultural corner, which mainly focuses on the content of Ideological and political education. They can also set up regular forums and invite famous teachers to elaborate Marxist theoretical knowledge. The student union can also set up associations to give students a space for autonomous learning.

6. THEORETICAL KNOWLEDGE AND PRACTICAL ACTIVITIES ARE THE VITALITY TO PLAY THE LEADING ROLE OF MARXIST THEORY

Practice is the only standard to test truth. The living soul of Marxism is to emancipate the mind, seek truth from facts, keep pace with the times and analyze specific problems. From the perspective of promoting students' all-round growth, integrating Marxism into students' life and promoting students' development through practical activities is an important way to realize the function of Ideological and political education guided by Marxist theory. Only through practical activities can students understand the current development of our country, the advantages of the socialist system with Chinese characteristics, and have a correct understanding of Marxism. Students can also stimulate a strong sense of patriotism through this practice, and make it clear that they are shouldering the burden of China's great rejuvenation dream. Combining theory with practice, the leading role of Marxism can be realized, and the ideological and political education in Colleges and universities can be better carried out.

7. CONCLUSION

To sum up, this paper expounds that Marxist theory uses multi-dimensional path to guide ideological and political education in Colleges and universities, and clearly points out that ideological and political education in Colleges and universities must adhere to the guidance of Marxist theory. When carrying out education in Colleges and universities, we should strengthen the construction of campus culture and teaching staff. At the same time, according to the development of students in modern society, we should innovate teaching ideas, combine theoretical knowledge with practical activities, and promote the development of Ideological and political education in Colleges and

universities.

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Microwave Digestion Technology and Its Application in Analytical Chemistry

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Abstract: At present, some electric water heaters, induction cooker and other equipment are widely used digestion equipment, but this kind of equipment is not perfect, there are some drawbacks and defects, and the application of microwave digestion technology equipment has been recognized and affirmed by some European and American countries, so microwave digestion technology has been more and more attention. In this paper, microwave digestion technology and its application in analytical chemistry are analyzed and discussed for reference.

Key words: Microwave digestion technology; Analytical chemistry; Application

1. INTRODUCTION

The study of material digestion is an important part of analytical chemistry, and it is also a very important topic, and material digestion is related to the efficiency and quality of analytical work. In general, digestion refers to the transformation of solid substances into liquid substances. It is also the use of acid-base solutions to destroy organic matter and dissolve particulate matter at a certain temperature.

2. PROBLEMS TO BE PAID ATTENTION TO IN THE PROCESS OF DIGESTION

2.1 Digestion can not affect the quality of the sample;

2.2 Interference factors should not be brought into the digestion process;

2.3 Pay attention to the safety in the digestion process, and do not affect the next operation procedure;

2.4 The solution produced by digestion should meet the relevant monitoring requirements;

2.5 The digestion should be repeated;

2.6 For the treatment of samples, the working intensity, the use of reagents and the cost of related consumables should be considered.

In some inorganic monitoring experiments, a large number of people will be consumed. 2.6 for the sample processing, we need to consider the working intensity, the use of reagents and the cost of related consumables.

In the process of some inorganic monitoring experiments, a lot of manpower and material resources will be consumed, and the time before the treatment of samples accounts for more than 50% of the whole test time. In order to ensure the efficiency and quality of the detection work and improve the accuracy of the results, it is necessary to apply the way to improve the detection efficiency. Microwave digestion equipment is an advanced inorganic sample processing equipment, which plays an important role in the specific application. The microwave digestion instrument can be more effectively controlled for a large number of samples, and the equipment belongs to the pressure type equipment, so it can be better controlled by applying intelligent technology. Therefore, when processing some samples, it can give play to the advantages of detection technology and the role of equipment [1].

3. ABOUT MICROWAVE DIGESTION TECHNOLOGY

Microwave digestion technology is mainly reflected in the microwave digestion instrument. The microwave digestion instrument uses polycarbonate bottles and polytetrafluoroethylene, and this kind of material has good conductivity, can improve the efficiency of heat conduction, and has good plasticity. Therefore, it can implement all-round heating for the sample, and the heating degree of the sample is uniform, which can avoid the loss of heat to a certain extent The temperature difference between different positions of the same sample was found.

Intelligent microwave digestion instrument generally uses higher quality temperature sensor and temperature control module, so that the accuracy of temperature can be controlled at 0.1 ℃. Because of the application of advanced temperature control technology, it can achieve the purpose of simultaneous processing, step heating, arbitrary setting of heating time, so the heating efficiency is improved. After constant verification, this digestion method can achieve the purpose of storage and display temperature, so it provides a certain convenience for consumers.

Compared with the traditional plate type heating equipment, the new microwave digester has better heating performance, higher temperature accuracy, controllable temperature range, and can avoid pollution problems, and can prevent corrosion and other advantages.

The application principle of microwave digestion is to generate a certain magnetic field under the action of microwave for the detected sample and acid mixture, so that collision motion can be generated between molecules. Because the heat transfer of microwave digestion instrument is relatively uniform, and the temperature difference of digestion is generally lower than 1 ℃, and the accuracy can reach 0.1 ℃, the current microwave digestion instrument has better insulation effect and better circuit protection effect, which improves the work efficiency and avoids unnecessary cost waste [2].

4. ADVANTAGES AND CHARACTERISTICS OF MICROWAVE DIGESTION TECHNOLOGY

4.1 The Application of microwave digestion technology is reflected in the microwave digestion instrument, which can well show the advantages of microwave digestion technology.

4.1.1 More uniform heating: PTFE volumetric flask with better thermal conductivity is generally selected as the heating body to ensure more uniform digestion temperature and ± 2 ℃ temperature difference;

4.1.2 More accurate temperature control: PID adjustment can realize self-test and control the heating speed, so as to ensure the temperature range of ± 0.2 ℃;

4.1.3 Program control: it can display the temperature control and control the heating time to realize the purpose of automatic heating start and stop;

4.1.4 Energy saving: the application of more advanced heating methods can improve the energy-saving efficiency and keep it at more than 20%. Moreover, it can process 30 samples and improve the work quality;

4.1.5 Temperature adjustment: the infrared sensor module is applied and placed at the bottom of the furnace chamber, so that the temperature can be measured at the bottom of the chamber, and the temperature sensing probe can reflect the temperature change, and then the temperature can be adjusted to achieve the required temperature value.

4.2 Function characteristics of microwave digestion instrument

4.2.1 Heating method: each digestion tube has its own characteristics, such as high-precision quartz glass has better heat preservation effect and pressure bearing effect;

4.2.2 Some composite materials can improve the quality of furnace chamber and prolong its service life, so as to ensure more uniform temperature and avoid heat loss;

4.2.3 The temperature difference in the furnace wall is low, which ensures higher digestion efficiency and further improves the conduction effect;

4.2.4 Program control method: the processing method is more intelligent, different digestion procedures can be set at the same time, and the difference between temperature and time can also be set;

4.2.5 The temperature can be controlled by a certain program, and the temperature curve can be drawn according to the temperature value;

4.3 Other characteristics of microwave digestion instrument

4.3.1 The temperature of polytetrafluoroethylene capacity tank is uniform, the sample processing effect is better, the required cost is reduced, and the number of calculations is reduced, so it is more economical and environmentally friendly;

4.3.2 The LED display control technology can display the corresponding temperature, and can avoid the operator from being injured by high temperature or harmful gas, so it improves the safety of the staff and ensures their life and health [3].

5. APPLICATION OF MICROWAVE DIGESTION TECHNOLOGY IN ANALYTICAL CHEMISTRY

Microwave digestion technology is an important method for sample digestion, mainly for some trace elements, such as iron, manganese, zinc, mercury and other elements, using some spectral analysis methods for detection;

In the aspect of environmental monitoring, mixed acid digestion system can be applied, heating plate and digestion instrument can be used to digest soil samples, and elements in the samples can be analyzed by spectrometry;

For agricultural food: microwave digestion method combined with plasma mass spectrometry can be used to test the content of mercury, lead and other heavy metals in food.

6. CONCLUSION

In a word, the new microwave digestion technology plays an obvious role in the process of sample processing, which can improve the efficiency and quality of detection. Compared with the traditional digestion technology, the new microwave digestion technology has more accurate temperature control, more uniform heating, and safer control, so it has its own characteristics and advantages. Therefore, relevant personnel need to actively pay attention to the new microwave digestion technology and its application in analytical chemistry, so as to improve the efficiency and quality of analytical work.

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Research on The Construction of The Ecological System Of "Ideological and Political Education of Curriculum" In Colleges and Universities

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Abstract: In the new era, it is imperative for colleges and universities to carry out ideological and political education. Based on the study of the necessity, basic principles and elements of the construction of the ecosystem of Ideological and political education in curriculum, this paper puts forward the path of the construction of the ecosystem of Ideological and political education in curriculum from the perspective of education ecosystem, including strengthening the top-level design, implementing the layout; establishing the education and teaching system of "Ideological and political education in curriculum"; building the practice platform of "Ideological and political education in curriculum"; using all media "Melt thinking" and create a soft environment for education.
Key words: Curriculum Ideology and politics; Ecosystem; Value guidance; Construction path

1. INTRODUCTION

Talent cultivation in Colleges and universities is a process of unifying education and talent cultivation. [1] Under the background of the new era, the work of educating people and talents in Colleges and universities is affected by a new round of scientific and technological revolution and industrial revolution, the process of globalization and the international situation. Facing the new challenge of personnel training, colleges and universities need to carry out all-round ideological and political education. The ideological and political education of curriculum should be born in time. But the ideological and political course is not a simple course, a teaching process, or a simple "course + ideological and political". It needs overall planning, cooperation and joint efforts of all parties. In the whole process of education, every link and every aspect will affect the effect of education. In this context, it is of great practical significance and practical value to build a "curriculum ideological and political" education ecosystem to meet the requirements of the new era and to do a good job in the top-level design of "great ideological and political" in Colleges and universities.

2. THE NECESSITY OF CONSTRUCTING THE ECOLOGICAL SYSTEM OF IDEOLOGICAL AND POLITICAL EDUCATION

2.1 Requirements of collaborative education

The guiding outline of Ideological and political education in Colleges and universities clearly points out that each course should do its own job, fulfill its duties, and make all kinds of courses and ideological and political theory courses go in the same direction to form collaborative benefits. This passage emphasizes that colleges and universities need to build a "curriculum ideological and political" education system, fully mobilize different departments and professional resources, break the "two skin" professional barriers between professional courses and ideological and political courses, and realize the all-round and whole process coordination of general basic courses, ideological and political courses, professional theory courses, practice courses, network courses and elective courses, so as to cultivate socialist builders and successors in an all-round way Lay the foundation. Some experts and scholars have pointed out that the key to ideological and political education is to strengthen the cooperation between various courses and ideological and political courses in the aspect of Ideological and political education. The coordination of teachers, education methods, and curriculum system requires "the establishment of a collaborative education mechanism for all kinds of after-school courses of ideological and political theory" [2]. To achieve this, we need the top-level design of the whole education system and the participation from the top to the bottom, which is necessary to build an ecological system of Ideological and political education of curriculum recognized by all parties.

2.2 Curriculum ideological and political appeal to return to the requirements of value building

"The essence of education is to enhance the value as a practical person, which is the reproduction of the subject person" [3]. As the carrier of educational practice, curriculum not only plays the role of imparting knowledge, but also plays the role of value shaping. Infiltrating value problems in the process of classroom knowledge learning helps to realize the organic connection between the real world and the meaning world, so as to achieve the goal of cultivating "complete people". Whether the curriculum can achieve this goal is affected by teachers, teaching methods, teaching materials, mechanism, assessment methods and other factors. To carry out ideological and political education in professional courses, as Chen Baosheng, Minister of education, said, "running a good ideological and political course is not just a matter for teachers of Ideological and political courses. We need to do a good job in five major battles: Ideological and political education, teachers, teaching materials, teaching methods and mechanism.". All these need overall

planning and systematic thinking. Therefore, in this sense, we need to build a complete ecological system of Ideological and political education.

2.3 The internal requirements of "educating people with culture and culture"

Educating people with culture is not only the internal requirement of running a socialist university with Chinese characteristics, but also an important way to promote ideological and political education. The essence of education is to educate people with the content and method of culture, so that people can become "people". With cultural people, we should pay attention to the subtle influence, and emphasize the use of the power of culture to influence, regulate and cultivate people. Culture can be divided into material culture and spiritual culture, tangible culture and intangible culture. Culture is everywhere, everywhere and everywhere. Colleges and universities should take the idea of "great ideological and political education" as the guidance, make good use of these characteristics of culture, carry out ideological and political education for students everywhere, form the education culture of socialist universities, and achieve the education effect of moistening things silently. The cultural shaping of a university needs the unified consensus of all aspects and the participation of all staff.

3. THE PRINCIPLES OF CONSTRUCTING THE ECOLOGICAL SYSTEM OF IDEOLOGICAL AND POLITICAL EDUCATION

To construct the ecosystem of Ideological and political education, we need to follow the following three basic principles

3.1 Adhere to the direction of running a socialist university

Chinese colleges and universities shoulder the responsibility of training successors and builders for socialism. In order to construct the ecological system of Ideological and political education, colleges and universities should first adhere to the basic principle of socialist education. Under this principle, colleges and universities need to follow the basic requirements that education serves the people, serves the governance of the Communist Party of China, serves the consolidation and development of the socialist system with Chinese characteristics, and serves the reform and opening up and socialist modernization. Under this principle, the education ecosystem constructed by colleges and universities needs to systematically consider and solve these problems: how to organically run the ideological and political work through the discipline system, professional system, teaching material system, teacher system and management mechanism system; how to guide students to transform their knowledge and skills into their inner virtues in the process of knowledge teaching and ability training How to effectively guide students to combine personal development with social development and national development, and help students to define their own value and social orientation in the process of creating social value.

3.2 Insist on students as the main body

Knowledge carries emotion, attitude and value. Any knowledge is the combination of objectivity and subjectivity, and the process of learning is also "a process of personal participation full of personal sustenance and the enthusiasm of knowers. [4] The process of learning knowledge is also a process of rational cognition, mental development and spiritual growth. In this process, if students do not wake up their subjective consciousness of learning, do not take the initiative, do not consciously, do not think, do not innovate, it is difficult to achieve the purpose of learning and achieve the overall growth of individuals. Students are the subject of learning activities and the object of education. In order to construct the "curriculum ideological and political" education ecosystem in Colleges and universities, we must adhere to the principle of students as the main body and serve this main body.

3.3 Adhere to the principle of coordination and unification

According to ecological theory, ecosystem is composed of biological community and environmental conditions. In the ecosystem, various biological communities interact with each other to form a dynamic balance body with certain structure and function in a specific space through the exchange of material, capacity and information. The construction of "curriculum ideological and political" education ecosystem should also follow this law, through mutual communication and cooperation, establish a coordinated and unified systematic development plan, and promote the formation of a benign ecosystem.

4. THE CONSTRUCTION ELEMENTS OF THE ECOLOGICAL SYSTEM OF IDEOLOGICAL AND POLITICAL EDUCATION

From the perspective of ecosystem theory, the ecosystem of Ideological and political education in Colleges and universities is composed of multiple levels and micro systems. The quality of university education is the result of the interaction of various factors in the ecosystem environment. Therefore, it is necessary to consider the relevant construction elements from the perspective of ecosystem. Second, from the perspective of ecosystem, it analyzes the elements of the ecosystem of Ideological and political education of curriculum, which are from inside to outside, including micro system, meso system, external system and macro system.

In this system, the innermost level is the micro system, which is the core subject directly involved in the "curriculum ideological and political" education practice activities, including students, teachers and other direct participants. The second level is the meso system, which refers to other factors directly affecting the educational environment of colleges and universities, including talent cultivation mode, education and teaching system, curriculum system, management system, teacher structure and other factors. The third level is the external system, which mainly refers to the indirect forces in the external environment that affect the implementation process and final effect of "curriculum ideological and political", including the government (departments), enterprises / industries, social service institutions, social networks, peers, employers, etc. The outermost level is the macro system, which is the local political, economic, legal,

technological and social environment. Obviously, micro system elements and meso system elements are the direct key factors, while external system and macro system will affect the overall operation effect and implementation process of ecosystem. In a word, from micro system to macro system, from inside to outside, through various ways, it directly affects the effect of "curriculum ideological and political" education, which constitutes an education ecological environment system that affects the quality of "curriculum ideological and political" education in Colleges and universities.

5. THE CONSTRUCTION PATH OF THE ECOLOGICAL SYSTEM OF IDEOLOGICAL AND POLITICAL EDUCATION

5.1 Strengthen the top-level design and make a solid layout

The guiding outline of Ideological and political construction of higher education curriculum points out that "promoting ideological and political construction of higher education curriculum in an all-round way is a strategic measure to implement the fundamental task of cultivating morality and talents", and "the effect of cultivating morality and talents is the fundamental standard to test all kinds of Colleges and universities". The ideological and political construction of curriculum is an important task to improve the quality of personnel training. Colleges and universities should set up a leading group led by the Secretary of the Party committee and the highest leader to comprehensively lead the construction of the ecological system of Ideological and political education in Colleges and universities. Standing at the height of the school, the leading group gives full play to the role of top-level design and layout, and comprehensively plans the construction of the ecosystem from the aspects of strategic goal formulation, personnel coordination and operation mechanism formulation. First of all, it is necessary to determine the strategic objectives of the "curriculum ideological and political" education ecosystem in Colleges and universities, focus on the development orientation and talent cultivation objectives of colleges and universities, and put forward strategic measures. Secondly, we should play a leading role, strengthen the connection between the main elements of the "curriculum ideological and political" education ecosystem, fully mobilize the resource advantages of all parties, connect and bridge, and gather the joint efforts of all parties, so as to form a good ecological environment of collaborative education with the concern and support of all parties. Finally, establish a stable operation mechanism, including management mechanism, guarantee mechanism, assessment mechanism, to ensure the effective operation of the ecosystem.

5.2 To establish and improve the teaching system of "curriculum ideological and political education"

Ideological and political education should not only be the teaching of Ideological and political theory, nor the problem of adding more theoretical courses. According to the needs of the development of the party and the country, ideological and political education should run through the whole process of professional education, and be committed to cultivating socialist builders and successors with all-round development of morality, intelligence, sports, beauty and labor. The establishment and improvement of the teaching system of "Ideological and political education of curriculum" is the basis of the construction of "ecological system of Ideological and political education of curriculum" in Colleges and universities. Perfect education and teaching system includes talent training program, curriculum system, teaching material system, teaching content, teaching method and teacher structure.

First of all, colleges and universities should make clear the goal of "Ideological and political education of curriculum", integrate "Ideological and political education of curriculum" into the professional teaching system, and adjust or formulate personnel training programs according to different disciplines and majors.

Secondly, optimize the curriculum system, reasonably determine the proportion of various courses, highlight the role of curriculum as the carrier of education. The complete construction of "great ideological and political" curriculum system includes ideological and political general education curriculum, professional curriculum, experimental training curriculum, expansion curriculum and so on.

Third, we should attach importance to the construction of teaching materials guided by Marxist theory and the theory of socialism with Chinese characteristics. Combined with the requirements of the development of the new era, the two-way integration of "Ideological and political" and "professional education" should be implemented. That is to say, introducing professional knowledge, tasks or typical cases into the ideological and political teaching materials, integrating the content of "value orientation" into the professional teaching materials, supplemented by the guidance of Marxist theory, realizing the same direction of both, and jointly building the "great ideological and political" curriculum teaching material system, can form a high degree of unity of knowledge and value guidance.

Fourth, in terms of course teaching content, first, it should be determined in close combination with the needs of social production and development; second, it should "combine the characteristics of different courses, thinking methods and values, deeply excavate the ideological and political elements of the course, organically integrate into the course teaching, and achieve the silent educational effect of moistening things" [5].

Fifth, we should establish the student-centered teaching concept, attach importance to the reform of teaching methods, and innovate the classroom teaching mode. Actively promote the application of information technology in teaching, multi-modal presentation of teaching content, stimulate students' interest in learning; attach importance to the combination of "small classroom" and social "big classroom", enrich the classroom content, guide students to further study, cultivate a sense of mission; attach importance to the unity of explicit education and implicit education, advocate the unity of knowledge and practice, through knowledge

cognition, emotional identity, behavior infiltration and so on Students are guided to turn rational knowledge and value identification into concrete actions.

Sixth, the structure and level of teachers is an important guarantee for the implementation of the "curriculum ideological and political" education and teaching system, and the key to the construction of curriculum ideological and political education. In the new era, the requirements for teachers are higher and more comprehensive, and tend to be compound teachers. Colleges and universities should pay attention to the construction of teachers. We should strengthen the cultivation of teachers' political literacy, improve teachers' Ideological and political ability, establish and improve the sharing and exchange mechanism, regularly carry out teaching seminars such as experience exchange, on-site teaching observation, demonstration class and teachers' teaching training, so as to improve teachers' Ideological and political teaching level, set up models and give play to the leading and exemplary role of backbone teachers and famous teachers. Finally, in terms of the form of teaching organization, in addition to holding the main position of "classroom teaching", we should actively expand the second classroom and create a "great ideological and political" education atmosphere. In a word, we should establish and improve the education and teaching system of "Ideological and political education of curriculum" from a strategic perspective, systematically design all links, do a good job of interlocking, echo from the beginning to the end, and always implement the ideological and political education in the whole process of personnel training.

5.3 Building the practice platform of "curriculum ideological and political education"

In the course of Ideological and political education in universities, we should adhere to the unity of theory and practice. Practice is an important standard to test the achievements of theoretical study. Colleges and universities should pay attention to the role of practice in personnel training, and build a practice platform of "curriculum ideological and political" for students. Off campus, colleges and universities can cooperate with patriotic education bases, enterprises, communities and social service institutions to establish off campus ideological and political education practice bases and off campus practical training bases for college students, so as to create practical conditions for students to go to the society, exercise their talents and temper their character; on campus, they can actively use the second classroom to guide and organize students to carry out various meaningful activities Activities, including political, academic, literary, intellectual, competitive and public welfare activities, promote the collaborative innovation of professional education and ideological and political education, and maximize the effect of moral, intellectual, physical, aesthetic and labor collaborative education. At the same time, colleges and universities can also use the establishment of workshops, volunteer service centers, innovation and entrepreneurship incubation bases, moral education exhibition hall, Qingma project training camp, "three to the countryside" activity center, exhibition hall

of Chinese excellent national culture, Association Alliance, student union, etc. to develop a sustainable "curriculum ideological and political" practice platform in the form of flexible innovation through integration and accumulation of advantageous resources To form a systematic, perfect and dynamic "curriculum ideological and political" education ecosystem.

5.4 Make use of all media to "melt thinking" and create a soft environment for Education

Ideological and political education is a complex system engineering. Ideological and political literacy is the unity of direction, position, belief, viewpoint, attitude, method and feelings. The cultivation of Ideological and political literacy can not be achieved overnight, it needs to be done slowly and for a long time. At present, Omnimedia is famous for its ubiquitous, omnipresent and no one need. Colleges and universities should comply with the requirements of the development of the times, change their ideas, strive to promote the synergy of all media "thinking" and the top-level design of Ideological and political education, strengthen the construction of campus ideological and political culture, and create a soft environment for education. According to the characteristics of different grades and learning needs of different students, colleges and universities can enrich the cultural carrier of "Course Ideological and political" through classroom teaching, social practice, professional competitions, cultural and recreational activities, voluntary service, scientific research projects, internship and training, so as to achieve the educational goals at different stages; colleges and universities can use technical carriers such as graphics, videos, games, AR, etc, Enrich the forms of information dissemination, transfer information in a way that students like to hear and see, and give full play to the advantages of real-time, on-the-spot, real-world three-dimensional collaborative education; colleges and universities can make full use of the advantages of all media, fully mobilize the subjective initiative of students, teachers, school personnel and other departments, and play their role of "opinion leader" and "model benchmark" online and offline in the form of we media To create a complete education pattern; colleges and universities can use the advantage of "full effect media" to accurately deliver the ideological and political education content to every student, so as to ensure that college students can receive, learn, implement, transform and other education methods through the full media terminal in time.

6. CONCLUSION

Ideological and political education is not an isolated island, it needs the whole staff, the whole process and all-round efforts to build an education ecosystem. Colleges and universities should establish the concept of "great ideological and political education" and construct the pattern of "great ideological and political education", so that ideological and political education can permeate into the whole process of education in an all-round way, so that students can learn theoretical knowledge in class, practice it in life, nourish it in culture, refine and stick to it in practice, and grow into socialist builders and successors

with all-round development of morality, intelligence, sports, beauty and labor.

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Research on The Educational Practice Mode of Red Resources in Northern Guangxi From the Perspective of Cultural Confidence

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Abstract: The 19th National Congress of the Communist Party of China (CPC) pointed out that we should strengthen cultural self-confidence. Without a high degree of cultural self-confidence, we cannot talk about the great rejuvenation of the Chinese nation. Under the background of China's entering a new socialist era, how to continuously enhance cultural self-confidence has become one of the new topics given by the times. Red resources are the advanced culture formed and continuously developed by the party leading the people in the long-term revolutionary practice. As one of the important battlefields of the Red Army's long march in that year, Northern Guangxi has rich red cultural resources. Local colleges and universities should strengthen the integration of red resources in northern Guangxi, better transform the advantages of red resources into the advantages of Ideological and political education, and constantly improve the quality of education Innovate and improve the effectiveness of Ideological and political education in Colleges and Universities under the new situation.
Key words: Cultural confidence; Northern Guangxi red resources; Teaching practice mode

1. INTRODUCTION

Northern Guangxi is rich in red cultural resources, which is the cradle of revolution and the birthplace of the long march. However, the comprehensive utilization of red resources has not been high for a long time. Under the background of the party and the state's special emphasis on cultural confidence, colleges and universities in northern Guangxi should pay more attention to and tap the local red cultural resources, strengthen the integration of red cultural resources, and promote the realization of the development of red cultural resources The teaching resources of Ideological and political education in Colleges and universities should be transformed, and the ideological and political education in Colleges and Universities under the new situation should be constantly innovated.

2. ANALYSIS OF THE IMPORTANCE AND NECESSITY OF MAKING GOOD USE OF RED RESOURCES IN COLLEGES AND UNIVERSITIES FROM THE PERSPECTIVE OF CULTURAL CONFIDENCE

Red culture is a kind of culture formed in the process of long-term revolution and socialist modernization under the leadership of the party. It has distinctive historical, realistic and educational characteristics. In the process of Ideological and political education for college students, colleges and universities must make full use of all kinds of red resources and carry forward the spirit of red culture, which is the inevitable requirement of Innovating Ideological and political education in Colleges and universities from the perspective of cultural confidence.

2.1 Remember the original mission with the help of Red Resources

Red resources connect yesterday, today and tomorrow, which run through the history of the Communist Party of China, the history of national development and other important contents. With the help of red resources, young college students can learn the history of the party and the country, understand the glorious past of the party, understand how the party is moving from weak to strong step by step, and finally lead the Chinese people to overthrow the "three big mountains", which is conducive to strengthening the party National pride and cultural self-confidence of college students [1]. In the process of Ideological and political education of college students, the use of red resources to carry out rich and colorful education is conducive to let college students enhance their national pride and self-confidence, gain lessons, be inspired, and obtain positive energy. More importantly, through red resources to learn the history of the party and the country, let college students know more clearly why the Communist Party of China can lead me all the way Today, China has come to better understand the original intention and mission of the Communist Party of China, become more conscious and firm in the journey of realizing the great rejuvenation of the Chinese nation, and be a pioneer and devotee in the forefront of the times.

2.2 With the help of red resources, firm ideals and beliefs

Firm ideals and beliefs are one of the basic conditions and measuring indicators for the healthy growth and success of the young generation [2]. With the rapid development of the socialist market economy and the acceleration of the transformation of the times, many young people have deviations in their ideals and beliefs, and their ideals and beliefs tend to be utilitarian and pragmatic. As the hope and future of the motherland, the young generation should have lofty aspirations and firm faith, which is the inexhaustible driving force for the prosperity of the country and the nation. Red resources are valuable resources formed in the long-term revolutionary practice. They contain the magnificent fighting history and hard struggle history of the older generation of revolutionaries, and contain the revolutionaries' firm ideals and beliefs of defending truth and fearing power. At the same time, they are also important teaching carriers of Ideological and

political education. In the process of Ideological and political education, teachers organize students to visit the corresponding revolutionary memorial halls and revolutionary museums Sites, patriotic education base, etc., can stimulate the enthusiasm of the majority of college students to learn from the revolutionary martyrs, guide them to actively establish lofty communist ideals, firm lofty beliefs, and firm confidence in realizing the Chinese dream of the great rejuvenation of the Chinese nation.

2.3 With the help of red resources, we should be dedicated to serving our country

Patriotism is the core content of the national spirit. For the young generation of college students, loving the motherland and the people is the foundation of life and growth [3]. Red resources contain a strong spirit of patriotism, which has unique advantages in the process of patriotic education for college students. In the process of Ideological and political education, we should purposefully and consciously choose red resources to carry out patriotism education for college students. With historical events, revolutionary sites and corresponding literary works, we can let college students experience their own situation, feel the patriotism of the heroes to serve their country sincerely, and further stimulate their noble sentiment of loving the motherland and the people.

3. RESEARCH ON THE EDUCATIONAL PRACTICE MODE OF RED RESOURCES IN NORTHERN GUANGXI FROM THE PERSPECTIVE OF CULTURAL CONFIDENCE

The land of Northern Guangxi is an important place for the Red Army to pass the long march. 85 years ago, the Xiangjiang campaign was the most heroic and crucial battle in the process of the Red Army's Long March. 85 years later, it has become one of the most concentrated carriers and important display platforms of the great long march spirit [4]. Colleges and universities in northern Guangxi should actively make good use of this red education resource, constantly innovate the carrier and content of Ideological and political education in Colleges and universities in the new period, so as to make the red spirit glow with vitality and keep the spirit sustainable among college students.

3.1 Organization experience

Since the 18th National Congress of the Communist Party of China, the general secretary has repeatedly made important instructions on how to protect and make good use of red resources. The great long march spirit carries the fighting spirit and fighting spirit of the Communists who are not afraid of power. These great revolutionary fighting spirits are never out of date, and are important teaching materials for us to forge our original mind and remember our mission [5]. In recent years, governments at all levels in northern Guangxi have attached great importance to the protection and utilization of red relics. They have successively made great efforts to protect and repair the red relics in the territory. At the same time, they have fully mobilized all forces of the whole society to excavate and protect the red resources with the theme of the Xiangjiang campaign, so that the spirit of the Long

March can shine again in northern Guangxi. Now, Northern Guangxi has begun to develop It has built 17 national key cultural relics protection units of "Xiangjiang campaign series", 43 units, built Xiangjiang campaign site park as the core, including four sub parks of Lianghe, Fenghuang, Anhe and Daxijiang, and focused on building excellent projects of red cultural resources on both sides of Xiangjiang River, so as to protect and inherit local red resources more effectively. It can be said that at present, a relatively perfect red resource culture system has been established in northern Guangxi. In the process of making good use of local red resources, colleges and universities in northern Guangxi should first actively innovate ways and methods, build a variety of carriers and platforms, and let students experience and comprehend by themselves. They can actively promote party building day, theme party day activities, national day and other important activities Taking the festival node as an opportunity, we organize students to go to the local red relics, red parks and other places in batches to visit and study, guide the majority of young college students to experience and think actively in the process of on-the-spot visit, and better use red resources to wash their hearts, inspire their spirits, and devote themselves to the behavior of serving the country.

3.2 Active innovation

In recent years, Northern Guangxi has made great efforts to protect and inherit the local red resources. Various forms of red resources have been built successively, such as the memorial park for the Red Army's Long March breakthrough in Xiangjiang campaign in Xing'an, the Red Army Building in Huajiang and other red education bases; the "Red Culture Research Association in northern Guangxi" has been established, and a large number of positive and effective researches have been organized on the Red Army's Long March Xiangjiang campaign Through investigation and research, he successively established a series of publications such as Xing'an red forum, actively inherited the Xiangjiang campaign spirit of "brave victory, brave breakthrough and brave sacrifice"; he organized and compiled a large number of red books with pictures and texts, such as the Red Army's long march over Xing'an, and reportage, such as the footprints of the Red Army crossing the Xiangjiang River, so as to give high praise to northern Guangxi Therefore, colleges and universities in northern Guangxi should actively innovate forms and methods, and make targeted use of these red resources to carry out ideological and political education for college students. First, they should organize relevant experts, especially the vast number of front-line teachers, to set up a special research team to study the red resources in Northern Guangxi In order to integrate and classify the red resources, effectively integrate them into the ideological and political education system of colleges and universities, and realize the positive and effective connection and transformation of the red resources discourse to the ideological and political education discourse of colleges and universities. Second, it is necessary to re comb and re analyze the context of the red cultural resources in northern Guangxi, actively integrate the red characters, red stories and red culture in northern

Guangxi into the process of Ideological and political education in Colleges and universities, and focus on the education and inheritance process of Xiangjiang spirit, such as the spirit of struggle, the feelings of family and country, and the courage to be the first. Third, we should actively tap the era value of red resources culture in northern Guangxi, actively open and create all kinds of local courses with the spirit of the long march as the core in Colleges and universities, open corresponding elective courses for all college students, actively attract college students to participate, create contemporary ideological and political education resources with local atmosphere and the flavor of the times, and improve the ideological and political education in Colleges and Universities under the new situation Effectiveness.

3.3 Guide thinking and understanding

Northern Guangxi has a profound Long March culture and spirit [6]. In recent years, in order to actively carry forward the spirit of the long march in the new era, all localities have concentrated on the in-depth excavation and rational utilization of the local red resources and culture. For example, Guanyang county has actively organized the preparation of the "red tourism development plan of Guanyang county", striving to build the red resources of Guanyang into a national Red Classic scenic spot and patriot integrating red tourism and hiking on the Red Army road It can be said that the construction of the red resource system in northern Guangxi has begun to take shape. In the process of actively using these red resources for ideological and political education, colleges and universities should, on the one hand, actively strengthen the exploration and research, and on the other hand, strengthen the exploration and research In terms of teaching content, we should highlight the fresh features, actively use the revolutionary stories such as the Xiangjiang campaign as the breakthrough point, and deeply elaborate the revolutionary fighting spirit of the Communist Party of China. We should actively use these fresh red stories and red cases around students to enrich the ideological and political teaching classroom, so that students can feel them personally. On the other hand, we should improve the teaching methods In this process, we can also highlight the supporting role of modern scientific and technological means, and actively use a variety of multi-media means and facilities, especially the cloud computing technology, big data and other emerging Internet technology means, to achieve the goal At present, the red cultural resources in northern Guangxi are deeply integrated with the ideological and political education classes in local colleges and universities from various angles, aspects and levels. We should actively strengthen the practical teaching, transfer the ideological and political education classes from campus to extracurricular, and to the local red cultural sites or memorial halls. Through these vivid red cases, we can let the college students understand and think in practice, In order to enhance their feelings of loving the party and patriotism, they are determined to serve the country.

3.4 Encourage practice

In the process of actively using the local red cultural resources to enrich the ideological and political education classroom in Colleges and universities, many colleges and universities still have many practical problems to be solved in this process, such as inaccurate incision, poor practical effect and so on. The joint force of Ideological and political education in Colleges and Universities, especially the ideological and political education in curriculum, has not been fully revealed, such as the relationship between the ideological and political teaching knowledge and students' value guidance Improper handling, not fully standing in the strategic height of moral education to examine and use the local red resource culture, in the process of using the red resource culture in practice is too stiff, and so on. At the same time, it also fails to deal with the relationship between the dominant classroom and the recessive classroom, and so on. This is also the reason why many colleges and universities are making use of the local cultural resources to carry out curriculum ideological and political education for college students Therefore, in the process of actively using local red cultural resources to carry out ideological and political education for college students, colleges and universities in northern Guangxi should, on the one hand, take effective measures to avoid these problems in the process of using local red cultural resources; on the other hand, actively use local red cultural resources to educate students In the course of Ideological and political education, in addition to actively taking the above measures, such as organizing students to visit the local red memorial hall, revolutionary relics and patriotic education base, actively innovating teaching methods, and guiding students to enhance their perception and experience in this process, the most important thing is to actively achieve the unity of knowledge and practice, the combination of theory and practice, in other words, the combination of knowledge and practice It is to guide students to actively use red resources, red stories and red characters to compare themselves in this process according to the requirements of "keeping the original intention and grasping the implementation", to examine themselves with the profound revolutionary spirit, fighting spirit and fighting spirit contained in the red cultural resources, and to focus on finding their own shortcomings and gaps in thinking, learning, life and other links, and to make a further study in Japan In order to make contributions to the Chinese dream of socialist modernization and the great rejuvenation of the Chinese nation in the new era, we should constantly make corrections and improvements in our study and life, make efforts to move forward towards the red people and the red spirit, transform this red spirit into our own practical action, and transform it into conscious action of hard study and healthy growth We should make greater contributions to ourselves.

4. CONCLUSION

In short, the red cultural resources are the profound cultural history and cultural treasure house, the precious spiritual wealth of our party and country, carrying the great fighting spirit of the Chinese Communists for national rejuvenation and national liberation, and the important carrier and support of the ideological and

political education of college students in the new era. In recent years, Northern Guangxi has been strengthening the protection and inheritance of local red cultural resources. A large number of red cultural resources platforms with the theme of carrying forward the spirit of the long march have been built. The local red cultural resources system has been basically completed. Colleges and universities in northern Guangxi should actively use and inherit these cultural resources to effectively promote the development of red culture To carry out ideological and political education for college students, and constantly improve the effectiveness of Ideological and political education in Colleges and universities in northern Guangxi in the new period.

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Analysis on the Factors Influencing the Gold Medal Winning of Chinese Trampoline Team in Tokyo Olympic Games

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Abstract: Through the methods of literature review and mathematical statistics, this paper analyzes the competitive performance and performance of Chinese and foreign elite trampoline athletes from 2017 to 2020, analyzes the influencing factors of Chinese trampoline athletes winning gold in Tokyo Olympic Games, and puts forward some suggestions. The results show that: the difficulty of the complete set of movements of Chinese male and female athletes is basically the same as that of foreign athletes, the overall performance is excellent in technology, the movement height and position stability of top athletes are better; the flight time has no advantage, and the fluctuation of performance is the main factor affecting the gold medal of Chinese trampoline in Tokyo Olympic Games. In view of the influencing factors, it is suggested that the Chinese trampoline team should enhance the difficulty of optional movements and normalize the use of the highest difficulty; in training, the flight time of athletes should be taken as the key work of monitoring and improving, the monitoring of the success rate of complete sets of movements should be strengthened, and the training of psychological stability should be further strengthened.
Key words: Chinese trampoline team; Tokyo Olympic Games; Gold medal; Influencing factors

1. INTRODUCTION

Due to the worldwide spread of New Coronavirus (2019-nCoV), the Tokyo Olympic Games in 2020 had to be postponed until 2021. In the face of the approaching Tokyo Olympic Games, it is necessary to sort out the results of the world trampoline competition in the Tokyo Olympic cycle, and on this basis, make a comparative analysis of the movement difficulty, height, technology and displacement of Chinese and foreign elite athletes, so as to reveal the influencing factors of China's trampoline winning gold in the Tokyo Olympic Games, and provide countermeasures for the Chinese team to better prepare for the Tokyo Olympic Games, In order to achieve excellent results in the Tokyo Olympic Games.

2. RESEARCH OBJECTS AND METHODS

2.1 Research objects

Taking the competitive performance and performance of Chinese and foreign elite trampoline athletes from 2017 to 2020 as the research object, this paper takes the research method of 2.2 as the research method

2.2.1 Literature method

According to the research needs, this paper systematically combs the results of major world trampoline competitions from 2017 to 2019, in order to provide data support.

2.2.2 Mathematical statistics

SPSS15.0 statistical analysis software was used to analyze the influencing factors of Chinese trampoline team in order to reveal the internal relationship between the research elements.

3. ANALYSIS OF THE INFLUENCING FACTORS OF CHINA TRAMPOLINE WINNING GOLD IN TOKYO OLYMPIC GAMES

Trampoline athletes are better than two sets of movements in the preliminary competition, namely the first set of movements (generally referred to as prescribed movements) and the second set of movements (generally referred to as optional movements), and they are better than one set of optional movements in the final competition. The required action is a set of action [1], which is made up of the special requirements of the rules according to the rules. It is a concentrated expression of [2] that is comprehensive, advanced, correct and artistic in evaluating the basic movements and basic skills of athletes. Because the athlete only carries on the competition of optional movement in the final, the level of optional movement has an important influence on the athlete's position.

3.1 Difficulty analysis of optional movements

3.1.1 Analysis of the difficulty of men's optional movements

Figure 1 shows that the common difficulty of Chinese men is 17.1-17.5, and the highest difficulty is 17.8-18.2. The common difficulty of foreign main opponents is 17.8-18.2, and the highest difficulty is 17.8-18.2. It can be seen that although the highest difficulty of Chinese athletes is similar to that of foreign athletes, the common difficulty is obviously lower than the highest difficulty, while the common difficulty of foreign main opponents is consistent with the highest difficulty, which suggests that Chinese male athletes should learn from the experience and rules of foreign men's training and competition in preparing for the Tokyo Olympic Games, and upgrade the common difficulty to the highest difficulty, so that the highest difficulty can be achieved Use normalization, and then improve the use rate of the most difficult and skilled movements.

3.1.2 Analysis of the difficulty of women's optional movements

Figure 2 shows that the common difficulty of Chinese women is between 14.4-14.8, and the highest difficulty is between 14.4-15.2. The common difficulty of foreign main opponents is between 14.4-15.0, and the highest

difficulty is between 14.4-15.4. It shows that Chinese players have no advantage in common difficulty or the highest difficulty compared with foreign main opponents, and even there is a certain gap between individual players. Excellent female trampoline athletes in China must strengthen the reserve of high difficulty complete sets of movements, and make rational use of the reserve of difficulty and stability, which is the content that must be

strengthened in the future training of high-level athletes in China [3]. Therefore, in the process of preparing for the Tokyo Olympic Games, Chinese women athletes should increase the difficulty of common movements, Zhu Xueying should increase the highest difficulty to common difficulty, and Liu Lingling should explore the possibility of increasing the difficulty on the basis of ensuring the stability of the whole set of movements.
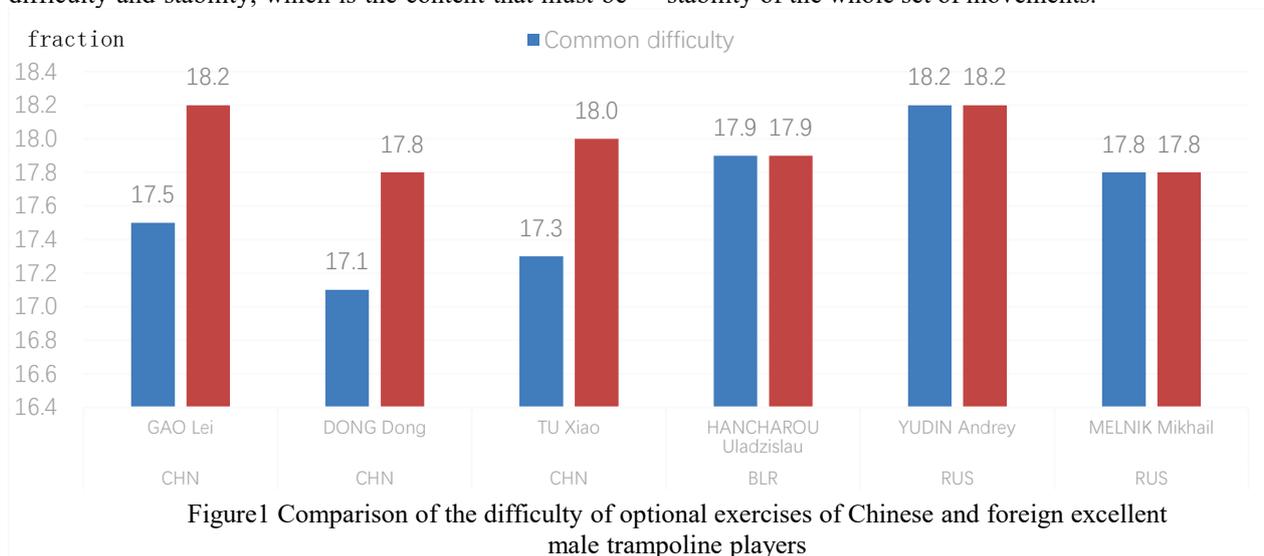
Figure1 Comparison of the difficulty of optional exercises of Chinese and foreign excellent male trampoline players

Note: the data comes from the statistics of athletes in the competition in 2019.
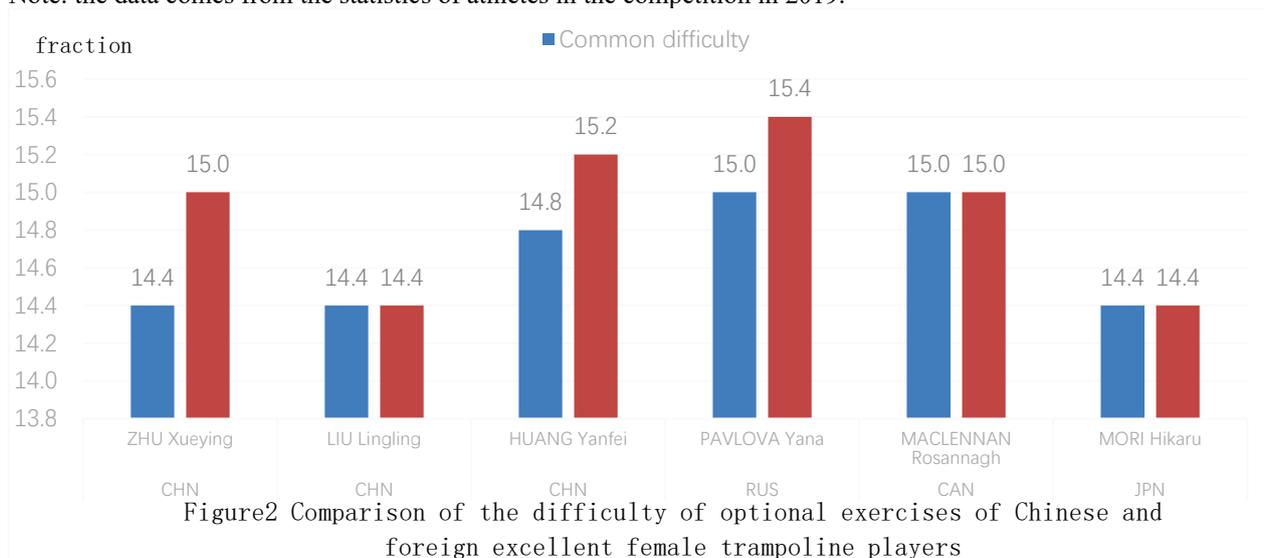
Figure2 Comparison of the difficulty of optional exercises of Chinese and foreign excellent female trampoline players

Note: the data comes from the statistics of athletes in the competition in 2019.

To sum up, the difficulty reserve of optional movements of Chinese male and female athletes is basically equivalent to that of foreign main competitors. According to the need to improve the competitive strength, it is suggested to normalize the use of the highest difficulty, and individual athletes should also appropriately increase the difficulty of the movements, so as to ensure that the gold medal winning strength can be enhanced in difficulty.

3.2 Flight time analysis of optional action

Flight time refers to the time for athletes to complete 10 consecutive flipping movements accurately recorded by electronic timing instrument according to the requirements of international trampoline scoring rules [4]. Flight time is a direct reflection of the athlete's altitude,

which has an important impact on the technical completion and displacement control.

3.2.1 Analysis of the flight time of men's optional movements

Figure 3 shows that China's male player Gao Lei has a leading advantage in flight time, with the highest flight time of 18.295 points, which is the only player who can achieve more than 18.000 points. Among the foreign players, hancharou uladzislau has the highest flight time of 17.760 points, and Melnik Mikhail has the highest flight time of 17.620 points, which is outstanding and relatively stable in flight time. This shows that our male player Gao Lei has absolute strength in flight time, which should be solidified in training and competition to further

improve the stability of his performance. The flight time of other players has no advantage compared with foreign players, and even becomes the main factor restricting the improvement of performance.

Figure3 Comparison of the flight time of the optional actions of Chinese and foreign excellent male trampoline players
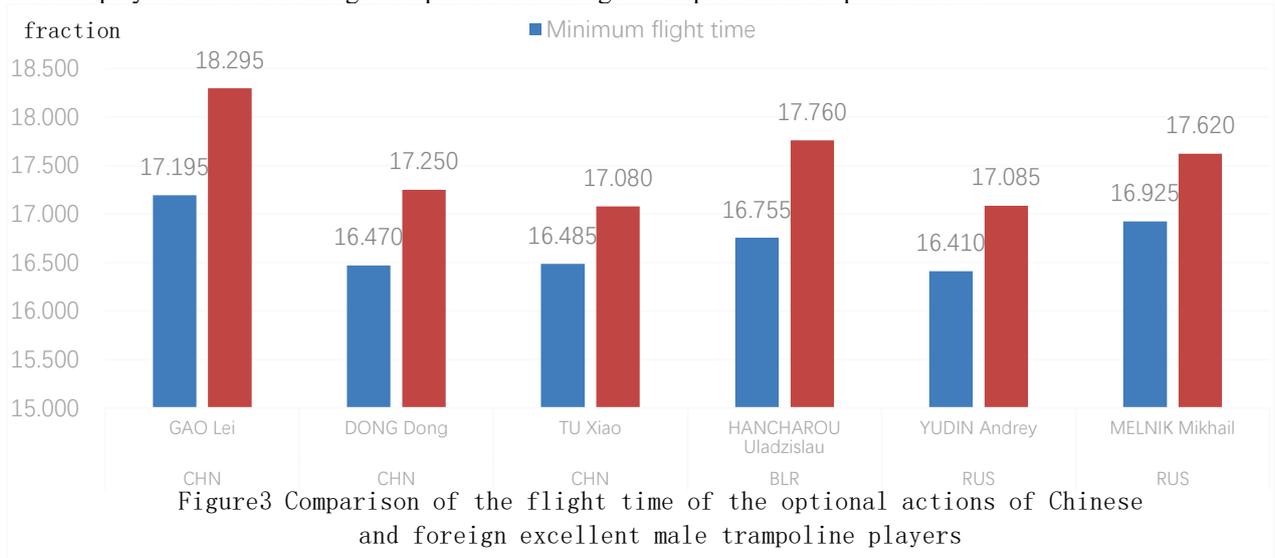
Note: the data comes from the statistics of 5 world competitions in 2019.

3.2.2 Analysis of flight time of women's optional movements

Figure 4 shows that China's female athlete Liu Lingling has a leading advantage in flight time, with the highest flight time of 16.350 points, which is the only one who can achieve more than 16.300 points. Among foreign athletes, Mori Hikaru's highest flight time is 16.250 points, Pavlova Yana's highest flight time is 16.000 points, and these three players have outstanding and relatively stable performance in flight time. This shows that Liu Lingling, a Chinese female athlete, has a high strength in flight time, which should be solidified in training and competition. Keeping the stability of flight time is the focus of preparation. Compared with foreign athletes, Liu Lingling's flight time has no advantage, and even becomes the bottleneck of improving her performance.

Figure4 Comparison of the flight time of the optional actions of Chinese and foreign outstanding female trampoline players
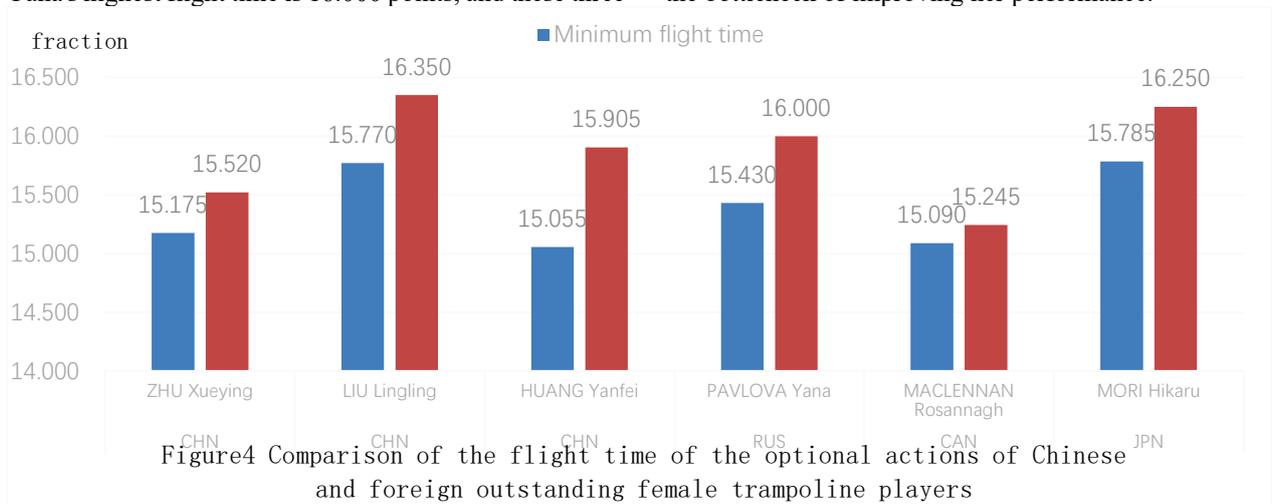
Note: the data comes from the statistics of 5 world competitions in 2019.

Based on the above analysis, China's men's Gao Lei and women's Liu Lingling have a leading advantage in flight time, while other men's and women's flight time needs to be further improved. According to the performance of foreign competitors, Chinese male and female athletes must break through the bottleneck of flight time in training, so as to enhance the absolute strength of winning gold in Tokyo Olympic Games.

3.3 Optional action completion quality analysis

Since 2007, China's trampoline has entered a stage of leapfrog development. In the trampoline world competition, a "Chinese technical school" with "high movement, standard technology and accurate landing point" has been formed. It can be said that the technical advantage has always been one of the "unique skills" of China's Trampoline.

3.3.1 Quality analysis of men's optional movements

Figure 5 shows that the overall technical score of Chinese men's players is excellent, which can basically maintain at the level of 16.4 points or more. Compared with the main foreign competitors, Chinese men's players have certain technical advantages. Among the foreign players, hancharou is the best Uladzislau's technical level is the highest, and the technical score can be maintained at about 16.7, which is slightly higher than that of Chinese players, indicating that Chinese men's players should further improve their technical level in order to establish more advantages in technical performance. In addition, Tu Xiao

showed high stability in technical score, while Gao Lei and Dong Dong showed great fluctuation. Gao Lei's fluctuation reached 1.3 and Dong Dong's fluctuation reached 1.5. It can be seen that improving the stability of technical performance will be one of the key tasks for men's athletes in preparing for the Tokyo Olympic games.
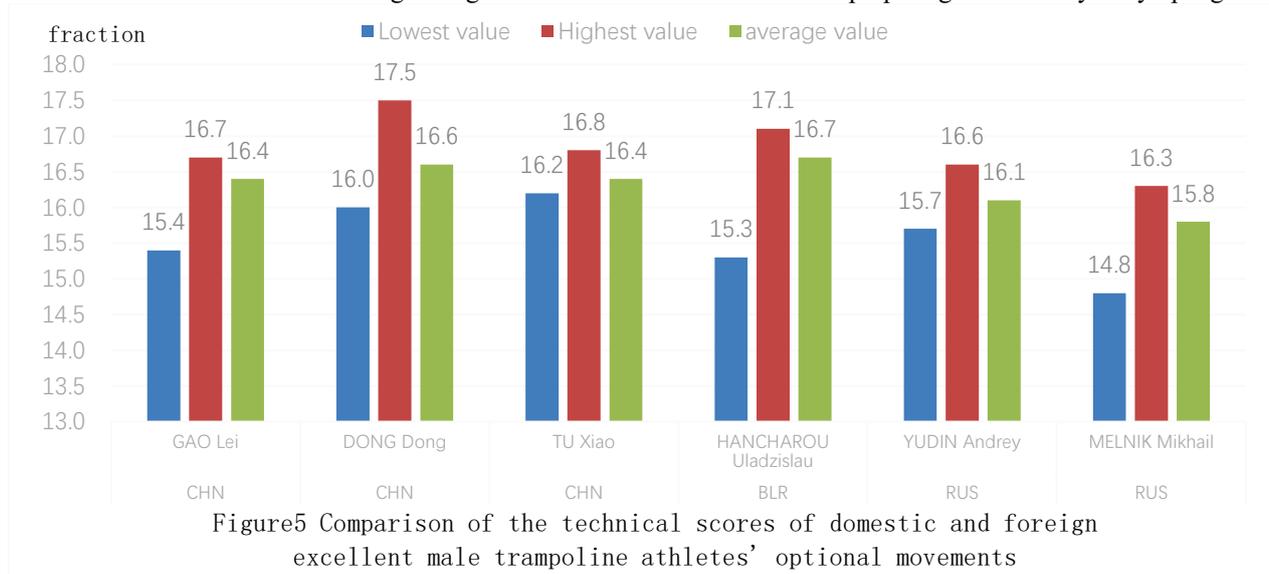
Figure5 Comparison of the technical scores of domestic and foreign excellent male trampoline athletes' optional movements

Note: the data comes from the statistics of 5 world competitions in 2019.

3.3.2 Quality analysis of women's optional movements
Figure 6 shows that China's Zhu Xueying has obvious advantages in technical performance, with an average of 17.0 points, while Liu Lingling's technical level is basically equal to that of foreign main competitors. Huang Yanfei has some shortcomings in technical performance, while foreign player Mori has some shortcomings Hikaru's technical level is relatively high, which can basically maintain above 16.3 points, indicating that there is still room for further improvement in the technical performance of Chinese women players. In addition, in terms of the stability of the technical score, the three Chinese women athletes all have great ups and downs, Zhu Xueying's ups and downs is 1.1, Liu Lingling's ups and downs is 1.6, and Huang Yanfei's ups and downs is 1.2. It can be seen that the ups and downs of the technical performance will have an important impact on the gold medal winning of the Tokyo Olympic Games, so it should be paid attention to and solved as the focus of the preparation work.
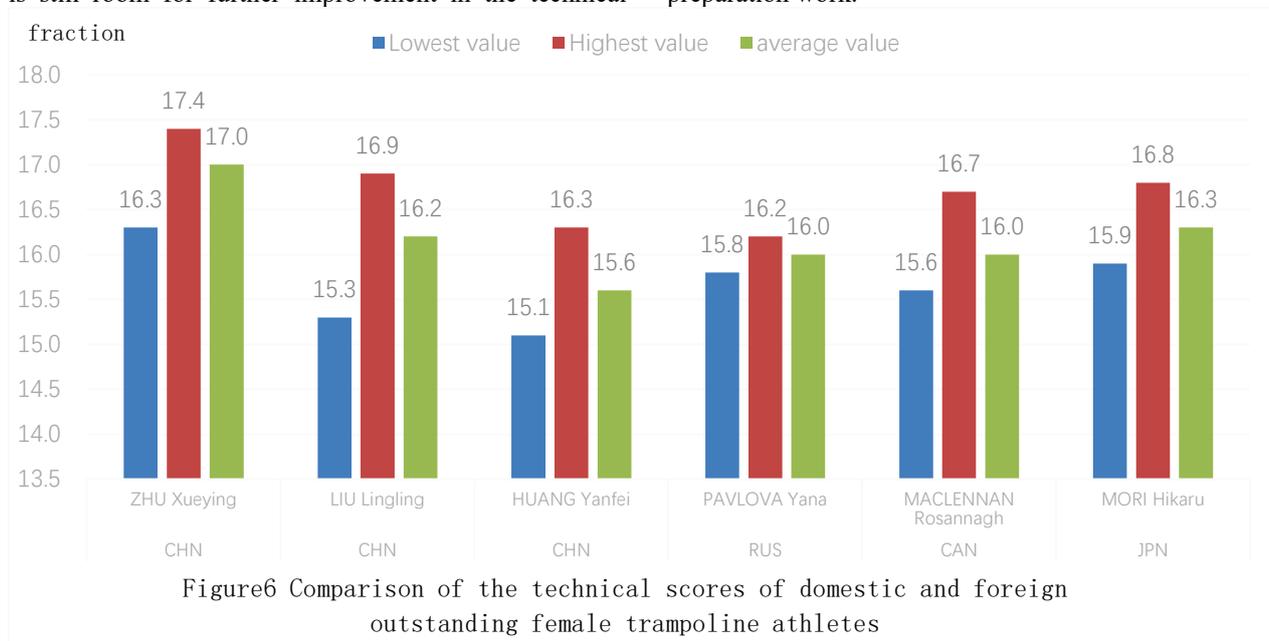
Figure6 Comparison of the technical scores of domestic and foreign outstanding female trampoline athletes

Note: the data comes from the statistics of 5 world competitions in 2019.

To sum up, the technical level of male players Gao Lei, Dong Dong, Tu Xiao and female players Zhu Xueying and Liu Lingling have certain advantages in the competition with their main competitors. In the training, we should focus on improving the stability of the completion of movement technology, strive to maintain the technical performance of athletes at a higher level, and avoid large fluctuation of the completion quality of movement.
3.4 Stability analysis of optional action
Sports performance is the level of athletes' competitive ability in the competition [5], which has a direct decisive role in the ranking of the competition. The stability and

consistency of sports performance is an important guarantee for athletes to achieve excellent results. Therefore, the stability of competition position and sports performance plays a decisive role in the final performance of athletes.

3.4.1 Analysis on the stability of the ranking and performance of men's optional movements

Table 1 shows that China's Gao Lei ranked second in the preliminary round, first in the semi-final and final round, third in the preliminary round, fourth in the semi-final round and third in the final round, which shows that the

two players show high stability and high recognition of the referee. Foreign player litvinovich Ivan was the fourth in the preliminary, and the second in the semi-final and final, showing a good and stable state. Although Yudin Andrey's ranking fluctuated greatly, its progress trend was getting better and better, from the 11th in the preliminary to the third in the semi-final, and finally won the fourth in the final. On the whole, the ranking performance of Chinese male players is relatively stable, and the referee has a high recognition of their technical performance.

Table 1 ranking and performance of top 4 men's Trampoline Players in the 2019 trampoline World Championship

Ranking	full name	different countries	Ranking			Score (points)		
			preliminary	Semifinals	finals	preliminary	Semifinals	finals
1	Gao Lei	China	2	1	1	61.805	61.460	61.705
2	LITVINOVICH Ivan	Belarus	4	2	2	61.235	60.300	61.520
3	Dong Dong	China	3	4	3	61.485	60.190	61.050
4	YUDIN Andrey	Russia	11	3	4	58.920	60.295	60.465

Table 1 also shows that among all the competitors, Gao Lei of China has the best performance stability, and the results of the three competitions can be maintained at about 61.500 points, which lays the foundation for his final victory. Compared with Gao Lei, the results of the other three players fluctuated greatly. Although litvinovich Ivan and Dong Dong also scored above 61.000 points, litvinovich Ivan's fluctuation reached -1.229 points and Dong Dong Dong's fluctuation reached -1.295 points. Dong Dong's achievements fluctuate greatly, which is one of the main factors affecting his gold medal winning in the Tokyo Olympic Games. Therefore, in the training, we must make a comprehensive diagnosis of the factors of his achievements and put forward effective solutions.

3.4.2 Stability analysis of women's optional action ranking and performance

Table 2 shows that Huang Yanfei of our country has a good performance in the overall ranking, ranking second in the preliminaries and first in the semi-finals, but has won the fourth place in the finals, which indicates that the stability of her ranking and the ability of the final need to be improved. Foreign player Mori Hikaru's ranking stability is the best. With the progress of the competition schedule, her ranking steadily improved and finally won the championship. Although her ranking has some ups and downs, her performance in the final is excellent, and the final ranking is the highest in the competition. On the whole, the stability of Chinese women athletes' position needs to be improved, and the focus of training should be to strengthen the control ability of movements and improve the stability of complete sets of movements.

Table 2 ranking and performance of top 4 women Trampoline Players in the 2019 trampoline World Championship

Ranking	full name	different countries	Ranking			Score (points)		
			preliminary	Semifinals	finals	preliminary	Semifinals	finals
1	MORI Hikaru	Japan	3	2	1	55.665	56.290	55.860
2	DOIHATA Chisato	Japan	5	6	2	54.640	54.590	55.225
3	MACLENNAN Rosannagh	Canada	10	4	3	55.765	54.930	54.820
4	Huang Yanfei	female	2	1	4	56.025	56.820	54.705

In terms of performance, the results of the four players have some ups and downs, but the ups and downs of foreign players are less than 1.0 points, the positive and negative values are between 0.625-0.945 points, and the ups and downs of two Japanese players are the smallest (Table 2). Huang Yanfei of China performed well in the preliminaries and semi-finals, with 56.000 points in both competitions. However, she failed to maintain the good performance in the preliminaries and semi-finals in the final, with a fluctuation of - 2.115 points, which directly led to her failure to win the medal. This shows that Huang Yanfei has the strength to win the gold medal, but the stable performance should be improved.

To sum up, China's male player Gao Lei has the highest

level in ranking and performance stability, while other male and female players have great fluctuations in ranking or performance, especially the female players, who still need to focus on improving the success rate of completing actions. It is suggested that attention should be paid to the complete set of actions for female players in training

4. CONCLUSION

4.1 Difficulty: Although Chinese men's players are equal to foreign players in the highest difficulty, the common difficulty is significantly lower than the highest difficulty. Women's players have no advantage in both common difficulty and the highest difficulty compared with foreign main competitors. It is suggested that Chinese men's and women's players improve the difficulty of optional

movements and normalize the use of the highest difficulty.

4.2 Height: China's top male and female athletes have absolute strength in flight time, but the flight time of other athletes has no advantage compared with foreign athletes, and even has become the main factor restricting the improvement of performance. It is suggested that the flight time of athletes should be taken as the key work of monitoring and improving in training.

4.3 Technical aspect: the overall performance of Chinese male and female athletes' technical score is excellent, but there are some ups and downs. It is suggested that in training, we should focus on improving the stability of the completion of movement technology, strive to maintain the technical performance of athletes at a higher level, and avoid large fluctuations in the quality of movement completion.

4.4 Stability: China's top male and female athletes are relatively stable in ranking performance, but their performance fluctuates greatly, especially the female athletes need to focus on improving the success rate of completing movements. It is suggested to strengthen the monitoring of the success rate of complete sets of movements of male and female athletes in training, and further strengthen the training of psychological stability.

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Beneficial Effects of Aromatherapy on Electro-Encephalogram, Psychological Assessments, Salivary Cortisol

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Abstract: This study aimed to evaluated the effects of aromatherapy interventions on multiple neurobiological measures such as quantitative psychological test batteries, electroencephalogram (EEG) pattern and salivary cortisol. A control group without treatment and aromatherapy group were randomly recruited. Aromatherapy was carried out by inhalation of 5% lavender essential oil for 20 min using aroma lamp. Twenty minutes inhalation of lavender oil was significantly improved all psychological assessment scores in Short Form of Psychosocial Well-being Index, Beck Depression Inventory and Stat-Trait Anxiety Index, as psychological test batteries. In addition, Alpha-brain wave activities were significantly enhanced and salivary cortisol levels were significantly reduced immediately after aromatherapy. These results suggest that aromatherapy could exert significant influences on multiple psychological indices assessments, neurobiological measures such as EEG pattern and salivary cortisol.
Key Words: Aromatherapy, Lavender, Stress, EEG, Cortisol

1. INTRODUCTION

Persistent exposure to a high level of stress causes several emotional and physical distress and stress-related illnesses, depending on the individual's stress fragility. One of major physiological systems responding to stress is the hypo- thalamus-pituitary-adrenal (HPA) axis which controls reactions to stress and regulate many physical reactions, such as secretes cortisol which was generally thought as a stress hormone. Cortisol increases as an adaption to the stressor and plays an important role in stress, depression and anxiety [1-4]. Several complimentary techniques such as biofeedback, meditation and aromatherapy massage have been developed to relieve stress [5-7]. In fact, aromatherapy massage is the combined treatment of body massage and aromatherapy. Because essential oil from plants is administrated via inhalation or massage application since it is absorbed into the body via the olfactory system or the skin. Although the beneficial functions aromatherapy massage have been often reported, but aromatherapy using a pure essential oil is poorly understood.

Lavender, which was widely used in aromatherapy is commonly used for virucidal, bactericidal, medicinal and cosmetic application. The extract of lavender have been reported that has a extensive range of biological effects, such as anti-inflammatory, antioxidant [8, 9] and neuroprotective [10]. And essntial oil of lavender could improve short-term memory [11]. Phytochemical studies have identified con- statements in this plant, such as flavonoids, phenols and terpenoids and some of these constituents have been reported have antidepressant effect [12].

Therefore, we investigated here whether aromatherapy using a pure essential oil could induce the typical alteration of EEG patterns, salivary cortisol level and quantitative psychological assessment.

2. MATERIALS AND METHODS

2.1. Participants and aromatherapy pro- gram

A total of 40 females aged 19 to 40 years volunteered to participate in the present study. Single blind controlled study was used in the present study and they were randomly assigned to either the aromatherapy group (n=20) or control group (n=20) as described in previous study[7].All experiments were conducted in bright and quiet room at ambient temperature. Participants in control group were performed the first measurement in control room and after 20 min carry out the second measurement. Participants in aromatherapy group were performed the first measurement in the control room for control and moved to the aroma room for inhalation lavender essential oil for 20 min and then carry out the second measurement (Fig. 1). Aromatherapy was carried out by inhalation of commercial lavender essential oil (Sydney Essential Oil Co, Australia) which was added to a heating aroma lamp. To produce fragrance strong enough to be smelled, 5% (v/v) of lavender essential oil in distilled water was continuously added to the aroma lamp during the experiment in aroma room.

2.2. EEG recording and power spectrum analysis

The tester were put the participants in a comfortable position and attached the electrodes to the participants. After relaxing in a comfortable chair with arm supports, EEG data were recorded for 5 min using the computerized EEG recording system (BIOPAC MP36, CA, USA) by the trained tester. Recording electrodes were placed on prefrontal (Fp1 and Fp2) and on occipital (O1 and O2) scalp regions according to the international 10-20 electrode system using a ECI electrode cap (Electro-Cap International, OH, USA), and connected to BIOPAC MP36 system with flexible insulated cables. After recording, the EEG data was analyzed using the BrainMAP-3D 2.0 program (LAXTHA Inc, Dajeon, Korea).

2.3. Psychological assessments

To investigate psychological state, The Psychosocial Well being Index-short form (PWI-SF), Beck Depression

Inventory (BDI) and state-trait anxiety inventory (STAI) were used to measure the subjects's level of stress, depression and anxiety in this study. The PWI-SF includes 18 questions, and each question is answered on a 4-point scale from 0 to 3 points, higher scores indicating higher levels of stress. The BDI consists of 21 self-reported questionnaires that evaluate the depression level of the subjects. Each question is answered on a 4-point scale from 0 to 3 points. Higher scores represent more severe symptoms. STAI was used to measure the subjects's level of anxiety, which is a widely used, validated measure of anxiety levels. State anxiety scale consists of 20 statements that evaluate how the subjects feel at the present time. Each question is answered on a 4-point scale from 1 to 4 points, with higher scores indicating higher levels of anxiety. The internal consistency (Cronbach's alpha coefficient) of the STAI, BDI and PWI were 0.92, 0.94 and 0.95 respectively.

2.4. Measurement of cortisol

For the salivary samples, aromatherapy group were taken before and after lavender inhalation. After rinsing the mouth with water, 2 ml of salivary fluid was collected into a sterile graduated container, centrifuged for 5 min at 2, 500 rpm, and the supernatant was taken and stored frozen at -20°C until use. Cortisol concentration was determined using competitive EIA according to the manufacturer's protocol (Cortisol EIA kit, ALPCO Diagnostics, USA).

2.5. Statistical analysis

Statistical analysis were conducted using SPSS 17.0 software. Mann-Whitney U- test was used to analyze the group homogeneity between the control and therapy groups before experiment. Paired *t*-tests were employed to analyze the differences in multiple neurobiological measures between pre and post- interventions to evaluate the effects of aromatherapy.
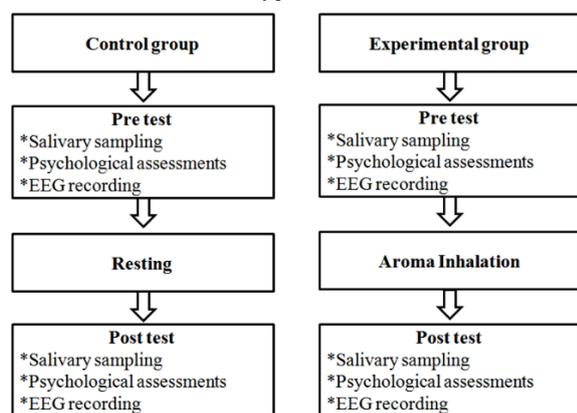

Fig. 1. Process flow diagram.

3. RESULTS

3.1. Homogeneity between the therapy and control group

A total of 40 subjects volunteered to participate in the present study. They are all students of Jeju National University. There were no statistically significant differences between the aromatherapy group and control group in assessment scores in STAI (p = 0.5), BDI (p = 0.3) and PWI-SF (p = 0.4), resting EEG pattern Alpha (p = 0.7), Beta (p = 0.6), Theta (p = 0.6), Delta (p = 0.8), cortisol levels (p = 0.2) and age (p = 0.4) based on Mann-

Whitney U-test, suggesting the homogeneity between the aromatherapy group and control group before experiment (Table 1).

Table 1. Homogeneity of dependent variables between the treatment groups.

Variable	Control (n=20)	Therapy (n=20)
Age	22.2 (3.0)	24.1 (5.3)
STAI	40.8 (8.0)	42.1 (6.9)
BDI	6.7 (7.6)	8.6 (7.6)
PWI-SF	17.3 (8.6)	20.2 (7.9)
Salivary Cortisol (ng/ml)	3.9 (0.6)	3.7 (0.5)
Alpha Power (%)	16.9 (13.4)	16.4 (9.0)
Beta Power (%)	5.7 (3.0)	5.2 (2.9)
Theta Power (%)	10.1 (5.2)	11.2 (5.4)
Delta Power (%)	66.8 (17.2)	66.8 (13.5)

*There were no significant differences between the treatment groups.

3.2. Effects of aromatherapy on EEG power spectrum pattern

Individual brain rhythms of alpha, beta, theta and delta waves were measured immediately after one-time aromatherapy treatment, compared to the time point before treatment (Fig. 2). Mean alpha activities was 16.4 ±9.0%, and that increased to 26.5 ±12.9%, and the difference between before and after the intervention in the aromatherapy group was significant (*p*= 0.007). Mean delta activities was 66.8 ±13.5%, and that decreased to 51.2 ±12.7%, and the difference between before and after the intervention in the aromatherapy group was significant (*p*= 0.002). In control group rest condition for 20 min did not affect the measurement.
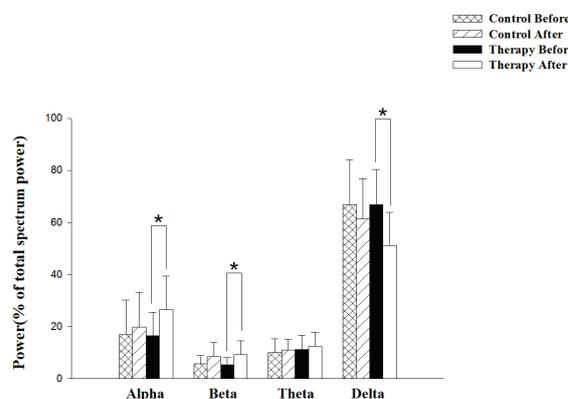
Fig. 2. Effects of one-time aromatherapy on EEG power spectrum pattern. Effects of one-time aromatherapy intervention on EEG pattern were analyzed using power spectrum analysis. The relative power of each of the four spectral bands including alpha (8-13 Hz), beta (13-25 Hz), theta (4-7 Hz) and delta (0.5-4 Hz) waves was expressed as mean value ±SD percentage (%) of the total spectrum power. Symbols represent the significance of pre-post differences in the aromatherapy group using paired *t*-test: *p<0.05.

3.3. Effects of aromatherapy on psychological assessments

Effects of aromatherapy on anxiety, depression and stress indices were evaluated using psychological test batteries

such as STAI, BDI and PWI-SF. Anxiety, depression and stress assessment scores were 42.1 ±6.9, 8.6 ±7.6 and 20.2 ±7.9 and after intervention that scores were decreased to 36.2 ±5.4, 4.4 ±4.4 and 16.9 ±5.9, the difference between before and after the intervention in the aromatherapy group were significant (p= 0.00001, p= 0.005, p= 0.001). Rest condition for 20-minute did not affect the measurement (data not shown). Taken together, aromatherapy significantly improved psychological assessment scores in STAI, BDI and PWI-SF (Fig. 3), suggesting that aromatherapy has a potential to relieve stress.
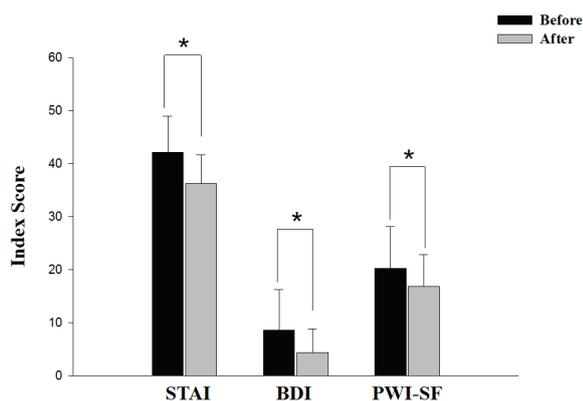

Fig. 3. Effects of aromatherapy on psychological assessments. Differences instress, depression and anxiety indices between pre- and post-aromatherapy were evaluated using psychological test batteries such as STAI, BDI and PWI-SF. Symbols represent the significance of pre-post differences in the aromatherapy group using paired *t*-test: *$p<0.05$.

3.4. Effects of aromatherapy on salivary cortisol levels
Salivary cortisol level of aromatherapy group was 3.7 ±0.5 ng/ml and decreased to 3.4 ±0.4 ng/ml, when they were measured immediately after one-time aromatherapy treatment. The difference between before and after the aromatherapy in the aromatherapy group was significant (*p*= 0.0004). Above finding suggest that inhalation of lavender decrease salivary cortisol level (Fig. 4).
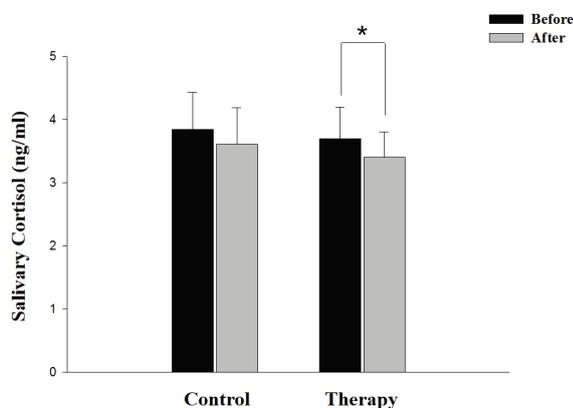

Fig. 4. Effects of aromatherapy on cortisol levels. Salivary cortisol levels were determined just before and after one-time aromatherapy treatment using EIA analyses. Symbols represent the significance of pre-post differences in the aromatherapy group using paired *t*-test: *$p<0.05$.

ACADEMIC PUBLISHING HOUSE

4. DISCUSSION

Among alternative therapies, aromatherapy has its own advantages like easy to apply and fast-acting, but the neurological effect of aromatherapy on EEG patterns has not been clearly defined. However, most studies about aromatherapy are about aromatherapy massage or have many limitations. For example, most of the research methods are limited in the psychological assessment, without combining the psychological assessment with specific biological effect indicators. In this study, we investigated here whether pure aromatherapy could induce the typical alteration of EEG patterns, salivary cortisol level and quantitative psychological assessment.

EEG is used as a neurophysiological technique to reflect the brain state or brain activity. EEG is derived from electrical charge movement between synaptic membranes within the cerebral cortex, and EEG rhythms are categorized by their frequency range. Brain activities of alpha rhythm were generally enhanced during meditation and especially theta rhythm activities were prominent in more experienced meditators[13]. In particular, alpha waves in EEG have been the main target of training-induced changes by operant conditioning in neurofeedback. Several studies demonstrated that improved EEG alpha power by neurofeedback training enhanced cognitive task performance[5]. Just inhaled the lavender essential oils could also significantly increase short-term memory of the participants[11]. In this study, the alpha-brain wave activities were increased and delta activities were significantly reduced after one-time aromatherapy treatment. These EEG spectral patterns are similar to typical alteration of brain rhythms shown in neurofeedback training and meditation [5, 13].

Health problems in modern people such as stressful life events, depression and sleep disturbances, can increase cortisol secretion. And high cortisol level is recognized as an important risk factor for many adverse physical and mental health problems, including cancer, cardiovascular diseases and Alzheimer's disease[14-16]. Because of sensitivity of cortisol on stress, salivary cortisol was taken immediately before and after one-time aromatherapy intervention. Salivary cortisol was significantly decreased after aromatherapy, suggesting that the interventions may reduce cortisol release from the hypothalamus-pituitary-adrenal (HPA) axis. This result is consistent with our psychological assessment and suggested that one-time intervention reduce anxiety and level. Taken together, we demonstrate here that aromatherapy might exert a beneficial effect on stress management and prevent stress-related problems via body-brain interaction.

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Application of Artificial Intelligence in Bridge Engineering

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Abstract: In the context of new infrastructure, artificial intelligence (AI) technology is increasingly used in the part of bridge health monitoring. There is no relevant content in current bridge engineering textbooks and the textbook cannot satisfy the training of students in universities. Thus, the knowledge of "AI+health monitoring" needs to be added to bridge engineering, focusing on the artificial neural networks, BIM, GNSS, and application of AI technology in the field of bridge health monitoring. Restructuring the course of bridge engineering is conducive to the development of the industry and cultivate high-quality talents in the new era.
Keywords: Bridge engineering; Course reform; Artificial intelligence; Bridge health monitoring

1. INTRODUCTION

The structural health monitoring system was introduced in the field of bridge engineering in the 1980s and developed rapidly[1]. In recent years, artificial intelligence (AI) technology is expanding rapidly. Multiple technologies have been applied to structural health monitoring systems, making the structural health monitoring system more complete. The health monitoring system can be used to perform real-time monitoring of the key mechanical parameters of different forms of structural bridges. Based on the plenty of health monitoring data and advanced evaluation theories, the system can quantitatively evaluate the long-term performance and safety of the bridge during service. In the layout of large-span and complex bridge structures, bridge health monitoring systems have become an indispensable part.

In the current bridge engineering textbooks, the relevant knowledge of the structural health monitoring system has not yet been involved. In the context of artificial intelligence, the current system of bridge engineering knowledge cannot meet the educational requirements of colleges and universities for students. Reconstruction of "AI + health monitoring" the course content is to fill knowledge gaps and fit professional development. The updated bridge project can enhance students' interest in learning, cultivate their innovative and logical thinking, and exercise their practical and decision-making abilities. Cultivating new-type engineering talents that meet the needs of the times is of great significance to promoting the integration of industry, university and research [2].

2. REFORM OF "AI+HEALTH MONITORING" BRIDGE COURSE CONTENT

2. 1 Artificial neural network and its application

Artificial neural network can imitate the structure and function of human brain neural network, and carry out repeated processing of information based on mathematical models. Relevant research characterization: Artificial neural networks have outstanding advantages in distributed information storage, large-capacity data processing, and knowledge learning. These characteristics of artificial neural networks have been continuously amplified in structural damage detection applications[3]. Studies by Arangio and Bontempi[4]show that BAYES (Bayesian) neural network is adaptable for structural damage identification of cable-stayed bridges. Dackermann et al [5]. used cepstrum analysis and artificial neural network response measurements to locate structural damage.

For teaching courses, it is inevitable to follow the development of the country and the progress of the times, so neural network technology urgently needs to be integrated into bridge engineering courses. In the course of bridge engineering, bridge tests are added, bridge structure scale models are established, and different degrees of damage conditions are used as the test data environment to collect forecast data, deploy sensors to collect measured data, and conduct artificial neural network training with predicted and measured data. Establish the network relationship between the two, use the trained artificial neural network, use the new forecast data, calculate the actual value, and compare the accuracy of the model.

The integration of neural network knowledge into the bridge can effectively improve students' professional knowledge literacy, cultivate students' professional interest, promote students' learning enthusiasm, ensure the quality of teaching, and make students' innovation ability more improved, and better adapt to the new infrastructure and new era Requirements for students in the context.

2. 2 "BIM Technology" and its application

BIM (Building Information Modeling) technology is a digital tool used in engineering design, construction, and management. Through the visual display, coordination, simulation, and optimization of buildings, and the issuance of professional drawings and deepening drawings, the engineering expression is more detailed.

Li Xiaoyu [6]constructed a green building life cycle risk management model based on BIM and neural network, and provided a comprehensive and accurate basis for the hazard control and governance of various stages of green buildings. Wang Fei, He Ruifeng, McArthur JJ, Yang Peng, etc. used BIM technology in the operation phase of the engineering structure to achieve dynamic monitoring of the status of the engineering structure, which can deal with problems in time or carry out prevention and control in advance, and make accurate and quick responses.

In the reform of bridge engineering courses, we must attach importance to students' software application skills. In the course, the teacher can let the students collect

materials after class, let the students explain, discuss with each other, answer the questions about the software use, and encourage the students to use the BIM modeling software independently in the form of a small team to bridge the gap. Modeling to cultivate students' teamwork ability.

2. 3 "GNSS Technology" and Application

The GNSS system can provide users with the three-dimensional coordinates, speed and time information of the selected location on the surface or near-Earth space all-weather, and has the advantages of high precision, high speed, and real-time.

The implementation of dynamic deformation monitoring of bridges is a necessary means to ensure the normal operation of bridges. The methods of deformation monitoring mainly include traditional measurement methods and global navigation satellite systems. In addition to measuring bridge vibration displacement, GNSS technology can also identify bridge vibration frequency, which is not only suitable for long-span flexible structure bridges, but also for rigid structure bridges.

Bridge health monitoring is not only a new technology of traditional bridge inspection plus structural evaluation, but also a design verification meaning. In the teaching concept of bridge engineering, health monitoring is not only a reflection on specific bridge design, but is also expected to become a "field laboratory" for bridge research.

2. 4 Development of "Health Monitoring and Evaluation Theories and Methods"

The ultimate goal of bridge health monitoring is to achieve rapid prediction and real-time assessment of structural health. For long-span and complex bridges, this goal has not been achieved.

In recent years, many experts have studied this field. Zhou proposed a method. This method firstly identifies the mechanical behavior of the bridge structure such as stress, strain and fracture, and then evaluates the bridge's strength, stiffness, bearing capacity, etc., and finally uses multi-index correlation The evaluation method is used for evaluation. Wang Gaoxin based on the longitudinal dynamic displacement monitoring data of the support of the Dashengguan Yangtze River Bridge, used the cumulative probability characteristics of the dynamic displacement monitoring values to fit the generalized extreme value distribution function, and then used Monte Carlo sampling simulation (MCS) to obtain the design The cumulative travel of the dynamic displacement within the service life.

In bridge engineering, adding the theory of health monitoring and evaluation can guide students in the evaluation skills of small and medium-sized span bridges, exercise their independent judgment and theoretical application ability, and have an important impact on students' next work and study.

3. "AI+BRIDGE HEALTH MONITORING" CURRICULUM REFORM ADVANTAGES

3. 1 Positive impact on student learning

Bridge engineering is boring and cumbersome in learning. It is more difficult for students to raise interest, it is not easy to produce effective interaction in class, and their acceptance of knowledge is low. The integration of AI technology into bridge engineering can effectively improve the efficiency of students' listening to lectures, have a more intuitive professional understanding, help students accept the content of bridge health monitoring, stimulate students' enthusiasm for learning, and better cultivate innovative and digital thinking.

The integration of AI, BIM, and GNSS technologies has higher requirements for students' personal abilities, requiring students to be proficient in using drawing and analysis software, which can improve the efficiency of students' independent learning.

3.2 Fitting professional development status

Bridge engineering is an important professional course. For graduating students who are mainly oriented to the front line of engineering construction, letting students master the basic technology of bridge health monitoring and be familiar with the monitoring process can solve the problem of poor adaptability and inability to keep up with the times in traditional bridge engineering teaching The problem of progress.High and new technology used in bridge engineering teaching has the characteristics of advanced technology and professional counterparts, which can effectively improve the school's competitive advantage.

4. CONCLUSION

Advanced artificial intelligence technologies are introduced into the bridge engineering curriculum to supplement the bridge health monitoring, assessment knowledge theory. And this action can promote the deep intersection and integration of bridge engineering and other disciplines at the same time.

Curriculum reconstruction can improve the education level of colleges and universities, strengthen teachers' professional quality while promoting professional development. The restructured curriculum can strengthen students' knowledge reserves in the teaching process, cultivate students' innovative thinking, exercise students' practical ability, and cultivate new talents with higher professional qualities.

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Application of Artificial Intelligence in Bridge Engineering Construction

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Abstract: Under the background of the "new infrastructure", bridge engineering, as an important part of Chinese infrastructure construction is necessary to complete the intelligent transformation of bridge construction. More importantly, bridge engineering needs to cultivate high-quality talents that are compatible with new technologies. This article reconstructs the construction part of the bridge engineering course from three aspects: bridge construction planning, construction control, and construction technology. The reconstruction is able to meet the demand for professional talents in intelligent construction and is significant to accelerate the transformation and upgrade the bridge construction.

Keywords: Artificial intelligence; Bridge construction; Curriculum reform; New infrastructure; Talent training

1. INTRODUCTION

The advent of the Industry 4.0 era has promoted the rapid development of artificial intelligence technology and enriched the application scenarios of artificial intelligence technology. Artificial Intelligence (AI) has been applied in many disciplines since it was proposed in the 1940s. With the rapid growth of Deep Learning [1] (DL), the application of artificial intelligence technology in various fields has become more in-depth. Under the background of intelligence, bridge engineering, as a traditional industry in China, and bridge construction still has problems of low level of intelligence, long construction period, and lack of new technical talents. The integration of new technologies such as expert systems, big data, neural networks, and welding robots has promoted the intelligent construction of bridge construction. Using artificial intelligence technology for industrial production is the trend of future industry development. However, the current arrangement of bridge construction courses is more inclined to teach the traditional construction methods, and artificial intelligence technology is not reasonably integrated into it, which cannot meet the demand for talents in intelligent construction. The rational integration of artificial intelligence technology into the bridge construction curriculum has become an important measure to train high-quality people for promoting the rapid development of bridge construction.

2. APPLICATION OF ARTIFICIAL INTELLIGENCE IN BRIDGE CONSTRUCTION

2.1 Expert system for construction planning

Construction planning is planning for the progress of bridge construction. At present, most domestic construction enterprises are still in the manual drawing stage for the arrangement of construction, with low level of intelligence, low work efficiency and high error rate. Using an expert system for construction planning can significantly reduce the incidence of errors and improve the overall quality of the project. Sirajuddin (1991) and others developed a knowledge-based expert system on bridge construction [2]. The system plans the project in the early stage of bridge construction and determines the workload of each department. It plays an important role in shortening the construction period and reducing the total investment in construction.

The expert system is edited by multiple experts and has the advantages of high efficiency and authority. Through learning, students will understand the relevant principles of the expert system, and use the expert system to plan bridge construction. Through the learning of the expert system. Students are required to understand knowledge representation methods, search and reasoning technology related content, and master the common "expert system interpretation mechanism" [3].

2.2 Construction control

Construction control is one of the important means to control the quality of bridge construction. Traditional construction control often uses manual and simple equipment to collect and analyze construction data, which has low processing efficiency and poor information timeliness. In recent years, a variety of artificial intelligence technologies have begun to be widely used in bridge construction monitoring, which is an important means of current construction monitoring technology innovation. The essence of construction control is error control. The integration of artificial intelligence technology into construction control can effectively avoid errors and enhance the safety of construction.

2.2.1 Application of big data in construction control

Using big data to count the errors that may occur in each stage of the construction of the completed project, it is possible to grasp the information changes and collision detection of the various components of the bridge in the production, transportation, storage, hoisting construction and later operation and maintenance processes in real time. At the same time, it can perceive the information matching and real-time situation of various components, so as to predict the occurrence of accidents in advance, thereby improving the safety of the construction process [4].

Under the background of intelligent construction, based on new database technology and high-quality talent training needs, the main content of using big data for bridge construction control learning includes data content storage, big data practical case application, and construction of database courses. Optimize the teaching content of existing bridge construction courses through database courses, effectively combine classic and new technologies, and organically integrate theoretical knowledge [5].

2.2.2 Neural network control elevation

The neural network system has certain predictive capabilities. When the neural network system is used to output the predicted value, there are random errors between the predicted value and the actual value. Even if some data obviously does not conform to the general laws, the neural network must have the ability to recognize such samples. The neural network can analyze the data that does not match the design value and predict the occurrence of errors. In the process of bridge construction, due to the influence of the bridge's own weight, construction technology, load, etc., there will be a certain error between the actual elevation of the bridge and the design elevation. During bridge construction, neural network is used to predict the elevation of the bridge and obtain the predicted value of the elevation.

Neural networks require students to be proficient in the basic use of classic algorithm software. In the actual teaching process, MATLAB language is used to strengthen students' understanding of neural network system. MATLAB language contains a neural network toolbox and a large number of internal functions, and provides a wealth of demonstration examples, using it can quickly achieve modeling and solving practical problems.

2.3 Construction technology

As a traditional industry in our country, bridge engineering has certain problems in construction technology. During bridge construction, a large number of people are required for production, and the construction period is long and manpower and material resources are wasted seriously. Integrating artificial intelligence technology into bridge construction can improve the construction process, reduce the workload of workers, and shorten the construction period.

2.3.1 Intelligent robot used for steel structure welding

The structure of large-span steel structure bridges is complex, with special structures and large-span structures appearing, the construction is difficult, and the welding process requirements for steel structures are high. The current domestic steel structure welding is still mainly manual welding, and the construction efficiency is low. The use of robots for intelligent welding can improve the quality of welds and shorten the welding time, which has a wide range of engineering applications.

Box beam inner partition welding system: This system consists of two arc welding robots (sky crane), two welding power sources, one one-axis head and tailstock positioner, two sky crane three-axis moving devices, and one set of offline Programming system and a set of intelligent programming software are composed. There are many partitions in the box girder. When workers weld in the girder, the welding parameters are unstable and the welding deformation is not easy to control.

The use of welding robots to weld steel structures requires students to have a certain understanding of the basic principles of robot welding. In the existing steel structure design principles, technologies such as contact sensing, arc tracking, and database thick plate welding are added. While understanding the technology, students will use intelligent programming software to drive robots to

complete steel structure welding.

2.3.2 Artificial intelligence technology used in bridge assembly construction

The use of robots and mechanical learning technology to realize fabricated bridge prefabricated components, the standardized generation of robots produces prefabricated components produced by artificial intelligence machines, and the intelligent mechanized production of prefabricated component products. Actively develop assembly-type construction robots (robotic arms) based on deep learning and intelligent pipeline facilities.

The goal of the assembly construction robot course is to enable students to master the theoretical knowledge of application technology of construction robots, understand the basic structure of robots, master the basic operations of assembly robots, and be able to program and debug industrial robot control systems. This course is mainly conducted in the laboratory, purchasing a multifunctional training platform (hereinafter referred to as "workstation") with ABB IRB120 industrial robot as the core. Based on the workstation, the theoretical knowledge related to industrial robot technology (such as electrical machinery, sensor technology, pneumatic technology, PLC technology and C language, etc.) is integrated into the practical teaching of "industrial robot application technology" .

3. CONCLUSION

This article elaborates the reconstruction of artificial intelligence technology with traditional bridge engineering courses to form a knowledge system with construction planning, construction control, and construction control as the core, making intelligent teaching concrete and feasible. By studying this course, students can master the theoretical foundation and specific application methods of artificial intelligence technology in bridge construction. It has a profound impact on cultivating high-quality talents that are in line with the development of the industry and promoting the strategic development goals of "new infrastructure".

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Research on The Optimization of Talent Training Mode of Music Education Major in Higher Vocational Colleges Under the Background Of "Double High" Construction

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Abstract: Starting from the source of students in higher vocational colleges, the author analyzes the characteristics of students in music education, and further studies the ways to optimize the cultivation of talents in vocational education, including the formulation of training objectives, reasonable adjustment of training direction and comprehensive promotion of practical activities. It is concluded that the internal relationship between curriculum and practice should be emphasized in the cultivation of professional talents.
Key words: Higher vocational colleges; Music education; Personnel training

1. INTRODUCTION

"Double high" construction is to cultivate technical and skilled talents, to improve the level of vocational education, to meet the national overall development strategy, to quickly integrate into the local development ranks, and to promote industrial upgrading. The development plan was prepared in 2004. By the end of 2019, nearly 200 schools will join the program.

2. THE SOURCE OF STUDENTS MAJORING IN MUSIC EDUCATION

This major belongs to the category of normal education, and ultimately to cultivate music teachers and social music personnel. During the gradual advancement of education, the enrollment of higher vocational colleges is also expanding, changing the original enrollment structure. In the enrollment of this education major, additional examinations of professional skills are organized before the normal college entrance examination, and the admission score is relatively low. This kind of professional learning is related to the age at which they begin to learn. If they can start to learn a certain musical skill at a relatively young age, especially in instrumental music. According to the normal growth law of the human body, after adulthood, there will be no great changes in the body skeleton, at this time to start training, is bound to face many obstacles. Some higher vocational college students are not engaged in art career at the beginning, so they may be lacking in art foundation and have not been systematically studied. Generally speaking, the basis of students in higher vocational colleges is relatively weak, and some colleges are lack of relevant departments, so the enrollment work is easy to be limited. In addition, the change of social demand makes the training direction of this professional education gradually adjust [1].

3. BASED ON THE "DOUBLE HIGH" CONSTRUCTION OF HIGHER VOCATIONAL COLLEGES TO CULTIVATE MUSIC EDUCATION PROFESSIONALS OPTIMIZATION WAY

3.1 Setting training objectives

Nowadays, the setting of training objectives in higher vocational colleges is too single, which is not conducive to students' deeper understanding of the course content, restricts the efficiency of improving their music skills, and may also hinder some students from upgrading from junior college to undergraduate. Higher vocational colleges should highlight the characteristics of the times in terms of curriculum planning and practical education content, give consideration to professional skills and professional quality, and carry out in-depth mining from the knowledge itself. Based on this, we should organize practical training, integrate advanced teaching devices into the classroom, and pay attention to the adjustment of teaching mode. However, the implementation effect of the above education measures in some higher vocational colleges is not good, which leads to the implementation of the talent training plan, unable to educate graduates with cultural literacy and music skills, and then do not have the strength comparable with undergraduate students. According to the corresponding employment trend of the major, vocational colleges should take the practical requirements of economic society as the starting point, pay attention to the training purpose of vocational education, and optimize the curriculum objectives and design ideas when carrying out teaching activities for music education students. Combined with the geographical area of the campus, the actual economic situation should be positioned to adapt to the needs of the market environment for talents, and then the reasonable development of training objectives. At the same time, colleges and universities should also pay attention to the students from junior college to undergraduate, expand the coverage of the curriculum, and truly show the educational characteristics of the colleges and universities.

3.2 Flexible direction adjustment

Higher vocational colleges pay attention to the employment situation of students after they enter the society. Therefore, the school should break through the limitations of the previous teaching mode, combine with the requirements of talents, take the initiative to carry out market research, in order to understand the market situation more clearly, and adjust the training direction

based on this. At present, in the teaching and training of colleges and universities, the setting of the overall education pattern is too fixed. Generally, the courses of professional theory and basic content are carried out in the first two years, and the practice activities of related professions are carried out in the third year, which belongs to the internship stage. In the fourth year or the second two years of College upgrading, the content of education will be greatly reduced, leaving students to practice. However, according to the curriculum arrangement, the main direction of professional training should carry out external expansion and extension, and create a variety of education characteristic classroom. Under the background of this kind of education, higher vocational students can effectively enhance their professional skills, even reach a high level, and carry out the basic theory and practical training together, so that students can always receive the consolidation training. In short, higher vocational colleges need to adjust the direction of training according to the actual situation of the school and the social talent requirements and standards, and strive to create compound talents with a number of professional skills, and set up music courses with emphasis for college students. In addition, higher vocational colleges also need to pay attention to different types of music materials. Through collective activities, teachers and students can be guided to analyze and understand diversified music forms, so as to expand students' understanding of regional art. Therefore, teachers and students can visit music artists in their spare time, get close contact with music, and experience the charm of music. After a long period of exploration, it is found that some music forms that were not included in vocational education textbooks are formally included in the school's own education system, and are chosen by students themselves. In addition, higher vocational colleges should also pay more attention to music education, support students to carry out status analysis together, master the situation of the same type of colleges in the region and nearby areas in the cultivation of talents and the characteristics of social requirements for talents. By sorting out and analyzing the survey data, improving the education curriculum plan, highlighting the flexibility and diversity of art education, and helping students to pass the examination of upgrading from junior college to undergraduate so as to obtain employment in the future.

3.3 Promoting practical activities

For vocational education, practice teaching is helpful to enhance students' professional ability and music education level, and also establishes a communication bridge between normal education and basic education. However, the reality is contrary to it. The students who are upgraded from junior college to undergraduate need to study all professional courses in two years. The arrangement of time is relatively close, which is not conducive to the higher vocational students' in-depth understanding of the essence of music education. In addition, the practical training courses carried out every semester on campus are lack of depth and can not really achieve the ideal state. Internship period generally lasts for one to two years, although there is more freedom in the time span, but due to the lack of professional internship guidance for students, after carrying out practical activities, the educational effect is generally low. At this time, the management of students in Colleges and universities tends to be lax, and internship is regarded as a routine course. In this regard, higher vocational colleges can adjust this social practice mode appropriately and complete the training link in different semesters. For example, in the second or third year, we can appropriately increase the courses of probation and internship, and invite grass-roots teachers and students to participate in the observation class, so that students can identify their own shortcomings in educational skills, and find and improve them in time. In addition, music belongs to the art category. While cultivating students' practical ability, colleges and universities devote part of their training energy to stage performance, organize students to arrange programs, or come to local communities to organize voluntary service activities, so as to cultivate their service concept [2].

4. CONCLUSION

Based on the education situation of "double high" construction, the fluctuation of professional training level in higher vocational colleges is bound to cause the fluctuation of basic education, which has a great contribution to the development of music and art in China. Colleges and universities should continue to strengthen students' employment competitiveness, explore the law of development, and give play to the characteristics of music education, so as to create "double high" talents.

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Research on The Brand Building of Party Building of Grass Roots Party Organizations in Colleges and Universities in The New Era

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Abstract: In the new era, the grass-roots party organizations in Colleges and universities can strengthen the quality of Party Construction by creating the brand of Party construction, and the characteristic brand of Party construction can enhance the political function and organizational power of grass-roots party organizations, so as to provide guarantee for improving the education and teaching work and personnel training level of colleges and universities. The brand building of Party building should follow the basic principles of centering on the central work, highlighting work innovation and having obvious characteristics, and promoting the party building with obvious effectiveness. The strategies of Party building brand building mainly include: correct positioning, highlighting characteristics; paying attention to hardware, laying a solid foundation; developing software, improving quality; strengthening security, long-term development.
Key words: New era; Colleges and universities; Party building brand; Creation

1. INTRODUCTION

In the new era, the construction of the party requires continuous improvement of the quality of Party construction. The party's grass-roots organizations should focus on improving the organizational strength and promote the innovation of activities. Colleges and universities are the front of educating people for the party and talents for the country, and the grass-roots party organizations are the important positions for colleges and universities to implement the party's overall leadership and promote the comprehensive and strict governance of the party to the grass-roots level. The grass-roots party organizations in Colleges and universities constantly innovate the grass-roots party construction work, create the brand of Party construction, and let the brand play an exemplary role, which is an effective way to improve the quality of Party Construction in Colleges and universities. At the same time, the brand of grass-roots party construction with characteristics is also an effective way It can effectively drive the vitality of Party members of teachers and students, enhance the political function and organizational power of grass-roots party organizations, and provide guarantee for promoting the education and teaching work in Colleges and universities and improving the quality of personnel training.

2. THE BASIC PRINCIPLES OF PARTY BUILDING BRAND BUILDING

2.1 Focus on the central work of grassroots organizations

The brand building of grass-roots party construction in Colleges and universities should focus on the central work of colleges and universities, education, teaching and personnel training, etc., to find a combination point, give full play to the initiative of Party organizations in secondary colleges and departments, give full play to the enthusiasm of teachers, students and Party members, enhance the organizational and fighting power of Party organizations, and promote the smooth development and quality improvement of central work. Through the combination of Party building and central work, we should apply the concept, method and mechanism of Party building brand to practical work, give play to the leading role of Party building, and constantly enhance the fighting fortress role of grass-roots party organizations.

2.2 Highlight work innovation and have obvious characteristics

Colleges and universities are the position of educating people for the party, educating talents for the country, and the important base of the party's construction. It is an important task for the grass-roots party organizations in Colleges and universities to carry out the party's construction with high standards, comprehensively strengthen the work in the ideological field, and deeply carry out the ideological and political education. According to the needs of the new era, the grass-roots party organizations determine one or more key construction directions, actively explore the working rules of the grass-roots party construction in Colleges and universities, constantly adhere to the principle of innovation, highlight the leading and innovation, innovate the working methods, give play to the brand effect, discover and solve new problems in the innovation, and constantly improve the quality of the grass-roots party The governance ability of the organization can promote the development of grass-roots party construction in Colleges and universities.

2.3 It has obvious effect on promoting party construction

In order to create the brand of grass-roots party organizations in Colleges and universities, we must first abide by the party construction work system in Colleges and universities, seek truth and pragmatism in the party construction work, and explore the innovation of Party construction work on the basis of completing the prescribed actions with quality and quantity, so as to better improve the quality of work. All brand building exploration should be conducive to the construction quality of the party organization as the highest criterion, and strive to improve the organizational and leading power of the grass-roots party organization. In the process

of creating the brand of Party building, we should seriously explore the law of Party building work in Colleges and universities in the new era, improve and expand the work carrier, innovate the working mechanism, improve the work effectiveness, and create a characteristic brand of Party building work at the grass-roots level in Colleges and Universities by forming some replicable and promotable work experience.

3. THE STRATEGY OF PARTY BUILDING BRAND BUILDING

3.1 Correct positioning and outstanding characteristics

In the process of creating the brand of Party building, the grass-roots party organizations in Colleges and universities should do a good job in the overall structure of the brand, combine the creation with the work of schools, departments and other departments, and combine the brand creation with serving the society, teachers and students, and personnel training. Each secondary Department has its own professional characteristics. To find the correct positioning, we can find the entry point from the perspective of thought leading brand, scientific research and innovation brand, culture and art brand, voluntary service brand, joint construction and linkage brand [1], highlight the characteristics of the party building brand, gradually cultivate and summarize, refine the brand connotation, and form a unique Party building product Card.

3.2 Attach importance to hardware and lay a solid foundation

Scientific and reasonable organizational structure is the basis of Party building brand building. In the process of designing organizational structure, we should pay attention to details and do a good job in analysis. Before building a brand of Party building, we should first pay attention to the construction of hardware. First, we should promote the institutionalization and standardization of the organizational life of grass-roots party organizations. This is the premise of building a brand. Only in a grass-roots organization with standardized and rigorous organizational life can we create a good brand of Party building. Second, we should implement the responsibility of managing the party and running the party, and do a solid job in the education, management and supervision of the grassroots cadres, which is an important guarantee for the brand building of grassroots party building. The third is to create a good brand environment and culture. The grass roots Party organizations in Colleges and universities should build a good party member activity room, hang the party flag and Party emblem according to the requirements, create a good publicity atmosphere, and build a good party affairs open column; carry out party day activities, speech and essay solicitation, exchange and discussion activities related to brand building, so as to create a good brand environment and cultural atmosphere, and deepen the party building brand building activities People's heart, active participation.

3.3 Develop software and improve quality

After consolidating the hardware, it is the key to deepen the brand effect of Party building to equip the software that covers the creation of service concept and connotation. First, we should comprehensively analyze and judge the actual situation of the party organization, establish a strong sense of problems, truly and effectively find the advantages and disadvantages, adhere to the problem orientation, and find out in which aspects to carry out brand building. Second, we should face up to the problems, improve these deficiencies as the premise, enhance the political function and organizational strength of the party organization, strengthen the sense of serving teachers and students wholeheartedly, and make the brand work implemented. The third is to seek truth from facts, conduct investigation and research, integrate and summarize the opinions and suggestions of teachers and students, find out the "hot spots", "pain points" and "difficult points" concerned by teachers and students, and summarize and refine the "bright spots" from them. On the basis of these software, improve the quality of Party building brand.

3.4 Strengthen guarantee and long-term development

The brand project of Party building at the grass-roots level in Colleges and universities is an innovative move to strengthen and improve the party building at the grass-roots level in Colleges and universities, and also an important measure to promote the party building in Colleges and universities. The Party committee of colleges and universities should strengthen the guarantee of the party building brand work. First, it needs to carry out systematic planning and Research on the party building brand project from the perspective of institutional system and organizational guarantee, implement and follow up, support and guarantee these brands according to the overall planning, improvement and promotion, and establish a long-term mechanism, so as to give full play to their brand effect. Second, it is necessary to guarantee the funds and materials, scientifically set up the budget for Party construction, provide activity funds for grass-roots party organizations, and ensure the development of Party construction; implement the activity sites of grass-roots party organizations, and equip them with necessary facilities and equipment. Grassroots party organizations in Colleges and universities should regularly sum up experience, listen to the opinions of teachers and students, make them satisfied and boost brand development; refine and analyze the working rules, maintain the system construction of Party building brand, focus on the promotion and maintenance of Party building brand, and ensure the long-term development of Party building brand [2].

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Research on The Development of Middle School Cheerleading Club in Xiangtan City

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Abstract: This paper takes the development status of Xiangtan middle school cheerleading club as the research object, takes the teachers and students of the cheerleading club as the survey object, and comprehensively uses the methods of literature, questionnaire, data statistics and expert interview to understand the development status of the cheerleading club in Xiangtan middle school as follows: the school cheerleading venues and facilities are basically full The results show that it can meet the needs of students; the type of curriculum projects and the form of development are single; the gender ratio of students is unbalanced and the level is single, and most of them are junior high school students; the teachers are from professional colleges, but some of them are part-time teachers; the school club management system is not perfect. It is suggested that every school cheerleading club should strengthen the construction of teachers, improve the teaching level; strengthen the propaganda of cheerleading, balance the sex ratio of students; standardize the club management mode; improve the construction of venues and facilities; increase the project setting of cheerleading club, enrich the form of development; exert the important value of improving students' comprehensive quality and promoting the all-round development of students' body and mind.
Key words: Xiangtan City; Middle school; Cheerleading club; Development Research

1. INTRODUCTION

Cheerleading operation, as a form of physical education, has been widely promoted in Chinese middle school campuses, and has developed into one of the favorite sports for the majority of students. The development of Cheerleading needs fixed carriers, such as training time, training places, professional teachers or coaches, the establishment of cheerleading teams, and participation in competitions. At present, the development forms of domestic cheerleading mainly exist in the form of Cheerleading Association, Cheerleading Association, cheerleading club and so on. For the convenience of research, this paper collectively refers to all kinds of development forms as cheerleading club.

2. XIANGTAN CITY MIDDLE SCHOOL CHEERLEADING CLUB DEVELOPMENT STATUS ANALYSIS

2.1 Current situation of cheerleading club facilities

Generally speaking, cheerleading is suitable for indoor gymnasium training and class, because cheerleading contains more technical movements, such as running, jumping, somersault, flexible movements, etc., so it needs to have a safe and good quality training site for protection; cheerleading infrastructure includes professional carpet, sound, mirror, sponge pad, flexible brick, flower ball and other basic equipment, and also needs to be protected There are cheerleading special training equipment, such as cheerleading somersault AIDS, cheerleading flexibility AIDS, etc. However, through the investigation of three middle schools in Xiangtan City, we know that these three cheerleading clubs have basic training venues and facilities, but there is no professional facilities for cheerleading training protection.

2.2 The current situation of cheerleading club teaching staff construction

According to the interview, in the gender and age composition of Cheerleading teachers, the number of female teachers is more than that of male teachers, and the age of teachers is generally younger. Most of the teachers engaged in cheerleading projects are young teachers, and most of them have not received professional training. 2.3 current situation of cheerleading club teaching

2.3.1 Curriculum. According to the feedback from the questionnaire, the courses offered by middle school cheerleading clubs are mainly flower balls in dance cheerleading; most of the cheerleading courses are about 2-4 classes a week.

2.3.2 Teaching content. According to the survey, 90% of the teachers teach according to the self-made teaching content, 80% of the teachers carry out the training of body posture and quality, 70% of the teachers carry out the training of basic hand position of cheerleading, 50% of the teachers teach the creation of formation and music, 40% of the teachers teach the routine of cheerleading, and only 20% of the teachers teach the theoretical knowledge of cheerleading.

2.3.3 Teaching evaluation. Through the collation and analysis of the questionnaire, the number of students who are satisfied with the teaching content and method of the cheerleading teacher is the most, accounting for 42.2% of the total number of the survey; the number of students who are dissatisfied with the teaching content and method of the cheerleading teacher is the least, accounting for 3.8% of the total number of the survey.

2.4 Current situation of cheerleading club students

2.4.1 Grade and gender of students. Through the questionnaire survey of three middle school cheerleading clubs in Xiangtan City, we can see that the students who participate in cheerleading clubs are mainly in the first grade of junior high school, and most of them are girls.

2.4.2 The effect of students learning cheerleading. In this survey, more than 15% of people choose to learn cheerleading to improve and change their body shape, temperament, self-confidence and mental state.

2.5 Cheerleading club project setting and development form

According to the data from the questionnaire, among the dance cheerleading courses offered by the three middle school cheerleading clubs, the flower ball cheerleading course accounts for the largest proportion (100%), while the Jazz cheerleading course and hip-hop cheerleading course are not offered. The reason why the club set up the flower ball cheerleading course is that compared with other projects, the threshold of flower ball cheerleading is low, the difficulty coefficient is small, and the dance presented is good-looking, passionate and loved by teenagers. Due to the interference of various factors, such as hardware protection measures are not complete, can not set up skills cheerleading course.

According to the survey, there are different forms of Cheerleading clubs in middle schools in Xiangtan City, including school cheerleading teams, cheerleading clubs, cheerleading competitions organized by schools, big break cheerleading activities, school-based courses, etc., among which school cheerleading teams and cheerleading clubs are the main ones.

2.6 Management status of cheerleading club

The investigation school set up a special management organization, equipped with staff, and effectively undertook the management of the school cheerleading club. It is divided into three levels of management system, the first level is the person in charge of the overall management of the school, most of the schools are vice presidents of sports; the second level is the director of the cheerleading club; the third level is the management teachers of all parts of the club. However, due to the short establishment time of the club, the development of all aspects is not mature enough, and the management is in the primary stage. And the management state is loose and not systematic enough.

3. ANALYSIS OF THE FACTORS RESTRICTING THE DEVELOPMENT OF CHEERLEADING CLUB IN XIANGTAN MIDDLE SCHOOL

3.1 Shortage of Teachers

Through the interviews with the teachers of three middle school cheerleading clubs, it is concluded that the number of teachers is small, the professional cheerleading teachers in Xiangtan middle school campus are insufficient, the level of teachers in each cheerleading club is uneven, and there are few fixed full-time cheerleading teachers, most of them are part-time teachers, which leads to the flow of Cheerleading teachers resources, although most of the part-time teachers are professional colleges Born, but some students are still in school, so teaching experience is insufficient, for professional cheerleading teaching knowledge is not solid enough.

3.2 Students' cognitive bias

The proportion of male and female is not balanced and the cognitive level is not high enough. Due to the physiological conditions, such as female students' advantages in flexibility, posture and expressiveness, most boys think that cheerleading is a special project for female students, which is not suitable for male students. This kind of psychology leads to the cognitive bias of most

boys, and the teachers of Cheerleading fail to guide them actively and correctly in time, which leads to the imbalance of the proportion of men and women. In this paper, Xiangtan City middle school cheerleading club of the proportion of men and women were investigated, through the statistical analysis of the questionnaire, 185 valid questionnaires in the recovery, girls accounted for 89%, boys only 11%, the proportion of men and women is seriously unbalanced. The school for cheerleading project propaganda is not enough, students do not understand cheerleading.

3.3 The management level of the club is low

Because the club has been established for a short time, the development of all aspects is not mature enough, and it is in the primary stage, so is the management. It is in the primary management stage, and it is not perfect in all aspects of management, and the management state is a little fuzzy and loose, and the management system is not clear and formal.

3.4 The construction of site facilities lags behind

At present, although Xiangtan middle school cheerleading club has the basic facilities, but the lack of professional training venues and professional supporting facilities, because of the lack of professional facilities for cheerleading training and protection, the safety of students' difficulty training and skill training can not be fully guaranteed. Due to the high requirements of technical cheerleading for protective measures, the lack of school facilities, students are prone to injury in class and training, which can not guarantee the personal safety of students. Therefore, it violates the original intention of Cheerleading project promotion on campus, limits the development of technical cheerleading course, and is not conducive to improving the professional level of Xiangtan middle school club cheerleading, and limits the cheerleading club The development of music department in Xiangtan middle school.

3.5 Single project setting and development form

Due to the limitation of venue facilities and teachers' professional ability, the cheerleading club projects mainly focus on the flower ball Cheerleading in dance cheerleading, while the other projects are relatively few, and the project setting is relatively single.

4. PROMOTE THE DEVELOPMENT STRATEGY OF XIANGTAN MIDDLE SCHOOL CHEERLEADING CLUB

4.1 Strengthen the construction of teachers and improve the teaching level of cheerleading

It is also very necessary to improve the professional level of Cheerleading teachers, so that teachers can provide authoritative and professional training for students, and provide students with high-quality teaching. Therefore, it is necessary to constantly improve teachers' professional ability, absorb their own and side error experience, summarize and reflect, so as to improve the teaching level of Cheerleading teachers.

4.2 Strengthen the publicity of cheerleading and balance the sex ratio of students participating in cheerleading

We should publicize and promote cheerleading through various channels, regularly carry out cheerleading training,

popularize basic knowledge of Cheerleading to students, let students know and understand cheerleading, and change students' psychology of "cheerleading is suitable for girls". In schools, there are many ways and forms to promote cheerleading to students, popularize the basic knowledge of cheerleading, and attract more boys to participate.

4.3 Standardize the management mode of cheerleading club

In order to ensure the efficient management of the cheerleading club, we should establish standardized and complete rules and regulations, manage the middle school cheerleading club in strict accordance with the relevant national requirements, and improve the management system of the cheerleading club. In order to promote the healthy development of Xiangtan middle school cheerleading club, we should take the initiative to establish and improve a complete supervision system, consciously abide by the internal members, coordinate and complement each other, and carry out two-way supervision.

4.4 Improve the construction of school cheerleading venues and facilities to ensure the quality of Cheerleading teaching

In order to carry out the cheerleading project, first of all, the school should ensure the perfect training site and professional equipment, which not only ensures the teaching quality of cheerleading, but also ensures the safety of students in the difficulty training and skill training. Therefore, gradually improve the cheerleading venues and facilities, ensure the quality of Cheerleading teaching, ensure the safety of students' training and class, so as to promote the all-round development of Cheerleading in Xiangtan middle school.

4.5 Add cheerleading club project settings, enrich the form of cheerleading

According to the students' liking for cheerleading, we should expand the cheerleading projects and enrich the development forms of cheerleading, such as school cheerleading team, cheerleading club, school-organized cheerleading competition, big break cheerleading activities, school-based curriculum, etc. In the form of school-based curriculum.

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Speed Change Characteristics of The Top Six Male and Female Athletes In 2018 National Race-Walking Trials (Huangshan Zhan)

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Abstract: Race walking is the traditional advantage of China's track and field events, this year, China's race-walking athletes in the major events have achieved good results, is our country in the track and field competition for gold and silver in the key projects. Based on the speed change characteristics of the top six male and female athletes in Huangshan Zhan National Race-Walking Competition, this paper finds out the speed change rules of Chinese race walkers, and finds out the influence of the speed change characteristics of athletes in the competition on the final results. Taking the speed change characteristics of the top six male and female athletes in the 2018 Huangshan Zhan National Race-Walking Competition as the research object, the paper mainly uses the method of literature, expert interview, mathematical statistics and comparative analysis to provide a reliable theoretical basis for this paper. The research results are as follows: the top six Chinese male athletes start slowly, and the speed of the whole race is gradually accelerated. The highest speed of the top six athletes appeared in the last stage. From the whole point of view, the top six men's race walkers in this competition in China are all the speed distribution mode of the first slow and the second fast. It is suggested that the starting speed of race walkers in China should be improved relatively. Improve speed control during the race. Participate in the World Series regularly and increase the analysis of World Series opponents. Qieyang Shijie, the top six female athletes in China, was faster in the starting stage and took a big lead in the whole process. In this competition, the top three female race walkers in China are the first slow and the second fast in the whole race, while the last three athletes are the first fast and the second slow in the race. It is suggested that Chinese athletes should recognize the situation, strengthen the analysis and research of competitors in the competition and improve the prediction and research of the competition situation. Learn to practice in competition. In order to improve their own strength.

Key words: Race Walking; Velocity Change; Advantage

1. INTRODUCTION

Race walking is the traditional advantage of China's track and field events, this year, China's race-walking athletes in the major events have achieved good results, is our country in the track and field competition for gold and silver projects. With the change of race-walking rules in 1996, China's race-walking athletes did not achieve ideal results in the world championships. The athletes did not adapt to the new race-walking rules, and were repeatedly punished by the judges, which eventually led to poor performance in the competition [1-2]. After 2008, China's race-walking performance gradually recovered and made a prominent figure in the world competitions. In the 2009 World Championships in Berlin, China's outstanding female race-walking athlete Liu Hong won the bronze medal in the women's 20km race walking competition. Since then, China's race walkers in the world competition gradually began to achieve better results. In recent years, with the retirement of the old athletes in succession, a number of outstanding young athletes have emerged in China. The training of excellent athletes cannot be separated from laying a solid foundation in the youth stage of athletes.[3] Based on the speed change characteristics of the top six male and female athletes in Huangshan Zhan National Race-Walking Competition, this paper finds out the speed change rules of Chinese race walkers, and finds out the influence of the speed change characteristics of athletes in the competition on the final results.

2. RESEARCH OBJECTS AND METHODS

2.1 Subjects

In this paper, the speed variation characteristics of the top six male and female athletes in the 2018 Huangshan Zhan National Race-Walking Competition were studied.

2.2 Research Methods

2.2.1 Literature method

24 articles were retrieved by CNKI with keywords of "race walking" and "speed change", 8 articles were carefully reviewed, and a large number of materials related to this study were obtained by searching the website of Chinese Athletic Association.

2.2.2 Mathematical Statistics

Excel 2010 was used to conduct statistical processing on the obtained data, and combined with relevant professional theories for logical analysis.

2.2.3 Expert interview:

During my stay in the team, I mainly interviewed the coaches of the national race-walking team according to the research requirements of this paper, which obtained very reliable practical and theoretical basis.

2.2.4. Comparative analysis:

According to the relevant speed ratio data indexes sorted out in this paper, comparative analysis is conducted to obtain the relevant theoretical basis needed in this paper.

3. RESEARCH RESULTS

3.1 Analysis of the changes of adult male scores in each subsection

Walking race is a long-distance endurance event, which

has great demands on athletes' physical fitness. In the whole race, athletes should reasonably allocate speed to give full play to their physical fitness [4]. It can be seen from Table 1 that the top six Chinese men race walkers in this competition are in the starting stage. Both entered the race at a low speed and reached the maximum speed in the last two or three laps, among which Cai Zelin's speed fluctuated greatly in the seventh lap. From a personal point of view, Wang Kaihua had a relatively good speed control ability in the whole race. From the start stage to the final sprint stage, the change of speed was in the acceleration stage. After the fifth lap, Wang Kaihua's speed improved significantly, which showed that Wang Kaihua had good speed ability and reached the highest speed of 7:41 in the

whole race in the ninth lap. Cai Zelin's speed fluctuated greatly in the fifth lap, dropping from 7:54 to 8:04, then gradually accelerated to 7:51 and reached the maximum speed in the last lap. The third athlete in the first half of the speed change is relatively small, in the state of gradual acceleration, in the second half of the stage, the speed change is more obvious. In the ninth lap there was a big slowdown in the segment from 7:49 to 7:54. Zhang Jiaxu and Yin Jun had similar performance in the segments. During the race, Zhang and Yin followed each other and reached the highest speed in the whole race in the final stage. Xu Hao's speed fluctuated a little in the first half of the race, and accelerated in the second half of the race, and the speed change table was relatively stable.

Table 1: Results of men's sections in the adult group of Huangshan Zhan National Race-Walking Competition

name	1	2	3	4	5	6	7	8	9	10
Wang Kaihua	8:17	8:00	8:03	7:59	8:00	7:53	7:43	7:43	7:41	7:42
Cai Zelin	8:17	8:00	8:04	7:58	8:00	7:54	8:04	7:51	7:50	7:38
Lu Xiaotong	8:18	8:06	8:12	8:02	8:05	7:58	7:53	7:49	7:54	7:35
Zhang Jiaxu	8:23	8:13	8:09	8:03	8:01	7:55	7:50	7:49	7:46	7:46
Yin Jun	8:23	8:13	8:09	8:04	8:00	7:55	7:50	7:49	7:49	7:44
Xu Hao	8:18	8:06	8:12	8:04	8:03	7:59	7:52	7:48	7:47	7:48

3.2 Analysis on the change of adult male scores before and after half course

Table 2 Half time (min) before and after long-distance mobilization of the top six.

Table 2: Men's first and last half of Huangshan Zhan National Race-Walking Competition

name	first half	second half	difference between
Wang Kaihua	40:19	38:42	1:18
Cai Zelin	40:19	39:17	1:02
Lu Xiaotong	40:43	39:09	1:34
Zhang Jiaxu	40:39	39:06	1:33
Yin Jun	40:39	39:07	1:32
Xu Hao	40:43	39:14	1:29

Can be seen from table 2, the first half of the available are in more than 40 minutes, this is due to start slower and slower overall, the relatively conservative in six foot race before this game player Wang Kaihua and Cai Zelin in the first half when at least first, Zhang Jiaxu and Xu Hao in the first half when times, Lu Xiaotong and Xu Hao teeching in the first half. Judging from the results of the second half of the race, Chinese race walkers as a whole are faster than the first half. Among them, Wang Kaihua had the least time of 38:42 in the second half, while the second runner Cai Zelin had the most time of 39:17 in the second half. To see Cai Zelin in the second half of physical decline is bigger, show that the velocity distribution is not reasonable, and in the final stage of accelerating ability is bad, can be seen from the difference in half before and after Cai Zelin, Cai Zelin when braking in the first half and

second half is far smaller, as the slower pace in the first half, second half speed does not add up. This is also one of the reasons why Cai Zelin's performance is not so good. The speed distribution of the world's elite race walkers in the competition is the speed distribution mode of the first slow and the second fast, from the whole point of view, the top six race walkers in China are the speed distribution mode of the first slow and the second fast. In this competition, there was a certain gap between Chinese race walkers and their personal best results, among which Wang Kaihua's personal best was 1:17:54. It shows that Wang Kaihua has a certain strength, and the overall performance of the athletes in this competition is not very ideal.

3.3 Analysis of the change of scores in each subsection of the female adult group

Table 3: Segment results of the top six men's 20km runners in Huangshan Race Walking Grand Prix

name	1	2	3	4	5	6	7	8	9	10
Qieyang Shijie	8:42	8:37	8:34	8:36	8:40	8:34	8:29	8:30	8:32	8:23
Yang liujing	8:54	8:58	8:46	7:46	8:44	8:34	8:43	8:35	8:45	8:30
Wu Quanming	8:54	8:58	8:46	8:46	8:44	8:34	8:43	8:39	8:48	8:32
Duan Dandan	8:54	8:58	8:46	8:46	8:44	8:37	8:47	8:55	9:04	9:04
Ma Li	8:54	8:58	8:46	8:46	8:44	8:42	8:54	9:04	9:09	8:58
Su Wenxiu	9:13	9:11	9:06	8:55	9:05	9:05	9:08	9:11	9:17	9:11

It can be seen from Table 3 that the top six female race

walkers in China except Su Wenxiu, the sixth athlete, all

achieved less than 9 minutes in the first lap of the starting stage, and then gradually accelerated. Champion Qieyang Shijie was the fastest of the top six runners on each lap throughout the race. Qieyang Shijie had a relatively fast start and was in the acceleration stage. In the fifth lap, the speed dropped a little, but she was still in the first place. Ma Li and Duan Dandan accelerated in the first half of the race, but after the fifth lap, the speed gradually decreased, and after the fifth lap, the speed slowed down a lot. In the ninth lap, the lowest speed was 9:04 and 9:09 respectively, while the highest speed was 8:37 and 8:42 respectively in the sixth lap, showing that the speed distribution was not very ideal in the whole race. There was a little acceleration on the last lap but it wasn't very noticeable. This is also one of the reasons why they did not achieve ideal results in the competition. Yang Liujing and Wu Quanming were in the first group at the initial stage. After the fifth lap, Yang Liujing and Wu Quanming showed a state of shifting gears. In the last lap, they reached the maximum speed of the whole race at 8:30 and 8:32 respectively. In the last lap, the competition between them was fierce and the acceleration range was relatively large. Qieyang Shijie was on the highway the whole time. The speed change range was small. From the acceleration state of Qieyang Shijie in the second half of the race, it can be seen that Qieyang Shijie had a good speed distribution mode in the whole race. On the whole, only the top three of the top six female race walkers in China have better acceleration ability. In the second half of the race are in the acceleration state, showing good speed maintenance ability. This year, can be seen from table 3 women walkers in China before the top three athletes in the entire game is slow, quick speed distribution, after three players before the game is fast after slow speed distribution, won the excellent results from previous studies in more velocity distribution in the form of "former slow, quick"[5]. On the whole, the speed distribution of the top three athletes is similar to that of the elite race walkers. The speed distribution of the last three athletes in the race was not very ideal.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 the conclusion

4.1.1 The top six male athletes in China have a slow start speed, and the speed of the whole race is gradually accelerated. The highest speed of the top six athletes appeared in the last stage. From the whole point of view, the top six men's race walkers in this competition in China are all the speed distribution mode of the first slow and the second fast.

4.1.2 Qieyang Shijie, the top six female athletes in China, was faster in the starting stage and led the whole process. In this competition, the top three female race walkers in China are the first slow and the second fast in the whole race, while the last three athletes are the first fast and the second slow in the race.

4.2 suggest

4.2.1 The starting speed of Chinese race walkers should be improved relatively. Improve speed control during the race. Participate in the World Series regularly and increase the analysis of World Series opponents.

4.2.2 Chinese athletes should have a clear understanding of the situation, strengthen the analysis and research of competitors in the competition and improve the prediction and research of the competition situation. Learn to practice in competition. In order to improve their own strength.

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Analysis of Meteorological Environment on Factors Affecting Physical Exercise of College Students

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Abstract: In the process of modernization development, the quality of life and the level of artificial intelligence has also caused irreversible impact on the natural ecological environment. China is advancing and rising with an irresistible trend. With the rapid change of marketization, industrialization and urbanization, haze air pollution has gradually become a hot issue that needs to be solved urgently in China. Residents' physical and mental health and daily life and work have been seriously affected by the haze air pollution. In this regard, the Chinese government is also conducting real-time monitoring of the haze situation, and promulgation of relevant policies and regulations for control and prevention. College students as national reserve talents, their physical health level has a key impact on China's future development. School physical education is the best way for college students to build correct sports values and develop lifelong sports habits.
Keywords: Haze; Air Pollution; Physical Exercise

1.INTRODUCTION
1.1 Selection basis
China is in the process of rapid social and economic development. With the rapid change of marketization, industrialization and urbanization, environmental pollution and ecological crisis are becoming more and more serious. The deterioration of air quality has resulted in a significant increase in the number of cities affected by smog, as well as a significant increase in smog concentration and duration. Since January 2019, severe smog has appeared in Beijing and many cities in eastern China, exerting a growing impact on China's social environment and residents' activities. China's smog has become an international issue. As the haze becomes more and more serious, the health of Chinese people and the environmental conditions of cities are also increasingly endangered. Therefore, from January 2020, the Office of the National Commission for Disaster Reduction defined haze as a natural disaster. Across the country, provinces and municipalities that have been hit by the haze weather have also started to measure the daily haze concentration, provide the haze concentration index to the public and popularize corresponding protective measures.

According to the haze monitoring data in recent years, the physical health and daily living standards of Chinese people have been seriously affected by the haze air pollution. At least one-third of China's cities, with nearly 800 million residents, suffer from varying degrees of smog. The faster the pace of industrial progress and the more developed the economic benefits of the region, the more severely affected by smog. For example, the more developed areas such as the Yangtze River Delta, the Pearl River Delta and the Beijing-Tianjin-Hebei region. Detailed statistics from the 2010 Global Burden of Disease Assessment found that outdoor air pollution had cost the country an estimated 25 million healthy life years and caused more than 1.2 million premature deaths. According to the ministry of Environmental Protection's 2014 data, the average annual concentration of PM2.5 in the Beijing-Tianjin-Hebei region was as high as 93 g/m3, and the proportion of days that met the standard for heavy smog was as high as 17% that year. Frequent occurrence of haze air pollution not only affects the physical health of the people but also causes serious economic losses to our country. In view of the different national conditions, China's economic development is in the middle stage of industrialization. On the whole, although China attaches great importance to and supports the development of high-tech industry, heavy and chemical industry is still an important link in China's industrial system, resulting in a large amount of soot pollution [4].In addition, with the development of economy, Chinese people's demand for motor vehicles keeps increasing, and the increase of motor vehicles is also one of the main reasons for haze pollution.

1.2 Research Significance
Since the reform and opening up, after the people have solved the problem of food and clothing, the requirements for physical health and quality of life have gradually improved. Physical exercise has been concerned and practiced by different groups of people and has been integrated into People's Daily life and become an indispensable part. Although Chinese people's awareness of physical exercise has increased, it can be seen from the National Fitness Plan (2011-2015) that in the total population of China, only 33.9 percent of the citizens regularly participate in physical exercise, while in developed countries, the physical exercise population can reach about 44 percent. Therefore, to improve the physical exercise population is an important measure to enhance the physical health of our people. Countries do hair [2016] 27 General Office of the State Council on strengthening school sports promote health of body and mind the opinions of the all-round development of students "mentioned in the importance of strengthening school sports, believe it helps students' comprehensive development, and is beneficial to strengthen the quality of

school education, so as to promote the modernization of education, it will make a significant contribution to realize China's dream. On the fifth plenary session of the party 18 promulgated the "healthy China 2030" planning outline ", also mentioned the work we need to insist on the right of health and health policy, stressed the importance of health, think that we should pay attention to people's health level, over a wide range of health factors and adopt various means to popularize health life and construction environment, from all aspects to ensure the health of the people. Attach importance to health education and integrate it into quality education at all stages as an important content.

School physical education is the foundation of national physical education. In the face of PM2.5 air pollution, college students, as reserve talents of the country, will also have different attitudes towards physical exercise and conduct different physical exercise coping behaviors. The emergence of these coping behaviors of physical exercise will lead to a new situation of college students' physical health. How to correctly understand the current situation of haze and how to make the best and avoid the weak points under the influence of haze weather, and how to make scientific and reasonable physical exercise response behavior has gradually become an unavoidable issue in the current physical education in schools, which needs to be solved.

2. REVIEW OF RELEVANT LITERATURE

2.1 Definition of PM2.5 haze

According to the China Meteorological Administration, fog refers to a large number of tiny water droplets floating in the air, which are mainly milky white and have horizontal visibility of less than one kilometer. Unlike fog, haze refers to tiny dry dust floating in the air, with horizontal visibility of less than 10 kilometers. In 2010, China Meteorological Administration updated the definition of haze. In addition to adding the concept of humidity to the description of visibility, fog was redefined as the meteorological characteristics that visibility is less than 10 kilometers and the relative humidity of the air $\geqslant$ 95%.Haze is redefined as a meteorological feature with visibility less than 10 kilometers but air relative humidity less than 80%.

Haze is a multi-component mixture of air pollution. Currently, PM2.5 index is a common universal index used to assess the severity of air pollution around the world.PM2.5 plays a certain role in promoting the formation of haze air pollution meteorology, and haze air pollution meteorology is conducive to the combination of PM2.5, the two promote each other, further deepening the degree of air pollution.PM2.5 has the characteristics of small particle size, large surface area and strong activity. In addition, its adsorb ability is stronger than that of larger particles, so it is likely to be attached with toxic and harmful substances, which will contribute to the spread of diseases. Therefore, it has the characteristics of long residence time in the air and long transportation distance. Research shows that atmospheric visibility is negatively correlated with PM2.5 mass concentration. Dry dust float in the air in addition to cause an imbalance in the body

oxidation and antioxidation, cardiac electrophysiological disorders and systemic inflammation, may affect and cardiopulmonary function of physiological system, a study says smog can worsen symptoms in patients with nervous system diseases, and harmful to children's development of the nervous system. In addition to the visible adverse effects on people's physiology, haze weather also because of its low visibility, gloomy light, low atmospheric pressure characteristics give people depressed mood, slow thinking, lack of vitality and initiative and other malignant emotional problems.

2.2 Research progress of haze theory abroad

Western countries also experienced severe haze pollution in the process of industrialization. Before the beginning of the 20th century, many countries had already realized the harm of haze and understood the importance of PM2.5 index. However, most of them only chose to monitor PM2.5 but did not take substantive measures to prevent haze. Only a few developed countries have conducted targeted studies on the haze problem in addition to monitoring the haze concentration. In the United States, a longitudinal epidemiological tracking survey from the 1980s showed that in cities, the concentration of dry dust in the air was strongly correlated with the size of particulate matter, as well as the morbidity and mortality of residents. Studies found that smaller particulate matter could lead to higher mortality. With the findings, the American Cancer Society has made clear the exact size of particulate matter in the atmosphere.

At the same time, the European Union also began to study and take countermeasures. A decade ago, the European Commission updated its old air quality standards on PM2.5 in smog and agreed on a multi-year target for tackling air pollution, requiring a 2% reduction in the concentration of inhalable particulates in the atmosphere by 2010 and a limit of 20 g/ day between 2008 and 2013. The idea is to stop the problem of air pollution caused by fine particulate matter from getting worse. This standard for other countries, especially developing countries is more difficult to achieve, or the state of the problem because of the economic level, the general setting in air pollution control programs in less developed areas, the setting time is relatively long, 2010 renmin university of China, the study found through comparing data from a number of countries and regions at home and abroad, and they found that developed countries set up by the air quality monitoring stations, more and more widely, so you can get more accurate and stable air quality data, there are nine countries and cities have PM2.5 monitoring sites. At present, air quality data measured in many countries are released to the public in real time through media such as news media, the Internet and even apps.One such site, in the US, supports regular customised air quality information sent to users via email.

Haze air pollution not only brings adverse effects to people in physical and daily work and life, but also produces adverse effects in national psychology, which is closely related to social psychological factors. Foreign scholars Evans and Campbell (1983) proposed the environmental stress model of air pollution, emphasizing

that individual stress assessment of air pollution resulted in the formation of adverse effects. Clougherty and Kubzansky (2010) also put forward the socio-environmental interaction model to emphasize air

The adverse effect of pollution is the result of the interaction between environmental hazards and social psychological factors. Our citizens have suffered greatly, resulting in corresponding health and economic double losses. Many provinces and cities (for example, Beijing, Suzhou, Henan, etc.) have started to classify local AQI levels and make corresponding emergency plans. Different cities have different LEVELS of AQI. At present, China is at the peak of being hit by haze. According to the statistics of haze pollution in recent years, haze weather generally presents an increasing trend, among which the number of days of fog is significantly reduced and the number of days of haze is significantly increased. Moreover, there are characteristics such as extensive haze areas, long duration and large concentration. The phenomenon of high concentration of PM2.5 is caused by internal and external factors. Meteorological conditions are external factors, while the emission of a variety of air pollutants is internal. In December 2013, China suffered the most serious and most influential haze pollution since the beginning of the winter of the same year. The haze affected almost the entire central and eastern part of China, affecting about 600 million people in 17 provinces and autonomous regions. Some cities began to shut down, suspend classes, close roads and reduce outdoor activities.

3. OVERVIEW OF THE CURRENT SITUATION OF COLLEGE STUDENTS' PHYSICAL EXERCISE

3.1 Research on factors influencing college students' physical exercise behavior

Since the 1990s, Chinese scholars began to explore the factors affecting adult physical exercise. In particular, the National Fitness Program issued in 1995 has attracted the attention of Chinese scholars to the study of physical exercise. Through the summary of previous literature, it is found that there are two main factors affecting college students' physical exercise behavior: personal factors and environmental factors.

Individual behavior and demographic variables are two individual factors affect the physical exercise, the personal behavior variables is mainly composed of individual attitude towards physical exercise, purpose, habits, places, whether exercise consists of such factors as the guidance and the demographic variables include age, gender, personal health, career, family and other factors. In addition to the above individual factors, there are also environmental factors that affect physical exercise, which are mainly composed of two factors, namely physical environmental factors and social environmental factors. Physical environmental factors include geography, weather, site convenience, living environment, facilities, etc. Social environmental factors include economic level, public service construction, media, national policies, etc. At present, most of the researches on the factors affecting physical exercise are based on the analysis and exploration of the influence of individual factors on physical exercise

behavior. However, the influence of group health behavior theory, such as ecology theory, is just in its infancy in China. Yan Hu (2013) proposed in his research on the relationship between college students' physical exercise behavior and environmental problems that climate, air, noise, sunlight and other factors are the main factors affecting college students' physical exercise behavior. In fang Min's (2010) theoretical explanation and Prospect study on the ecological model of exercise behavior, the detailed ecological model can be used to explain the combined effect of environmental, physiological and psychological factors on exercise behavior. It is mentioned that there are union-to-single effects among each dimension, as well as union-to-many combination effects across dimensions. In other words, each dimension is associated with other dimensions, so if one dimension is changed, other dimensions will also change. That is to say, when discussing the influencing factors of physical exercise behavior, the influence of various factors on individuals should be integrated, including the influence of ecological environment on individual physical exercise behavior. Foreign scholar Zhang T et al. (2013) indicated in the study that, in view of the importance of social and physical environment for multiple choice and compliance of physical activity behaviors, it is necessary to increase our understanding of the impact of environment on sports and activities, and maximize the use of the existing environmental structure to increase physical activity. Yasunaga Ad (2014) in evaluating the behavior of the movement of the Japanese female college students and the relationship between the individual and environmental factors, points out that environmental factors and the Japanese female college students is closely related to the level of exercise behavior, self-efficacy, social support, actively and active scored well significantly higher women's lives and the physical environment.

3.2 Question proposal

First, the outbreak of haze in recent years has affected people's normal life and travel. According to the research status at home and abroad, college students have a very strong perception of the severity and threat of haze air pollution. When the risk crisis comes, they know through various channels that the haze air pollution phenomenon has a negative impact on human living environment and human health. When they realize that they are about to or have been in the risk, they will instinctively generate the core emotions of anxiety and panic. The health risks posed by the environment motivate them to take specific actions to protect themselves from threats. However, at present, China's theoretical research on haze mainly focuses on exploring the causes and evolution rules of haze, how to prevent and control haze problems, and the correlation between haze and economic and industrial structure. Lack of research on the coping behaviors of specific groups in the face of haze air pollution. To a certain extent, the negative impact of air pollution is caused by individual factors, that is, individual psychology and psychological state as well as their perception of haze, which can provide help to reduce the negative impact of haze. Therefore, it is necessary to study how to objectively and scientifically

guide specific groups to face the haze air pollution and take the correct response behavior according to their characteristics.

Secondly, physical education in colleges and universities is the most effective way to cultivate college students' values of lifelong physical training and good physical exercise habits. And the time of haze happens to coincide with the class time of students in the semester. In previous years, heavy smog alerts have led to the suspension of outdoor physical education classes, and even to the suspension of classes in primary and secondary schools throughout the day. Only a handful of schools now have indoor stadiums. When haze weather has not been effectively controlled, what is the current situation of college students' physical exercise coping behavior? How can the media, the government and colleges effectively guide college students to adapt to the environment and choose the healthiest physical exercise coping behavior under the influence of haze pollution to different degrees?

4. SOLUTION

The revised scale of outdoor physical exercise coping behavior of college students in haze weather has good reliability and validity. The scale can be divided into four dimensions, namely haze perception level, positive coping behavior of physical exercise, resisting coping behavior of physical exercise and risk-taking coping behavior of physical exercise.

(2) Haze perception level of college students has a positive correlation with college students' active response to physical exercise, and has a significant predictive role. Haze perception level of college students is also positively correlated with their physical exercise resistance and coping behaviors, which has a certain predictive role. The intervention on college students' coping behavior of physical exercise can start from their perception level of haze.

(3) More than half of college students can take an active part in physical exercise under the premise that their health is not threatened when facing the haze. Boys and girls have different tendencies in sports coping behaviors. Boys were more likely to engage in risk-taking coping behaviors, while girls were more likely to resist coping behaviors.

(4) College students generally have a high level of perception, and are highly concerned about and aware of haze air pollution. There was no significant difference in the distribution of coping behaviors with different physical exercises in age. Freshmen are more likely to engage in risk-taking and coping behaviors, and the percentage of resisting coping behaviors increases with age.

(5) On the whole, students who do not take part in physical exercise still choose to resist and cope with the haze. While students with low or moderate intensity exercise habits were more likely to choose positive coping behaviors, while students with persistent high intensity exercise habits were more likely to choose risky coping behaviors.

5. CONCLUSION

This paper has the following limitations in the investigation: First, although the sample size has been universal and representative, it can be verified with larger sample data. Besides, among the four universities surveyed, except Xi 'an Jiaotong University, all the others are science and technology universities, and the proportion of male students is much higher than that of female students. Although the sample size of male and female students has reached the range of statistical analysis, there may still be some errors in the analysis of the difference between male and female students.

It is of great value to study the current situation of physical exercise response behavior of specific subjects in haze. The physical education received by college students in school has a profound impact on their lifelong physical education outlook and physical exercise habits. Therefore, it is necessary to carry out more investigation experiments with larger data, and more connections may be found, so as to find a new way more suitable for guiding and interfering college students' coping behaviors in physical exercise. For different specific groups under the background of other environmental hazards, relevant research can also be carried out on their physical exercise coping behaviors, so as to explore the relationship between the environment and physical exercise coping behaviors, improve the national physical exercise adaptability, and improve the comprehensive physical health level.

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Construction of The Ethical Value of College Physical Education Curriculum Under the Background of Curriculum Ideology and Politics

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Abstract: Curriculum ideological and political education is the current ideological and political education a breakthrough and attempt, expect to create a full range of teaching system and mode. On the one hand, the combination of ideological and political courses and ordinary class mode can improve the effectiveness of ideological and political education. On the other hand, the integration of ideological and political contents into college physical education not only opens another teaching channel for ideological and political education, but also elevates ideological and political education to a new height.

Key words: Curriculum Ideology and Politics; College Sports; Ethical Values

1. INTRODUCTION

The current social changes have put forward new requirements for national education, and the ideological and political construction of curriculum is an important part of it. The construction of ideological and political courses is not only to respond to the needs of the society, but also to promote teachers to fulfill their responsibilities and fulfill their mission, and to seek breakthroughs in ideological and political courses at the level of campus curriculum system. However, in the actual construction, the curriculum reform is faced with many difficulties: lack of motivation on the part of teachers, and teaching effect cannot be guaranteed and judged correctly. The course is inclusive and respectful of the characteristics of different disciplines, and aims to cultivate qualified builders and successors for the society.

In college, physical education is also a political and ideological class in a sense. For college physical education teaching, it and other professional courses at the university of different, although on the surface, physical education and ideological and political education without any connection, but the thorough analysis can clearly, in the sports teaching stage, its can be further through continually developing sports training activities to improve students' ideological and political quality.Moreover, in the physical education teaching activities, students can rely on the training and deeply feel the participation in the activities, so as to achieve the purpose of improving their own ability and level. In addition, in physical exercise, students' patriotic consciousness and collective concept will also be cultivated, which has great promoting significance to the growth and development of students. It can be seen that there is a very close relationship between college physical education and ideological and political education. Therefore, it can be said that physical education also has the function of ideological and political courses.

2. BACKGROUND AND VALUE OF THE FORMATION OF "CURRICULUM IDEOLOGY AND POLITICS"

Since the 18th National Congress of the Communist Party of China (CPC), under the guidance of the General Secretary's important exposition on education, schools across the country have explored and thought about the problem of "how to train people" to varying degrees. Since 2014, under the correct guidance of the Ministry of Education, colleges and universities in Shanghai have actively carried out the pilot work of teaching reform. Through continuous efforts, a set of ideas and forms of ideological and political education with a sense of The Times and high value has been formed, namely the mode of "curriculum ideological and political education".

The background of the formation for the "course education", the scholar thinks, the ideological and political education to reform because of ideological and political education should follow in the footsteps of time move forward together, are able to reform because the thought of socialism with Chinese characteristics have xi new era as a guide, and the "curriculum education" is put forward based on this background. The reason why "curriculum ideology and politics" is put forward mainly comes from the following four aspects: first, ideological and political theory course and other courses have a high degree of consistency in the dimensions of training objectives and training objects; Second, although there are some differences between ideological and political theory course and other courses in the specific content, these differences do not affect their unity in the dimension of knowledge and value. Third, the unity of depth and breadth. Ideological and political education can not only stay in the classroom preaching, slogans to promote the level, but also must reach the level of "into the brain". In depth, to make ideological and political education reach the level of "entering the brain", it is necessary to work on breadth, that is, ideological and political education should not only work on ideological and political theory courses, but also work on other courses at the same time to educate

people in an all-round way; Fourthly, the construction of any course cannot be separated from the theoretical support of the corresponding specific discipline. Similarly, the construction of any discipline cannot be separated from the corresponding specific curriculum as the carrier, and the curriculum and discipline are mutually unified.

For the concept of "course education", the scholar thinks, "course education" as the ultimate goal of talents cultivation in each curriculum as the main channel, guided by the marxist theory, as a whole from the management, operation and evaluation through teaching resources, improve professional class teacher value consciousness and the penetration of ideological and political education activities. Some scholars also pointed out that although there is no unified definition of "course" in the academic circle, there is a common understanding of "course", that is, "course" has the characteristics of emphasizing process, system, object characteristics and generation. Course is the important carrier of ideological and political education to conduct, curriculum contains emotion, values, which is to find the attachment point of ideological and political education, as a result, "course education" is the curriculum as the important channel, in an implicit way to ideological and political education, requirements and principles and the content of the organic combination of each specific course form of ideological and political education.

As for the value of "curriculum ideology and politics", some scholars believe that "curriculum ideology and politics" plays an important role in guiding students to shape independent personality, enhancing moral character and cultivating public spirit. College stage is an important transition period for students to enter the society and an important preparation period for deciding whether students can settle down in the society in the future. Therefore, during this stage of college, students not only need to increase their knowledge reserve, but also need to cultivate their personality, shape their character and cultivate their public spirit.As the aspect of "cultivating personality, shaping character and cultivating public spirit" has recessive characteristics compared with "increasing knowledge reserve", it is often ignored by students. However, "curriculum ideological and political education" can solve this problem through its recessive ideological and political education function. Educating people is the value source of "curriculum ideological and political", which promotes the effective development of ideological work in colleges and universities, promotes the innovation of education mode in colleges and universities, and then realizes the co-orientation of all kinds of courses and ideological and political courses. Some scholars believe that the concept of "curriculum thinking and politics" is a kind of Chinese discourse based on the local educational practice to carry out the reform of general education, and is a Chinese interpretation of the value of curriculum education. It can prompt colleges and universities to reflect on the value orientation of general education and make it an important carrier for educating people. From the perspective of the effect and breadth of the ideological and political education, what the ideological and political education should achieve is the

education effect of cultivating people by virtue, which can be achieved only when all the courses exert their efforts at the same time and in the same direction.

3. RESEARCH PROCESS

At present, the state attaches great importance to school physical education. In August 2020, the General Administration of Physical Education and the Ministry of Education jointly issued the No. 1 document "Notice on Deepening the Integration of Physical Education and Sports to Promote the Healthy Development of Teenagers". The Central Committee of the Communist Party of China and the State Council issued the Overall Plan for Deepening the Reform of Educational Evaluation in the New Era, which emphasized moral education in schools, moral ethics and teaching achievements in teachers, and physical education in students. The General Office of the CPC Central Committee and the General Office of the State Council also issued the Opinions on Comprehensibly Strengthening and Improving School Physical Education in the New Era. It should be said that the spring breeze of campus physical education has come. As sports workers in colleges and universities, they must take advantage of the situation and take the initiative to improve the quality of physical education in an all-round way, improve students' personality quality, and give full play to the comprehensive role of sports in cultivating and practicing socialist core values and promoting quality-oriented education. University physical education courses education, aims to accelerate the exploration of university physical education curriculum education process, mobilizes all teachers to participate in education practice of physical education curriculum, actively guide the student to set up "movement have I, struggle with me, I have" consciousness, and make students have ambition, perseverance and patriotic spirit of the successors of the socialist cause.

The cultivation of students should develop morally, intellectually, physically, aesthetically, and diligently in an all-round way. The importance of physical education is self-evident, especially in the context of epidemic situation, which highlights the significance of physical education in higher vocational colleges. A good physical education course can not only strengthen the body, but also fulfill the mission of educating people. The ethical value of college physical education course refers to the ethical value of college physical education course, and the ethical goal can be embodied through a series of courses. The implementation of the curriculum can not only involve all the participants in the curriculum reform, but also refer to the process of the practice curriculum that teachers and students participate in together.

Physical education can not only increase physical fitness and adjust psychology, but also cultivate students' fighting spirit, rule consciousness, competition consciousness and team spirit. It is a course that is best expressed in ideological and political teaching and most easily accepted by students. University sports should fully follow the teaching features, relying on course group of innovative design, strengthening the construction of physical education curriculum education team, quality

standard for the guide to courses, reform teaching methods and means, to discuss course ideological connotation and implementation approach, to promote college students through physical exercise cause thinking, cognition, emotion, reason and behavior identity, improve curriculum ideological education effect, sports teaching reform with the synthetic course ideological construction, promote each other.

There is a close relationship between the ethical value of college physical education curriculum and curriculum ethics. The relationship between value subject and object of college physical education course can be embodied in the ethical level, and value subject is not equal to the ethical subject. The value object of college physical education course satisfies the value subject in the aspects of morality, truth, goodness and beauty. The subject of value is teacher, student and society. And the object is teaching content, curriculum practice. Not all subjects are entities. Only when subjects really participate in the course teaching and maintain some connection can they become real value entities. At present, there are many outstanding problems in the course of curriculum reform. There are also many controversies and obstacles in the process of educational reform in the society in the type period. However, the emergence of these problems provides new opportunities and challenges for the construction of curriculum ethical value.

In the course of curriculum ideological and political construction, the administrative personnel of the sports department should give full play to the political leading role of the party organization, take advantage of the learning opportunities of political theory, hold lectures and seminars on curriculum ideological and political topics, enhance the responsibility consciousness of teachers to do a good job in curriculum ideological and political teaching reform, and turn it into classroom teaching, teaching and educating people consciously. Contact teaching and research section and sports teams to develop sports leadership mechanism, education in the teaching and guidance teachers, especially teachers dig PE education responsibility, function and connotation of education, improve the measures for the management of classroom teaching, build system of curriculum quality evaluation, form a new pattern of sports classroom education teaching norms, for ideological mobilization, full participation of the whole sports courses to lay the good political basis.

In college physical education, to cultivate students' patriotic spirit, we can take the case of winning glory for our country in the international Olympic Games as the teaching material. For example, due to the accelerating speed of China's international status in recent years, China has won the right to hold international Olympic games, etc., the existence of these cases can be used as teaching materials for students to cultivate their patriotism. Through the guidance of specific cases, students will also have a more profound understanding of the meaning of patriotism, so that the thought of continuous development of sublimation, strengthen their own patriotic spirit.

If sports activities can be effectively carried out and carried out, students' competitive ability can be promoted to a large extent, and enterprising spirit can be cultivated. And, for the vast majority of sports activities, it can also cultivate students' team ability. Based on this background, students participating in sports activities can undoubtedly better feel the charm of team spirit. However, many of the post-90s and post-00s college students are the only child in the family, so they have a strong sense of self and do not have a good collective concept. Therefore, the effective development of collective sports activities, just can make up for this defect, to the student's collective concept and team spirit of the formation has a great promoting significance. For college sports teaching, it can also be regarded as a competitive activity, which can comprehensively consider students' reaction ability and endurance. At the same time, for contemporary college students, it is closely related to the future and destiny of the country. It can be said that the actual development of college students is directly related to the future development of the country. Therefore, every college student in the process of school learning, must have an indestructible spirit, the courage to innovate, indomitable struggle, in order to be able to face many tests in the future with a better attitude. There is no doubt that these competitive and enterprising spirit can be fully reflected in college physical education. Through carrying out various activities, the spiritual quality can be instilled in the minds of students.

4. CONCLUSION

There are many aspects that need to be considered and analyzed in the construction of the ethical value of college physical education curriculum, and the specific summary is as follows: the construction of the ethical value of the curriculum is in the process of continuous improvement, and the important position and role of teachers in it should be paid attention to.Pay particular attention to responsibilities and obligations. They attach great importance to classroom performance, teaching effect and level. Teachers are also very clear about their responsibilities and missions. Therefore, teachers are very self-disciplined and take the initiative to complete tasks and fulfill their obligations at work. Fulfilling an obligation is no longer supervised by others, it can be done by oneself. For teachers, as a member of society, the fulfillment of obligations is the concrete expression of moral nobility, is the performance of moral values. Virtue can often reflect different realms in reality, and different people have different concepts and levels in virtue. In the group of teachers, such differences also exist, the ability of the difference is accompanied by the different understanding of virtue. For teachers who are not at a high level of morality, the role of morality should be to correct their behaviors, make them carry out activities in accordance with the norms, clearly recognize the boundaries of behaviors, and contain and solve negative and undesirable phenomena. For those subjects who are already at a higher level, it is a matter of thinking and analysis to go to a higher level of goodness and make a breakthrough.

Curriculum ethics and curriculum value complement each

other, and the final realization of curriculum value needs the help of curriculum ethics. The realization of curriculum value needs to meet the conditions, which has a direct relationship with the value subject, that is, parents, students, teachers, society and educational resources and other aspects of the teaching environment jointly established. Different schools may have differences in teacher quality, teaching environment, cultural environment, etc. Therefore, the practice and exploration of curriculum theory and value will also have different differences. Curriculum ethical value needs to consider the gap between ideal and reality, which should not only meet the current educational needs and curriculum environment, but also pay attention to continuous exploration and breakthrough. Therefore, it is necessary to balance the gap between the actual content and effect of curriculum ethical value construction and the ideal goal. The construction of curriculum ethical value needs to consider the actual situation in order to better promote the process.

Under the background of quality-oriented education, for universities, in order to better improve students' quality and ability and to provide more high-level and high-quality talents to the society, they must adhere to the people-oriented concept and strengthen innovation. For the college physical education course, it is a very important part of quality education, to the future development of students has a great significance. Therefore, in the specific stage of college physical education teaching, teachers should reasonably integrate ideological and political education into it on the basis of combining educational content and students' characteristics, so that college physical education can also become a part of ideological and political courses, rather than stay in the theoretical stage.

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Research on the Integration Development of Competitive Sports and Physical Education in Colleges and Universities in China

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Abstract: The foundation of the integrated development and progress of competitive sports and college sports is to solve the existing problems, and take the comprehensive development of the training object as the core, to find a better and more reasonable development path. At this stage, the body with education is the essential problem does not solve the contradictions between study, the subject is not clear, sports and education departments jointly responsible for the Shared vision is a good thing, but in practical work caused the power and responsibility is unclear, return to the scores, old ideas of gold medal, is not conducive to cultivating competitive sports reserve talents with comprehensive quality, weaken the role of education system, colleges and universities has become an affiliate of the competitive sports, as the rest after the training of professional athletes. In essence, it has not realized the ideological change from competition results to human development. The integration of sports and education should make full use of the educational function of competitive sports, improve the current situation of physical strength and weakness, and base on the cultivation of long-term survivability.
Key words: Competitive Sports; Physical Education; Integrated Development; Teach Fused

1. BASIC DEFINITION OF INTEGRATION OF PHYSICAL EDUCATION

The integration of physical education includes two systems of physical education and education. The concept of integration has two meanings in the explanation of Cihai: the first meaning is to dissolve and melt, and the second meaning is to harmonize and harmonize. Obviously, it is highlighted here that integration has reached a higher level than integration in the sense of depth and breadth.

Fusion education refers to the multi-type, across different age and even cultural fusion in the same teaching organization form of the learners, on the basis of phase of the cultural education, meet the demand of basic education in underdeveloped areas, is an important supplementary form of teaching behavior, to help expand the scale of education as possible under the condition of limited, narrow the gap due to unbalanced education resources (special education, etc.).The essence of integrated education is the all-round development of human beings, recognizing the positive initiative and subjectivity of human beings, and advocating the importance of social environment and systematic knowledge.

2. TRAINING OBJECTIVE: PERFORMANCE-ORIENTED TO PEOPLE-ORIENTED DEVELOPMENT

The essence of the stage of the combination of sports and education is to train high-level athletes in competitive sports. Under the operation situation of the National Games and the whole nation system, the goal is to achieve good results for the affiliated colleges and universities, provincial and municipal sports bureau. Long-term since, our country the athletes training is the result for this, the one-sided emphasis on sports skill has increased, while ignoring the cultural qualities of talents of competitive sports, psychological environment, focus on the problems of the ideological and moral construction, and thus contribute to an athlete entering too soon after a amateur sports schools from education system from primary school, without the experience of conventional culture education obligations stage. This training mode has a significant impact on the lifelong development of competitive sports talents. Once they experience sports injuries or break away from the sports team system for various reasons, the relatively low cultural level directly leads to the difficulty in employment of these personnel. The limited employment positions in the sports system force them to have nowhere to go when choosing a career independently, which makes it difficult for them to develop.

At the same time, the education system does not give full play to the educational function of competitive sports, and the education of competitive sports talents is simply handed over to the sports department. Body with education concept is, in fact, in order to eliminate the sports functional departments and between the functions of the education problems, but in the actual operation process, the two together and didn't really change our country the status quo of sports talents of competitive sports in school education never give full play to the function, the positive role of sport for adolescent socialization also failed to reflect, the fundamental problem is the result for this under the value orientation of sports system and education system there is a natural adversarial relationship, has yet to find a sport achievement and culture quality common development path, making the role of the education system in colleges and universities.

At the micro level of this stage, colleges and universities are exempt from examination or lower the admission threshold to recruit competitive sports talents, and their majors are limited to non-key disciplines; During the school period, separate class teaching, separate accommodation closed management, separate teaching

evaluation, no or very little contact with the campus personnel, completely separated from the university life, actually damage the athletes' right to education; In the middle level, competitive sports teams and high-level sports teams have broken away from the normal university education environment in real life. Macro level, under the guidance of our sports department and the achievements, the results of the competition has always been the main target, the main work in the system of colleges and universities has actually become the athletes' training base, cultural course credits to measure performance, not only failed to solve contradictions between learning problems, instead more prominence, the result of training goal has become a key point in the development of fusion.

Physical education and education are both sub-items of the social system, and the change of social form will inevitably lead to the new form of sub-items, which will inevitably be restricted by the social system and must adapt to the national situation at that time. The combination of sports and education is a special product of China during the period of planned economy, its goal is short and rigid, and the cultivation of people is a short-term profit-seeking behavior under the trend of competition results.

After entering the era of market economy, China's national strength has improved, ideas are open, the department of education in the cultivation of the talents of competitive sports also gradually take on more responsibility, in the process of sports and education begin to enter fusion stage of development, training objectives on the top-level design, begin to pay close attention to the comprehensive quality of ascension of competitive sports talents, individual to long-term sustainable development of national sports system; Fully excavate and practice the educational function of competitive sports, promote the all-round development of quality-oriented education, enrich the recreational and sports activities on campus, and improve the health condition of the people all over the country.

3. CULTIVATE SUBJECTS: FIGHT INDEPENDENTLY TO INTEGRATE DEVELOPMENT

There are natural defects in the dual system coexisting mode under the combination of physical education. Different training purposes and approaches will lead to divergences in interests. There are various forms based on different goals and interest relations, each has its own advantages and disadvantages, but the improvement of athletes' comprehensive quality is always lagging behind. The main body of sports education integration is the education system, which puts the training of athletes in the education system, integrates the sports resources with the educational function of the education system, fully mobilizes the enthusiasm of the main body of the education system in the process of cultivating talents, and promotes the progress of the sports cause in China. Physical education system can also learn from the experience of education system in knowledge impart, psychological construction, non-cognitive ability training and so on, so as to cultivate comprehensive sports talents

with sustainable development. The integration of sports and education is precisely in the context of institutional reform on the supply side proposed by the state. Starting from institutional reform and innovation, it integrates the advantages of both sides and gives play to the resultant force.

3.1 Training objects: athletes, students and student-athletes

The main body of athlete students is athletes, who take competitive sports as the main cause and engage in professional training as the main content of life. Student athletes, on the other hand, are amateurs who are engaged in systematic knowledge learning, live and grow in the special environment of school, and engage in sports exercise in their spare time to improve their physical quality and promote their comprehensive and sustainable development. In addition, in the school system, the source of the training objects of competitive sports is more extensive, the basic quality is also guaranteed, better for the country to explore and reserve professional talents, is very conducive to promoting the long-term development of sports.

3.2 Training process: specialization to comprehensive

In the stage of combining sports and education, the skills of athletes in the sports system are imparting by professional personnel, and the cultural classes are taught by external teachers or separate classes within the school system, so the education level is relatively low. Achievement orientation, brutal training, excessive training, the condition of the athletes is very difficult to have time and energy in cultural knowledge study, the function of the education system to function on schedule, the athletes of practice is not involved in the process of culture education, to learn the contradictions are artificially, to the simple and crude processing into not only training learning state, damage to the athletes of the right to education. As for the training of students' sports skills, there are often problems such as the lack of professional coaches' guidance, imperfect field facilities and unscientific training system, which restrict the improvement of the level of student athletes and annihilate the development of students with athletic talent in the field of sports.

The integration of sports and education means in the education system, under the guidance of the concept of human development, the conditions and rights for athletes to receive education are guaranteed, and systematic cultural knowledge learning and noble ideological and moral construction are carried out in the process of compulsory education and higher education. Moreover, the professional resources of the sports system are fully absorbed and provided to the student group. The introduction of these sports resources will change the common problems of student athletes, such as poor basic sports ability, weak basic special skills, unscientific training system and lack of professional training guarantee system. High level sports practitioners to match the professional education system, can not only fully, long-term play their sports skills, and depends on scientific research ability of universities, further improve the

scientific and professional training, improve the students' sports foundation week, athletic performance limit problem hard to master, for national sports talents training to establish scientific effective path.

3.3. Target positioning of the combination of physical education in colleges and universities in China

All activities are target-oriented, and only a clear goal can guide the orderly conduct of activities and achieve success. State general administration of sports in the Ministry of Education on further strengthening the construction of common colleges and universities high level sports team's opinion to clearly define the target body with education to cultivate high level athletes: to cultivate all-round development of the high level sports talents, the goal is to complete the major events in the history of the task, for the country through the study of the patterns of each individual to teach in China after the following conclusions: the first level is in the city with the reputation of colleges and universities; The second level is to achieve excellent results in representative competitions; The third level is to promote the construction of campus sports culture through the excellent achievements, so as to enrich the campus cultural life.

As for the school-run mode of provincial teams, its training target is mainly based on the whole country, looking forward to the Olympic Games and winning the best performance. At the same time, through the continuous hosting of various professional events, in order to promote and improve the influence of the university. In the long run, the training of comprehensive quality in the combination of physical education is not contradictory with the harvest of benefits, but short-term profit-seeking behavior is still unavoidable.

The management of college sports teams and the integrated development of sports and education are inseparable from the corresponding system construction. China's college competitive sports are mainly jointly managed by the State General Administration of Sport and the Ministry of Education, while the after-school sports training is mainly in charge of the training department of the Department of Physical Education, Health and Art of the Ministry of Education, and the China University Sports Association is mainly responsible for the national university sports meeting and organizing national college group competitions. In the process of carrying out college students' sports activities, the General Administration of Sport of China will give technical guidance to the whole college students' sports activities, so the General Administration of Sport of China also participates in the management. On this basis, the management system of the university contingent in China is built independently according to the actual situation of the school.

3.4 Research on the conditions for the construction of college sports teams

Well-known refers to the coverage area of a unit's influence in society, as well as the degree of understanding and influence of social groups. Popularity of colleges and universities, there is a notable phenomenon, is when a university can somehow make its popularity has increased, coupled with the continuous publicity of colleges and universities, then, that makes the students' parents or students focus on the degree of increase, though their popularity will be reduced as time goes by, but it can maintain at a high level.

For now, many schools have set up high-level sports teams, and with the influence of high-level sports teams in school, making the popularity of these colleges and universities is relatively high, wide attention by the people from all walks of life, which makes the basis has great students of colleges and universities, it's for the school's teaching fused development have created favorable conditions.

3.5 Rich sports resources

College physical education resources mainly include physical education teachers, facilities, research conditions, various management activities and so on. Under the relevant encouragement mechanism of the state, many colleges and universities in China accelerate the pace of physical education infrastructure construction, recruit a large number of students with special talents in physical education, and constantly enrich the physical education resources of the school. Both the development of sports activities and the development of sports competitions need certain sports resources as the basis, so colleges and universities should constantly enrich the sports resources in the process of development, and at the same time constantly explore the hidden sports resources and make use of them.

3.6 Excellent economic conditions

The economic base determines the superstructure. Universities need long-term fund guarantee to undertake professional sports teams. Colleges and universities obtain considerable income through holding large-scale competitions, scientific research and innovation, expanding enrollment and other methods, thus the economic conditions of colleges and universities are becoming more and more superior. The superior economic conditions of colleges and universities have created abundant material conditions for the construction of professional sports teams and the integration of sports and teaching. There is basically no serious shortage of funds in colleges and universities. This group of data fully shows that the economic conditions of many universities in China are still relatively superior. The level of funds determines the strength and training conditions of the coach team. The professional teams at all levels of the sports system are funded by the government, while the funds of the sports teams run by colleges and universities are relatively passive. Therefore, we should actively explore financing channels, cooperate with social enterprises, improve the ability of self-financing, gradually introduce the market mechanism into colleges and universities, improve the current situation of funds, and promote the orderly development of integrated development.

3.7 Powerful teachers

The long-term development of college physical education cannot be separated from the strong faculty. The quality of teachers and talent reserve play a vital role in the healthy operation of the whole college, which is also the fundamental development of college physical education.

Therefore, in order to train professional sports teams, colleges and universities must ensure that they have a strong physical education teacher, and insist that in-service teachers undertake training and pay equal attention to the introduction of professional coaches.

4. CONCLUSION

Generally speaking, the society needs to improve the national physical education and competitive sports level, show the national strength, and improve the people's physical quality. When the main body demand cannot be satisfied, the operating power will be weakened, so that the main body initiative is hit; When the power is too large, the system will run abnormally and lead to alienation. Therefore, only under the macro-control of the national level, the implementation of the school's meso level and the individual's micro-level needs are coordinated, in order to promote the smooth development of the integration of competitive sports and college sports.

The state has actively changed its role, streamlined administration and delegated power, and given full play to its service function. By giving preferential policies to the development of competitive sports in colleges and universities, it has aroused the enthusiasm of the main body of colleges and universities. The school actively responds to the call of the state, promotes the reform of education system, publicizes the idea of quality education, and carries out the construction and development of high-level sports teams with the goal of promoting the development of students in practical work. Individuals should set up lofty ideals, actively participate in daily training and learning, complete the pursuit of self-value, and strive to make their own contributions to the school and the country.

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Approximate Solution and Application of Granular Space Problem

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Abstract: This paper takes the general binary relation information system as the research object, with the help of granular computing for data processing, and takes different granularity of the domain to construct granular space. Aiming at the problem that the original problem cannot be solved on the target layer in the granular space, the relationship between the target layer and the approximation layer is established by attribute weight, and the approximation degree between the granular layers is measured by the corresponding attribute weight difference between the target layer and the approximation layer, and the approximate measurement formula of the granular layer is given. Based on this idea, the optimal approximate solution model in granular space is constructed, and the application of this method is demonstrated by an example. It provides a way to solve the problem of multi-granularity conversion.
Keywords: Granular Space; Approximate Solution; Attribute Reduction; Attribute Weight

1. BASIC THEORY OF ROUGH SET

With the rapid development of information technology, the explosive growth of data in human production and life, due to various reasons, the data is incomplete and uncertain, and because of the different granularity of data acquisition, the data has hierarchy. How to efficiently solve problems based on massive data has become a research hotspot[1]. As a new method of information and knowledge processing, granular computing is an effective tool for approximate solving uncertain and hierarchical problems. In real life, people often observe objects or process data from different granularity levels. By changing the granularity from coarse to fine and from fine to coarse, we can simplify the complexity of things[2]. However, to solve complex problems with the idea of granular computing is mainly from the granulation of the problem under different scales to form different levels of granularity. For different granularity layers, there are different solution spaces, and each solution space determines the accuracy of the corresponding solution. Therefore, it is the fundamental task of multi-level granular computing to select a suitable granular layer to obtain a satisfactory solution.

Rough set theory is an effective tool to deal with fuzzy and imprecise problems. In rough set theory, object, attribute and descriptor are the three basic elements of problem representation. The essential idea is to establish equivalence relations according to attributes and divide the domain of discourse to solve the problem of classification. Based on the classification mechanism of rough set theory, this paper constructs the granular space

and establishes the optimal approximate solution model of the granular space problem.

Definition 1[3-4] Given an information system $S = (U, A, V, f)$. Where U is a non-empty finite set of the research object, namely the universe of discourse; A is a collection of attributes; V is a collection of attribute values, and $V = \bigcup_{a \in A} V_a$, V_a is the range of attribute a; f is the information function, $f: U \times A \rightarrow V$.

Definition 2[5] Given a finite domain U, R is an equivalent relation on U, then R can induce a partition $U/R = \{[x]_R | x \in U\}$ on U.

Definition 3 Given an information system $S = (U, A, V, f)$, if $\forall A_1 \subseteq A$, then the domain U on subset A_1 of attributes can be defined as,

$$\gamma_{ind(A_1)}(U) = \frac{|pos_{ind(A_1)}(U)|}{|U|} \tag{1}$$

Where $pos_{ind(A_1)}(U)$ is the positive region of attribute set A_1 relative to universe U. It means that according to attribute set A_1, it can be accurately partition into the set of classification elements domain U. $|\cdot|$ denotes the modulus of the set. That is, the number of elements in the set.

Definition 4 In information system $S = (U, A, V, f)$, attribute a_i is an attribute in condition attribute set A (i.e. $a_i \in A$), the importance of attribute a_i in A is defined as,

$$sig(a_i, A) = \gamma_{ind(A)}(A) - \gamma_{ind(A-\{a_i\})}(A) \tag{2}$$

Where, $\gamma_{ind(A-\{a_i\})}(A)$ denotes the dependency of attribute subset on attribute set A after deleting attribute a_i from attribute set A.

Definition 5 In information system $S = (U, A, V, f)$, for any $a_i \in A$, then the weight ω_{a_i} of attribute a_i is

$$\omega_{a_i} = \frac{sig(a_i, A)}{\sum_{i=1}^{n} sig(a_i, A)} \tag{3}$$

From definitions 4 and 5, the more importance of attribute $sig(a_i, A)$, denotes that the importance of attribute a_i is higher, and the weight is bigger. Otherwise, if $sig(a_i, A) = 0$, then indicates that the attribute a_i is unnecessary.

Definition 6[6] In information system $S = (U, A, V, f)$, if $A_1 \subseteq A$, and $pos_{A_1}(A) = pos_{A_1-\{r\}}(A)$, then r is called unnecessary attribute relative to attribute set A in A_1; Otherwise, r is called necessary attribute relative to attribute set A in A_1.

2. CONSTRUCTION OF GRANULAR SPACE

In the process of domain partition, due to different granularity and granulation rules, different layers are formed. In fact, granular space is a set of partition layers

induced by binary relation of attributes. Different binary relations partition the domain of discourse and form different forms of granular structure. In this paper, we focus on the granular structure induced by the equivalence relation of attributes in information systems.

Definition 7 Given an information system $S = (U, A, V, f)$, A_i is a Attribute Subset of A, i.e. $A_i \subseteq A$. R_i is an equivalent relation on A_i. Let π_{A_i} be the granular layer formed by attribute set A_i partition domain U, then the definition of partition granular layer induced by equivalence relation on attribute subset A_i is as follows,

$$\pi_{A_i} = U/R_i = \{[x]_{R_i} | x \in U\} \tag{4}$$

Accordingly, the information granular containing x in the granular layer can be described as,

$$g_{A_i}(x) = [x]_{R_i} \tag{5}$$

In information system $S = (U, A, V, f)$. Attribute set $A = \{a_1, a_2, \cdots, a_k\}$ corresponding to domain U is reduced, get attribute set $A' = \{a_1, a_2, \cdots, a_n\}, n \le k$, it contains n attributes. At this time, if we take different attribute subsets to partition the domain, the n attributes will form m different combination, among

$$m = \sum_{k=1}^{n} C_n^k \tag{6}$$

i.e., there are m different attribute subsets, so m different partition layer can be formed.

Definition 8 Given an information system $S = (U, A, V, f)$, A' is the necessary attribute subset, (i.e. $A_i \subseteq A'$). The equivalence relation on attribute subset A_i induce the partition of granular layer π_{A_i}, the set of granular layers under different partitions is called granular space, recorded as $G - V$, i.e.,

$$G - V = \{\cup \pi_{A_i} | A_i \subseteq A'\}, i = 1, 2, \cdots, m. \tag{7}$$

According to the above definition, the granular layer and information granule in granular space satisfies the following properties:

(1) $\forall x \in U, g_{A_i}(x) \subseteq U$;

(2) $\forall x, y \in U$, if $[x]_{A_i} = [y]_{A_i}$, then $g_{A_i}(x) = g_{A_i}(y)$;

(3) $\cup \{g_{A_i}(x) | x \in U\} = \pi_{A_i}$.

3. OPTIMAL APPROXIMATE SOLUTION MODEL FOR GRANULAR SPACE PROBLEM

The main idea of granular computing theory to solve complex problems is to solve the problem in different granular space, and then get the optimal solution through the relationship between granular layers. Generally, the granular space is constructed by granular layers which are partition by different attribute subsets. By partition, different attribute subsets can get different granular layers. Moreover, the more attributes the attribute subset contains, the higher the accuracy of solving the corresponding granular layer; Otherwise, the more attributes the attribute subset contains, the higher the cost of the attribute, and the more complexity of the problem solving. Therefore, we should consider both the solution accuracy and the attribute cost. In this paper, attribute weight is used to measure the degree of approximation between granular layers, and the optimal approximate granular layer is selected to solve the problem.

3.1 Granularity Measurement

In order to solve complex problems, a finite domain can be partition granular layers with different granularity according to rough set theory and multi-granularity idea, and all the granular layers are constructed into a granular space, i.e. $G - V$, and the problem is solved in granular space. Because different granular layers correspond to different solution spaces, the results of solving the problem on different layers of granular space are different. Aiming at the problem that the original problem can not be solved on a certain granular layer in granular space, this paper establishes the relationship between the target layer and the approximation layer according to the attribute weight, and measures the approximation degree between the granular layers by calculating the corresponding attribute weight difference between the target layer and the approximation layer. The approximate measure formula between the target layer and the approximate layer in granular space is given as follows:

Definition 9 Given an information system $S = (U, A, V, f)$. The information system is reduced to get attribute set A', and the domain is partition according to the equivalence relation of attributes to construct granular space $G - V$. Given that the target layer of the solution of a problem is π_{A_j}, $\pi_{A_i}(i \ne j)$ is the approximate layer of the target layer π_{A_j}, Let

$$f_{\pi_*} = \min_{i=1}^{m} \frac{\sum_{a_k \in A_j} \omega_{a_k} - \sum_{a_k \in A_i} \omega_{a_k}}{\sum_{k=1}^{n} \omega_{a_k}} (i \ne j) \tag{8}$$

be the approximate measure formula of granular layer, then π_* is the optimal approximate granular layer of the target layer.

Where A_j is the attribute subset corresponding to the selected target granular layer π_{A_j}, A_i is any subset of m different attribute subsets, and $A_i \ne A_j$.

In the formula (8):

$\sum_{a_k \in A_j} \omega_{a_k}$-The weight sum of all attributes in attribute subset A_j;

$\sum_{a_k \in A_i} \omega_{a_k}$-The weight sum of all attributes in attribute subset A_i;

$\sum_{i=1}^{n} \omega_{a_i}$-The sum of the weights of all the attributes in the attribute set.

Firstly, the granular space is constructed, and the target layer of the problem is determined in the granular space. According to the false-preserving principle and true-preserving principle, if the solution of the problem has a solution at the fine granularity level, it must also have a solution at the coarse granularity level, so as to determine the approximation layer of the target layer. Secondly, by calculating the attribute weight difference f_{π_*} between the target layer and the approximation layer, the particle layer π_* with the smallest difference is selected as the optimal approximate solution of the problem.

3.2 Model Construct

In the constructed granular space $G - V$, the approximation degree f_{π_*} between the target layer and the approximation layer is calculated according to formula (8), so that the optimal approximation solution granular layer is π_*. The specific steps are as follows:

Step1: Normalization of data. In the process of data processing, because the sample attribute data sets have different dimensions, value range and other factors, if the direct calculation will produce large errors.

Step2: Attribute discretization[7]. The normalized data are discretized according to the actual situation, and the appropriate discontinuities are selected to represent the values of different intervals with unified digital symbols.

Step3: Attribute reduction. The importance of each attribute relative to the domain is calculated, and the attribute with 0 importance is removed.

Step4: Construct granular space. According to the definition 8, the granular space is constructed.

Step5: Set the original problem to solve the granular layer. Assuming that the problem can be solved on the granular layer π_{A_j} formed by attribute subset A_j, the layer is regarded as the target layer.

Step6: The search range of the solution is determined. According to the true-preserving principle[8] in quotient space, if the solution of the problem has a solution at the fine granularity level, it must also have a solution at the coarse granularity level. Therefore, it is necessary to find the granular layer partition by the attribute set which has fewer attributes than the attribute subset A_j.

Step7: According to the attribute weight measurement formula (3) in definition 5, the weight of each attribute is calculated. In order to solve the problem, attribute weight is used to measure the particle layer closest to π_{A_j}.

Step8: According to the grain approximation measurement formula (8) given in definition 9, the minimum value f_{π_*} is calculated, and the optimal approximate grain π_* obtained by partition its corresponding attribute set is found.

4 Example Application

As shown in Table 1, given an information table, domain U contains 10 samples, attribute set $A = \{a_1, a_2, \cdots, a_6\}$. The optimal approximate solution method is used to find the optimal approximate solution of granular layer in granular space.

Table 1. Original Data

U	a_1	a_2	a_3	a_4	a_5	a_6
x_1	3681	99.6	100	98.7	100	294.5
x_2	3135.6	87	99.65	100	50	509
x_3	1306.9	97	99.39	97.01	0	277.1
x_4	4098	98.7	99.18	97.66	100	510
x_5	4194.28	98.1	99.96	97.92	50	532.2
x_6	3937.6	99	95.67	98.44	100	462.6
x_7	4149.3	98.3	98.92	87	100	711.9
x_8	3456.4	98.4	99.78	98.31	50	346.7
x_9	4515.1	99.2	100	100	50	543.8
x_{10}	2365.6	100	97.53	100	0	132.2

Step1: According to the data obtained from the selected indicators, the data is initialized first. The range transformation method and dimensionless processing method are used[9-10]. The formula is as follows,

$$x'_{ij} = \frac{x_i - \min\limits_{i=1}^{n}(x_{ij})}{\max\limits_{i=1}^{n}(x_{ij}) - \min\limits_{i=1}^{n}(x_{ij})} \times 100 \qquad (9)$$

In the formula (9):

x'_{ij}-Property value after initialization;

x_{ij}-Original attribute value;

$\min\limits_{i=1}^{n}(x_{ij})$ -The minimum value of column j in the information table;

$\max\limits_{i=1}^{n}(x_{ij})$ -The maximum value of column j in the information table.

The index data in Table 1 are normalized according to formula (9), and the calculation results are as follows,

Table 2. Initialization Data Results

U	a_1	a_2	a_3	a_4	a_5	a_6
x_1	74	96.92	100	90	100	20
x_2	57	0	91.92	100	50	65
x_3	0	76.92	85.91	77	0	25
x_4	87	90	81	82	100	65.17
x_5	90	85.38	99.08	84	50	69
x_6	82	92.31	0	88	100	56.99
x_7	88.6	86.92	75.06	0	100	100
x_8	67	87.69	94.92	87	50	37
x_9	100	93.85	100	100	50	71
x_{10}	33	100	42.96	100	0	0

Step2: Attribute discretization. An information system $S = (U, V, A, f)$ as shown in Table 2, where $U = \{x_1, x_2, \cdots, x_{10}\}, A = \{a_1, a_2, \cdots, a_6\}$, According to $[0, 50) = 0, [51, 80) = 1, [81, 100) = 2$, the attribute values in Table 2 are discretized, and the results are shown in Table 3.

Table 3 Discretization Results

U	a_1	a_2	a_3	a_4	a_5	a_6
x_1	1	2	2	2	2	0
x_2	1	0	2	2	1	1
x_3	0	1	2	1	0	0
x_4	2	2	2	2	2	1
x_5	2	2	2	2	1	1
x_6	2	2	0	2	2	1
x_7	0	2	1	0	2	2
x_8	1	2	2	2	1	1
x_9	2	2	2	2	1	1
x_{10}	1	2	0	2	0	0

Step3: Attribute reduction. This paper uses attribute reduction algorithm based on attribute importance to reduce unnecessary attributes[12-13].

Taking the domain A as the equivalence relation of partition, we have

$U/ind\{A\} =$
$\{\{x_1\}, \{x_2\}, \{x_3\}, \{x_5\}, \{x_4\}, \{x_6\}, \{x_7\}, \{x_8\}, \{x_9\}, \{x_{10}\}\}$.

When calculating the attribute importance of a single attribute. First, $U/ind\{A - \{a_i\}\}$ is calculated to get the positive domain U which is obtained by dividing the other attributes into the domain $pos_{ind\{A-\{a_i\}\}}$ after one attribute is removed. Secondly, the attribute importance of a single attribute is calculated according to the formulas of attribute dependency and attribute importance given by definitions 3 and 4.

(1) After removing attribute a_1, we get the following partition results,

$U/ind\{A - \{a_1\}\} =$
$\{\{x_1\}, \{x_2\}, \{x_3\}, \{x_4\}, \{x_5, x_8, x_9\}, \{x_6\}, \{x_7\}, \{x_{10}\}\}$.

Then the positive domain is partition as follows,

$pos_{ind\{A-\{a_1\}\}}(U) =$
$\{\{x_1\}, \{x_2\}, \{x_3\}, \{x_4\}, \{x_7\}, \{x_6\}, \{x_{10}\}\}$.

Therefore, the dependency and importance of attribute a_1 are as follows,

$\gamma_{ind(A-\{a_1\})}(U) = \frac{|pos_{ind(A-\{a_1\})}(U)|}{|U|} = \frac{7}{10}$.

$sig(a_1, A) = \gamma_{ind(A)}(A) - \gamma_{ind(A-\{a_1\})}(A) = 1 - \frac{7}{10} = \frac{3}{10}$.

(2) After removing attribute a_2, we get the following partition results

$U/ind\{A - \{a_2\}\} =$
$\{\{x_1\}, \{x_2\}, \{x_3\}, \{x_4\}, \{x_5\}, \{x_6\}, \{x_7\}, \{x_8\}, \{x_9\}, \{x_{10}\}\}$.

We have

$pos_{ind\{A-\{a_2\}\}}(U) = pos_{ind\{A\}}$.

Therefore, the dependency and importance of attribute a_2 are as follows,

$\gamma_{ind(A-\{a_2\})}(U) = \frac{|pos_{ind(A-\{a_2\})}(U)|}{|U|} = 1$.

$sig(a_2, A) = \gamma_{ind(A)}(A) - \gamma_{ind(A-\{a_2\})}(A) = 1 - 1 = 0$.

Similarly, we can conclude that the importance of a_3, a_4, a_5, a_6 is $\frac{2}{10}, 0, \frac{2}{10}, 0$.

Obviously, we have $sig(a_2) = sig(a_4) = sig(a_6) = 0$. we can reduce the unnecessary attribute a_2, a_4, a_6.

Step4: Construct granular space. The attribute set of new information system S' is $A' = \{x_1, x_3, x_5\}$. Attribute a_1, a_3, a_5 consists of seven different attribute subsets, i.e. $A_1 = \{a_1\}, A_2 = \{a_3\}, A_3 = \{a_5\}, A_4 = \{a_1, a_3\}, A_5 = \{a_1, a_5\}, A_6 = \{a_3, a_5\}, A_7 = \{a_1, a_3, a_5\}$. Different attributes partition the domain differently, and the reduced attributes are used to partition the domain to construct a multi-granularity hierarchical granular space. The granular layers formed by different attribute sets are as follows,

$\pi_{A_1} = U/R_1 = \{\{x_1, x_2, x_8, x_{10}\}, \{x_3, x_7\}, \{x_4, x_5, x_6, x_9\}\}$;

$\pi_{A_2} = U/R_2 = \{\{x_1, x_2, x_3, x_4, x_5, x_8, x_9\}, \{x_6, x_{10}\}, \{x_7\}\}$;

$\pi_{A_3} = U/R_3 = \{\{x_1, x_4, x_6, x_7\}, \{x_2, x_5, x_8, x_9\}, \{x_3, x_{10}\}\}$;

$\pi_{A_4} = U/R_4 =$
$\{\{x_4, x_5, x_9\}, \{x_1, x_2, x_8\}, \{x_3\}, \{x_6\}, \{x_7\}, \{x_{10}\}\}$;

$\pi_{A_5} = U/R_5 =$
$\{\{x_2, x_8\}, \{x_4, x_6\}, \{x_5, x_9\}, \{x_1\}, \{x_3\}, \{x_7\}, \{x_{10}\}\}$;

$\pi_{A_6} = U/R_6 =$
$\{\{x_1, x_4\}, \{x_2, x_5, x_8, x_9\}, \{x_6\}, \{x_7\}, \{x_3\}, \{x_{10}\}\}$;

$\pi_{A_7} =$
$U/R_7 = \{\{x_2, x_8\}, \{x_5, x_9\}, \{x_1\}, \{x_3\}, \{x_4\}, \{x_6\}, \{x_7\}, \{x_{10}\}\}$.

So the constructed granular space is $G - V = \{\pi_{A_1}, \pi_{A_2}, \pi_{A_3}, \pi_{A_4}, \pi_{A_5}, \pi_{A_6}, \pi_{A_7}\}$.

Step5: Assuming that the problem needs to be solved on the granular layer π_5 divided by attribute set A_5, the solution range can be determined by quotient space fidelity principle. So the solution range can be determined by quotient space true-preserving principle. That is to find the optimal approximate granular layer in the granular layer partition by attribute subset A_1, A_2, A_3, A_4, A_6 as equivalence relation.

Step6: The weights of a_1, a_3, a_5 calculated by formula (3) are as follows,

$\omega_{a_1} = \frac{sig(a_1, A)}{\sum_{i=1,3,5} sig(a_i, A)} = \frac{3}{7}, \omega_{a_3} = \frac{2}{7}, \omega_{a_5} = \frac{2}{7}$.

Step7: According to the approximate measurement formula of granular layer (8), the weight difference f_{π_i} between attribute set of target layer and attribute set of approximate layer is calculated.

The attribute set of target layer is A_5, and that of approximation layer is A_1. According to the approximate measurement formula of granular layer, we get the following results,

$f_{\pi_1} = \frac{\sum_{a_k \in A_5} \omega_{a_k} - \sum_{a_k \in A_1} \omega_{a_k}}{\sum_{k=1,3,5} \omega_{a_k}} = \frac{(3/7 + 2/7) - 3/7}{3/7 + 2/7 + 2/7} = \frac{2}{7}$.

Similarly, taking A_2, A_3, A_4, A_6 as the attribute set of approximation layer, the similarity can be obtained according to the approximate measurement formula of granular layer as follows:

$f_{\pi_2} = \frac{\sum_{a_k \in A_5} \omega_{a_k} - \sum_{a_k \in A_2} \omega_{a_k}}{\sum_{k=1,3,5} \omega_{a_k}} = \frac{(3/7 + 2/7) - 2/7}{3/7 + 2/7 + 2/7} = \frac{3}{7}$.

$f_{\pi_3} = \frac{\sum_{a_k \in A_5} \omega_{a_k} - \sum_{a_k \in A_3} \omega_{a_k}}{\sum_{k=1,3,5} \omega_{a_k}} = \frac{(3/7 + 2/7) - 2/7}{3/7 + 2/7 + 2/7} = \frac{3}{7}$.

$f_{\pi_4} = \frac{\sum_{a_k \in A_5} \omega_{a_k} - \sum_{a_k \in A_4} \omega_{a_k}}{\sum_{k=1,3,5} \omega_{a_k}} = \frac{(3/7 + 2/7) - (3/7 + 2/7)}{3/7 + 2/7 + 2/7} = 0$.

$f_{\pi_6} = \frac{\sum_{a_k \in A_5} \omega_{a_k} - \sum_{a_k \in A_6} \omega_{a_k}}{\sum_{k=1,3,5} \omega_{a_k}} = \frac{(3/7 + 2/7) - (2/7 + 2/7)}{3/7 + 2/7 + 2/7} = \frac{1}{7}$.

So, $f_{\pi_*} = min\{f_{\pi_1}, f_{\pi_2}, f_{\pi_3}, f_{\pi_4}, f_{\pi_5}\} = f_{\pi_4} = 0$.

That is to say, the granular layer with the highest approximation to the solution of known layer π_5 is located in the granular layer π_4 formed by the partition of attribute subset $A_4 = \{a_1, a_3\}$. Therefore, the optimal approximate solution can be obtained on π_{A_4}.

5. CONCLUSIONS

In this paper, we use the idea of granular computing to solve complex problems and rough set theory, and partition the domain according to the attributes to form a multi-granularity problem solving space. In the granular space *G-V*, the similarity between the target layer and the approximation layer is measured by attribute weight. The optimal approximation granular layer measurement formula is given, and the optimal approximation solution model of the granular space problem is established. The model calculates the difference between the attributes of each granular layer in the granular space and that of the known problem-solving granular layer, and obtains the optimal approximate solution granular layer of the problem. At the same time, it also realizes the mutual transformation of the optimal solution in the granular space.

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Fuzzy Clustering Analysis of the Technical Influence of Asian Good Lead Players

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Abstract: Shot is always one of important Asian sports events, while Asian shot level also internationally attracts great attention. To vigorously carry forward Asian shot advantages and constantly get good results in international competitions, fuzzy clustering analysis is made targeted at Asian shot technical influence factors and main influence factors are found. Three main factors affect shot throwing distance are shot throwing height, angle and velocity, of which initial qualitative analysis is made. And then Asian shot putters' own characteristics as lower throwing height and smaller strength than that of Europeans and Americans are systematically analyzed. Regarding shot as a mass point, it is firstly supposed that landing point and throwing point are on the same horizontal line; utilize Newtonian mechanics and related physics knowledge to make force analysis of shot. By establishing above model, relevant reasonable suggestions are presented on how to enable shot putters to get good results in competitions, and technical guidance is then provided for the development of Asian shot.
Keywords: Fuzzy Clustering Analysis; Throwing Model; Force Analysis

1. INTRODUCTION

As one of Olympic Games events, shot a key competition event for all countries internationally. With the advancement of society and rapidly development of science and technology, competitions concerning competitive sports events have been increasingly fierce. Internationally, main countries focus on the development of show and no exception for Asia. It is well-known that Europe and America are powers in shot by virtue of their physical quality's advantage. However, as science and technology constantly being applied in sports research, sports technology is therefore constantly promoted that makes up for inherent shortage of body. With the constantly development of sports undertakings, Asian shot has been popular due to its fixed forms, and study of Asian shot also attracted attention (Dai 2012, Zhen 2015). Asian shot influence factors should be specifically analyzed in its study so that reliable and practical instructive conclusion could be specific got. Therefore, the process that moves Asian shot towards success should be done by finding training process and rules consistent with the special characteristics from numerous factors and continuously studying and exploring these main factors (Wang and Wei 2005, Li and Liv 2011). It is urgently needed to establish corresponding shot simulated theoretical model, and lots of sports researchers are needed to provide scientific and reliable theoretical basis for athlete training and selection by virtue of all kinds of research results, and then perfect system will be formed and evidence be provided to let training and competition more scientific, improve training direction and emphasis to shorten gap and constantly improve and develop Asian shot level. Only then Asian shot can have sustained development and catch up with international advanced level.

2. MODEL ESTABLISHMENT

Fuzzy clustering is a method that according to data after standardization, and makes classification according to data relations and quantity sizes, it is generally applicable to correlated factors to make combination and further gather into a cluster.

2.1 Fuzzy clustering analysis method

Basic thought of fuzzy relations equivalent fuzzy clustering analysis method is: Regard domain of discourse set U and $U \times U$ fuzzy subset as fuzzy equivalent relation $\underset{\sim}{R}$. Decompose fuzzy equivalent relation $\underset{\sim}{R}$, and get cut set thereof λ, and equivalent relations among U and cut set λ $(U \times U)$'s subset $\underset{\sim}{R}_\lambda$, by which classification of all elements in U is reached. When cut set λ of $\underset{\sim}{R}$ values from 1 to 0, object element classification as well as classified objects' dynamic cluster tree diagram can be reached. Establish fuzzy cluster-based equivalent relation. In order to establish object classification, set U relation $\underset{\sim}{R}^*$, generally we need to firstly calculate each classified object similarity statistics. $\underset{\sim}{R}$ is fuzzy similarity relation, representing classified objects relations in set U. r_{ij} is each classification object similarity statistics. And computational method of r_{ij} is as following:

Fuzzy similarity relation $\underset{\sim}{R}$ can be converted into fuzzy equivalent relation $\underset{\sim}{R}^*$ by computing. Covert fuzzy similarity relation $\underset{\sim}{R}$ into equivalent relation $\underset{\sim}{R}^*$, the computation process is as following:
$\underset{\sim}{R}^2 = \underset{\sim}{R}o\underset{\sim}{R}; \underset{\sim}{R}^4 = \underset{\sim}{R}^2o\underset{\sim}{R}^2$; $\underset{\sim}{R}^{2k} = \underset{\sim}{R}^ko\underset{\sim}{R}^k = \underset{\sim}{R}^k$ Therefore, $\underset{\sim}{R}^* = \underset{\sim}{R}^k$ is equivalent relation.

2.2 Fuzzy cluster analysis method

(1) Factor set determination
U is a factor set: $U = \{u_1, u_2, \dots u_n\}$, In formula, each u_i is factor that may affect judged object result.
(2) Single factor fuzzy evaluation
Factor set has i pieces of factor $u_i (1,2 \dots, m)$ and needs to be correspondingly evaluated, $u_i (1,2 \dots, m)$ remark set has j pieces of element x_j with membership $r_{ij} (j =$

$1,2, \ldots, n$), the influential judgment set of the i element u_i is $r_i = (r_{i1}, r_{i2}, \ldots r_{in})$.

(3) Fuzzy comprehensive evaluation

In judgment matrix R_i : R_i line i reflects the influence level of i factor on evaluated object membership; R_i Column j represents the influence level of all factors on all evaluation affiliated j remark set. When weight set W and evaluation matrix R_i exist, evaluate by applying fuzzy comprehensive evaluation method.

In formula "•"represents specific function operator. A_i is the evaluation matrix of the i criterion layer evaluation indicator on remark.

(4) Weight set establishment

Different factors' influence u_i defined weight value as w_i, forming weight set W. Apply analytic hierarchy process to determine weights of different influence factors to different indicators.

$W = \{W_1, W_2, \ldots, W_i\}$ $W_i = \{W_{i_1}, W_{i_2}, \ldots, W_{im}\}$

Constraint conditions of weight number per layer is: $\sum_{n=1}^{n} w_i = 1, \ w_i \geq 0$

Maximum fuzzy spanning tree is T_{max}. The significance of T_{max} is:① it has no circuit, since it is a tree;② it is G corresponding fuzzy spanning tree;③T_{max} is surely G maximum fuzzy spanning tree.

During maximum fuzzy spanning tree fuzzy clustering analysis process, its concrete operation is : select aλ value as a cut set, to maximum fuzzy spanning treeT_{max}, edges that isn't above λ breaks here, let connected each point to compose a cluster, each element classification of$U$can be reached by equivalent relations. when R cut setλvalues from 1to 0 here, object element classification as well as classified objects' dynamic cluster tree diagram can be reached. List out flow chart.

3. INFLUENCE FACTORS ANALYSIS

Shot can be regarded as a mass point due to its big mass, small volume and relative smaller initial speed, and air resistance can be ignored.

(1) Landing point is in the same horizontal level with throwing point without air resistance influence.

By $L = \frac{v^2 \sin 2\alpha}{g}$, it is clear that L is in direct proportion to square of v that is when v increase by one time, L would increase square times, so$v$ is primary factor that determines L.On the other hand, when maximum sine function value arrives, $\alpha = \frac{\pi}{4}$, then when α is equal to 45 degree, L will be the largest.

(2) Landing point is not in the same horizontal line with throwing point without air resistance influence.
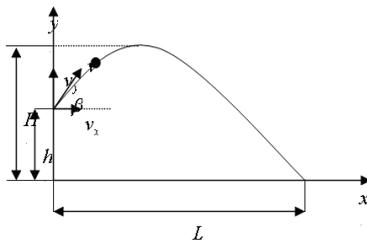

Fig.1. Shot force analysis

Shot force analysis is the same as model one. Therefore, its vertical accelerated speed $a = -g$ m·s^{-2}, it takes

uniform motion horizontally, and uniformly variable motion vertically, therefore its trajectory is as shown in Fig 1.

3.1 Best projection angle

According to common height of Asian sports athletes, assume that the throwing height is between 1.75-2.10m, throwing shot speed is between 13.2-14.2m·s^{-1}, $g = 9.8$ m·s^{-2}. Programming by MATLAB, and graphic relations between L andβ (horizontal axis is β, and define its value range as$(0, \pi/3)$, vertical coordinate is$L$), take throwing height and speed two limit values respectively. Throwing speed v used in Figure 3 is 13.2 m·s^{-1}, and throwing height h is 1.75 m, then conclude maximum projection distance $L = 19.442$ m, correspondingβ is turned into angle as 40.19 degree; Therefore, to get good results, throwing angle β should be best taken actual value around 41degree.

3.2 Best initial height

By searching data, given that the throwing angle is 41 degree, throwing shot speed is between 13.7m·s^{-1}, $g = 9.8$ m·s^{-2}.By MATLAB order, graphic relations between L and h can be concluded (horizontal axis is h, vertical coordinate is L). It gets Fig.2 as following shown: L and h have progressive increase relations as following (Since h coefficient is extremely small, considering the throwing height will less than or equal to 2.5m, $L$is nearly in linear with$h$ at h intervals).
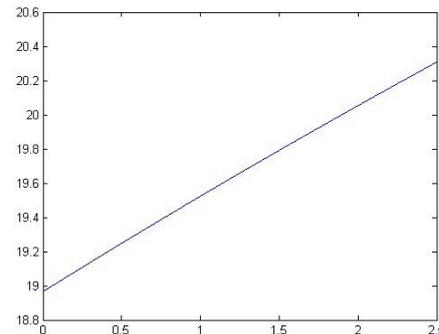

Fig.2. Initial height and projection distance

3.3 Best initial speed

By searching data, given that the throwing angle is 41 degree, throwing height is2.0m.By MATLAB, graphic relations between L and h can be concluded (horizontal axis is h, vertical coordinate is L). It gets Fig.3 as following shown: L is in quadratic progressive increase with$v$.
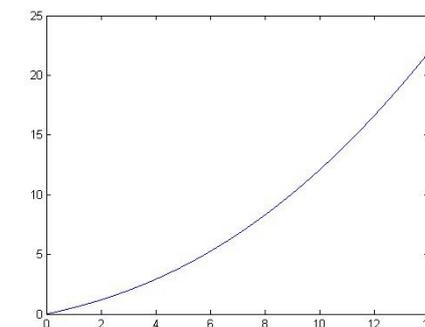

Fig.3. Throwing speed and projection distance

3.4 Solution of best throwing angle

45degree is usually thought to be best throwing angle, however, the required best throwing angle should less than 45 degrees to get desired furthest projection distance due to throwing height influence. By analyzing Asian excellent shot putters' data, establish regression equation of throwing angle and speed: $v = 19.45 - 0.152\alpha$. And Asian excellent shot putters' throwing angle range is thought to be $37°\sim39°$ .With the formula and in accordance with data, it calculates Asian shot putters' best throwing angle. Athlete throwing height is varying from 1.76~2.11m, however, throwing heights influences haven't been considered. It is found by comparing calculated best throwing angle with actual one, data formula fitting results is poor in 1.76~1.99m throwing height, while good in 2.00~2.11m. In order to get more accurate fitting formula, curve fitting method is utilized, partial data is extracted from 1.76~1.99m and 2.00~2.11m two heights frames respectively to fit due to special conditions exist. And get following formula

$v = -0.04307\alpha^2 + 3.052\alpha - 40.29, \ H \in [1.76,1.99]$
$v = -0.01676\alpha^2 + 1.216\alpha - 8.418, \ H \in [2.00,2.11]$

Take throwing initial speed as variable and fit equation regarding throwing angle, and draw scattering diagram of throwing speed and angle, Its fitted equation: y=-47.7794*x^3+1994.6*x^2+-27749*x+130000.

4. CONCLUSION

Fuzzy clustering analysis is made targeted at Asian shot technical influence factors and main influence factors are found. Three main factors affect shot throwing distance are shot throwing height, angle and velocity, of which initial qualitative analysis is made. And then Asian shot putters' own characteristics as lower throwing height and smaller strength than that of Europeans and Americans are systematically analyzed. Analysis shows that different regions' shot putters own physical conditions such as height, explosive power and other influence factors are different in shot throwing; throwing heights of different athletes are therefore different that causes motion parabola changing on the original basis. If shot flight process main influential factors change, changes directly occur in shot flight results. Mechanical analysis is made on shot throwing process and throwing distance influential factors are reached that is v, αandH as well as their specific scale relations. Finally, by practical Asian excellent shot putter' throwing data analysis and curve fitting, it reaches best throwing angle's solution equation, and best shot showing techniques for Asian shot putters. The influence of throwing speed v on throwing distance L is larger than that of throwing height H on throwing angle α, these three aspects can be ignore when training. Throwing speed v, throwing height H and throwing angle α are independent from each other, while v and α are mutual restrained so that the two should take into comprehensive consideration when training athletes. About the effect of throwing height on throwing distance, it is controllable by selecting athletes as higher as possible, but since its effect on throwing distance is smaller, no need to so strictly control the height. Asian shot putters' performances can be improved by scientific technical analysis and training to provide scientific evidence for Asian shot scientific training and guiding.

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Research on The School's National Defense Education Under the New Era

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Abstract: The cause of socialism with Chinese characteristics has entered a new era, which is a brand-new era, but also faced with severe challenges and great opportunities of the era. National defense education in schools needs to keep up with the pace of The Times, study China's reality, face China's future, and make correct new achievements. Articles from four aspects to the new era of university defense education in our country are analyzed, and argues that the leadership of the party is the "soul" of school national defence education, grasp the "new age" is "this" of the school's defense education, adhere to the socialist direction is the "light" of school national defence education, service "Chinese dream" is the "god" of school national defence education.
Key words: Party leadership; New era; Socialist Chinese dream; National defense education

1. INTRODUCTION

The Fifth Plenary Session of the 19th CPC Central Committee put forward the long-term goal of realizing socialist modernization, which means that the cause of socialism with Chinese characteristics has entered a new era, which is an era of both opportunities and challenges. National defense education in China's schools will also enter a new era. National defense education, an important part of national defense construction and national education, is conducted by the state to enhance citizens' awareness of national defense and enhance their ability of national defense behavior.

2. ADHERING TO THE PARTY'S LEADERSHIP IS THE SOUL OF NATIONAL DEFENSE EDUCATION IN SCHOOLS

The Fifth Plenary Session of the 19th CPC Central Committee ushered in a new step of modernization. Practice has proved that the leadership of the Communist Party of China is the most essential feature of socialism with Chinese characteristics. Adhere to the leadership of the Party is tantamount to grasping the "soul" of national defense education in schools, and thus having "essence, qi and spirit".

2.1 Correct understanding of the absolute leadership of the Party over the army is an important prerequisite for the development of national defense education in schools

2.1.1 The absolute leadership of the Party over the army is a historical choice. In modern times, the Chinese nation suffered humiliation and torment. In the history of humiliation, the sons and daughters of the Chinese nation constantly struggled to find the truth and path to save the country and the people, and went through countless hardships and hardships. A modern history of China is a history of humiliation of the Chinese nation, and a history of resistance of the Chinese nation. In such a long process,

we have experienced many hardships, vicissitudes of life. I vividly recall the great impact of the two Opium Wars, the tragic ending of the Taiping Heavenly Kingdom Uprising, the blood and tears of the Boxer Rebellion, the cruel reality of the First Sino-Japanese War, the wild plunder of the Eight-Power Allied Forces, the hardships and hardships of the War of Resistance Against Japanese Aggression, and the chaos of the Civil War. In such a long process, the Chinese sons and daughters after thousands of hardships to seek the way to save the country and save the people, in the success and failure of groping, the Communist Party of China came into being, after thousands of hardships, to save the people in fire and water, the creation of theory in the revolutionary practice, the new country in danger, the Chinese nation has a new life.

2.1.2 The absolute leadership of the Party over the army is a realistic need. After the birth of new China, the Communist Party of China began a new journey, to explore the road of socialist construction suitable for the reality of China. "Crossing the river by feeling the stones" became the true description of this great process of exploration. Generations of Communists, under the leadership of generations of leaders, led the Chinese children to begin the remarkable and difficult process of exploration, and guided the cause of socialist construction in China to grow in difficulties, in the growth of obstacles, the cause of socialist development has made great achievements attracting worldwide attention. From the establishment of the socialist system to the establishment of the road of society with Chinese characteristics on the right track, from the entry of socialism with Chinese characteristics for a new era to the great rejuvenation of the Chinese nation, all these require the Party's absolute leadership over the armed forces and the guarantee of the hard-won achievements in socialist construction.

2.1.3 The absolute leadership of the Party over the army is an important prerequisite for doing a good job of national defense education in schools. In essence, insisting on the absolute leadership of the Party over the army requires insisting on the absolute leadership of the Party over the national defense education in schools. Schools at all levels and of all types must carry out national defense education unswervingly in the course of daily education and teaching. They must not limit or refuse to carry out national defense education because of the pressure of entering a higher school, the limit of class hours, and the concept of understanding. They must earnestly implement national defense education in accordance with the relevant provisions of the Party and the state, and ensure the quality and quantity of national defense education. It has been made clear that the Chairman of the CMC assumes overall

responsibility for the Party's work and political work in the armed forces, which reflects the practical needs of the CMC's responsibility for exercising Party supervision and self-governance after the military reform.

National defense education in schools is a common understanding in the process of China's socialist national defense construction and also a common practice of major countries in the world. National defense education is an important foundation for the sustained development of the country's military force, and also an important basic work for the broad masses of people to correctly understand national defense, integrate into national defense practically and devote themselves to national defense actively.

2.2 Reflecting the leadership of the Party earnestly in the work of national defense education is an important guarantee for the continuous breakthrough in the work of national defense education in schools

Insisting on the absolute leadership of the Party to the army needs to be embodied in the school national defense education, which is an important guarantee for the school national defense education to break the existing dilemma and make continuous breakthroughs. The absolute leadership of the CPC over the army has always been a glorious tradition of the CPC, which has played a leading role and achieved remarkable achievements in the history of the development of the PLA over the past 90 years. On April 28, 2001 in China by the national defense education law of the People's Republic of China, on December 6, 2006 by the national defense mobilization commission of the promulgation of "the outline of the national defense education", in 2019, the national defense mobilization jointly formulated and issued by the central military commission, the Ministry of Education of ordinary colleges and universities military lessons teaching outline and other legal norms and file all clear, university defense education is under the leadership of the party committee of the national defense education work, must be in strict accordance with the specification in the process of implementation of national defense education, from the institutional setup, staffing to work rules are clearly defined. Play a role of party members and cadres leading demonstration in jiangxi, martyrs memorial day, the national symbol of day and day, leading cadres at all levels to go into the red base reaction to revolutionary martyrs, the norm for red classics, read do red red letter, various studies activities such as exhibitions, taking the red line, the challenge in the beginner's mind, continue to carry forward the tradition of key lead, play a key role, by the national defense education implementation of the ground.

3. GRASPING THE "NEW ERA" IS THE "BASIS" OF NATIONAL DEFENSE EDUCATION IN SCHOOLS

19 the fifth plenary session pointed out that "the world today is undergoing great change from the one hundred, a new round of technological revolution and industrial revolution is developing in depth, and the international balance of power profound adjustment, the era of peace and development remain the theme, the human fate community concept is deeply rooted in the hearts of the people, at the same time, international environment has become increasingly complex, obviously increase the instability and uncertainty." At present and for a period to come, China's development is still in an important period of strategic opportunities, but both opportunities and challenges have new developments and changes. This is an era different from any previous era, so national defense education in schools needs to study and grasp the "new era". Based on the reality of China, keeping up with the pulse of The Times and keeping up with the pace of The Times, this is the "foundation" of national defense education in our school.

3.1 China's development has entered a new era, and national defense education in schools must recognize and grasp this era

The whole party to global strategy of the great rejuvenation of the Chinese nation and the world as a whole from the big change in one hundred, deep understanding of Chinese social principal contradiction change brings new features of the new requirements, deep understanding the complex international environment brings new challenges of new contradictions, strengthen the consciousness of opportunity and risk awareness, based on the primary stage of socialism basic national conditions, maintain strategic concentration, do a good job in their own things, recognize and grasp the law of development, carry forward the fighting spirit, sets up the bottom line of thinking, accurate strain, initiating change, change, the scientific knowledge education opportunities in the crisis, open new office in change, seize the opportunity, challenge, advantage and, forge ahead.

This is a "you and me of the new era", our motherland has a new atmosphere, new vitality, new as, our school national defense education work also needs to have a new atmosphere, new vitality, new as, for our country's national defense and military construction to make new contributions. The work of school national defense education is only on the basis of correct understanding and grasping the new era, studying a series of rules in the process of school national defense education seriously, summing up a series of deficiencies in the process of school national defense education seriously, so as to have a definite object in view and show a new state in the new era.

3.2 China faces new challenges in its development, and national defense education in schools must meet and deal with these challenges

In the journey on the road to the great revival of the Chinese nation, with the continuous development of the country, we have encountered resistance and pressure is bound to be increasing, we could be in for a friend, may also hinder the development of our competitors, in the face of our good state of development, how to choose our rivals, will produce different influence and effect to us, we must be fully realized in the process of the development of these situations, and be well prepared.

National defense education in schools is an important basic work in the course of China's great rejuvenation and bears the important responsibility of training a new generation of high-quality construction personnel. National defense educators in schools need to seriously

study a series of challenges in the process of China's development, and conduct a profound and rational analysis of the challenges, so as to guide the majority of young students in China to correctly understand the various situations and challenges faced in the process of China's development, and to correctly deal with various related problems. The courage to meet the challenges, the correct handling of the challenges, this is the new era given to the school national defense education workers arduous and great task, is the great rejuvenation of the Chinese nation, the construction of a strong national defense and a strong army of the inevitable requirements.

3.3 The world situation reflects a new pattern, and national defense education in schools must be positive and integrated into this pattern

With a wave of science and technology further, the world situation changes faster, involving all fields such as economy, science and technology, military, reflect new pattern of world situation, the school national defense education work must be positive and blend in the pattern, make our national defense education with world vision to integrate into the world, develop national pillars just with world vision. From the perspective of the national defense education, the adjustment of the world mainly from military security, power Angle such as strategy, China is the world's major powers, how to face such a world situation changes fast, how to handle the relationship between the various complex lifting, relationship to the orientation and development trend in China in the new world pattern.

National defense education in schools needs to explore while working in educational practice, study the world pattern in educational practice, grasp the world pattern in educational practice, innovate working methods in educational practice, so that the work remains distinct Chinese characteristics, so that the education content is in line with the world, and the work effect is leading in the world.

4. STICKING TO THE SOCIALIST DIRECTION IS THE "LIGHT" OF NATIONAL DEFENSE EDUCATION IN SCHOOLS

"China is good, the world is better", adhere to the direction of socialism with Chinese characteristics, is the inevitable choice to realize the great rejuvenation of the Chinese nation, and is the inevitable requirement of sinicization of marxism in, adhere to the socialist direction makes the university defense education have intrinsic motivation, the socialist direction is the "light" of school national defence education.

4.1 Adhering to Marxism is the theoretical source of national defense education in schools

The latest achievements in adapting Marxism to China's conditions fully reflect the new ideas, new thinking and new strategies for governance put forward by the CPC Central Committee since the 18th National Congress of the CPC, as well as the new experience gained from upholding and strengthening the leadership of the CPC and comprehensively governing the Party with strict discipline. The sinicization of marxist theory has achieved fruitful theoretical results and guided China's revolution

and construction to achieve one great achievement after another.

The history of the continuous advancement of the achievements of the sinicization of Marxism is also the history of the continuous growth of China's national defense and army. Mao Zedong Thought guided us to win the great War of Resistance against Japanese Aggression and the Civil Revolutionary War, and guided us to embark on the road of socialist construction. Our people's army grew from nothing and from weakness to strength. The development of Marxism in China is also China's contribution to the world in practice, contributing Chinese wisdom and Chinese solutions to human problems, and forming China's theoretical achievements.

The national defense education work in schools needs to adhere to Marxism, which makes the national defense education work in our country obtain continuous development power, and promotes the national defense education work in our schools to go deeper and deeper.

4.2 Building socialist national defense with Chinese characteristics is an important direction of national defense education in schools

Socialism with Chinese characteristics is a new and great cause, including every aspect of China's socialist cause. The cause of socialism in China requires the development of various undertakings, including the culture of socialism with Chinese characteristics, the road of socialism with Chinese characteristics, the theoretical system of socialism with Chinese characteristics, and the system of socialism with Chinese characteristics. In the process of socialist construction, national defense is an important guarantee for the all-round development and promotion of socialist cause, and the construction of socialist national defense with Chinese characteristics is also an important direction of national defense education in schools. The promotion of national defense education in schools needs the actual situation of the new era of socialist construction in our country, grasp the development trend of the new era of socialism, and make contributions to the cause of socialist construction with Chinese characteristics.

5. SERVING THE "CHINESE DREAM" IS THE "GOD" OF NATIONAL DEFENSE EDUCATION IN SCHOOLS

National defense education is based on the reality of the country, escorting China and serving the people. The "Chinese Dream" is not only the dream of the motherland, but also the dream of all the people in the country. Under the guidance of the socialist ideology with Chinese characteristics, national defense education in schools should serve the "Chinese Dream" and escort the great rejuvenation of the Chinese nation.

5.1 Based on China's reality

To study China's reality and solve China's problems, we need to base ourselves on China's reality. It is because we pay attention to the study and analysis of China's actual situation that we have made one great achievement after another. In the development of social programs with Chinese characteristics, we need to enhance the people's sense of gain, strengthen and make innovations in social governance, adhere to the overall approach to national

security, and enhance the awareness that lucent waters and lush mountains are invaluable assets. National defense education in schools should be based on the reality of our country, so that people can fully feel the country's strong, reliable and stable in study, life and work, so that they can work together to contribute to the cause of socialism with Chinese characteristics. Under the strong leadership of the CPC Central Committee, national defense educators, with the original aspiration and persistence of "the great affairs of the country", the glory and dream of "the great responsibility of heaven", and the responsibility of "leaving me to whom I am", have been rowing boats and setting sail to achieve the Chinese dream of the great rejuvenation of the Chinese nation, gathering great strength.

5.2 Looking into China's future

Realizing the "Two Centenary Goals" and realizing the Chinese Dream of great national renewal are also the "dream of a strong army" that ensures the continuous progress and development of China's national defense and armed forces. China's modernization includes the modernization of national defense, and the great rejuvenation of the Chinese nation must have a world-class national defense capability. Our "Chinese dream" is "China dream" for the future of China, the "China dream" gives us hope, also give us confidence and motivation, school national defense education work need to seize the rare opportunity, in the process of dream constantly promote the overall progress of the national defense education work, innovative school national defense education work methods, make the university defense education work is full of vigor and vitality.

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The Enlightenment of Positive Psychology to Mental Health Education in Colleges and Universities

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Abstract: Emotion and motivation in positive psychology will affect people's living habits, and then promote people's happiness. Introducing the theory of positive psychology into the work of mental health education in Colleges and universities can enable college students to have a correct understanding and in-depth cognition of mental health education, and then cultivate students' positive ideological quality, so that they can better study and live after they have good psychological quality. This paper analyzes and discusses the Enlightenment of positive psychology on mental health education in Colleges and universities for reference.
Key words: Positive psychology; University; Mental health education; Enlightenment

1. INTRODUCTION

Positive psychology is the category of psychological research, mainly for some psychological diseases or negative psychological problems to implement effective solutions, so it has an important role in people's spiritual life, and strengthens the collaborative relationship between people's inner activities and ideological quality. Positive psychology emphasizes that people have some potential power in daily life, and this power can drive people to use positive attitude and way to solve problems, and then produce a sense of happiness in the process.

2. THE IMPORTANCE OF POSITIVE PSYCHOLOGY TO COLLEGE MENTAL HEALTH EDUCATION.

At present, the rapid development of society has brought about certain changes in students' ideas, and some students will have a wrong understanding, which will eventually affect their own core values, but also affect their ideological quality. The purpose of mental health education in Colleges and universities is to adjust the mentality of students, change their wrong understanding, and improve their unhealthy mental state. Therefore, for students with inner problems, teachers need to correctly understand the psychological problems and show patience. And this kind of teaching idea will affect students' inner activities, not only can not effectively deal with students' psychological problems, but also increase students' psychological burden, so it will affect students' mental health.

Positive psychology is applied to the teaching of mental health education in Colleges and universities, which makes teachers have a correct understanding of mental health education, and can realize that stimulating students' potential and guiding students to have a positive and optimistic attitude is the main purpose of mental health education in Colleges and universities, and also the teaching requirements. Therefore, it is necessary to carry out effective intervention for students' mental health problems, stimulate students' good ideological quality, and let students have a positive and optimistic attitude towards study and life [1].

3. THE SPECIFIC STRATEGIES OF APPLYING POSITIVE PSYCHOLOGY IN COLLEGE MENTAL HEALTH EDUCATION

3.1 Organic combination of positive psychology and mental health education in Colleges and Universities

When setting up mental health courses in Colleges and universities, we should integrate the theoretical knowledge related to psychology into the teaching work, and introduce the concept of positive psychology, apply psychological counseling, psychological education and other ways to effectively implement the concept of psychology into the teaching work of mental health, so as to affect the direction of College Students' values.

First of all, setting up mental health courses is an important way to implement mental health education. Teachers need to use positive psychology theory in the specific teaching process, and also pay attention to cultivating students' positive ideological quality, positive learning motivation, positive inner feelings and positive inner state, so as to ensure that students have positive moral character;

Secondly, in the process of mental health teaching, teachers need to strengthen the psychological guidance for students, so they can use positive emotions to implement psychological guidance, so that students can be infected by teachers' positive ideology and behavior, and then teachers can face problems together with students with psychological problems;

In addition, we should actively guide students to carry out self-evaluation, guide students to have good self-confidence, cultivate students' good personality, let students correctly understand themselves, so that they can recognize their role, so the application of positive emotions can tap students' potential, adjust students' psychological state, and then students can actively and objectively evaluate themselves.

Through the analysis of this problem, we can know that the guidance of positive psychology plays a significant role in shaping students' inner world and strengthening their mental health, which is also very critical and important [2].

3.2 The purpose of mental health education is to make students have a positive ideological understanding

Colleges and universities need to realize the close relationship between mental health and students' Ideological and moral quality in carrying out mental health education and teaching, and realize the importance of students' positive ideological understanding. The application and implementation of positive psychology can help students produce positive and correct ideas, temper their positive and optimistic spirit, and exercise their strong willpower. Only in this way can students have good ideological qualities such as optimistic and cheerful, which are very important for their study and life. The application and implementation of positive psychology concept in mental health education and teaching can deeply tap students' potential, cultivate students' good ideology and morality, so that students can have good social quality of kindness, tolerance and responsibility, so that students' Outlook on life, world outlook and values can be established, and students' good ideology can be infected To everyone around, and then help to establish a harmonious and healthy social environment. As a teacher, we need to apply positive teaching attitude and teaching concept to treat every student, pay attention to, care about and care for every student's study and life, so that students can have a good sense of identity, and then help to cultivate students' good self-confidence and self-esteem. When students encounter difficulties or confusion, they can adjust their own mentality, which achieves the goal of psychological health The purpose of health education [3]. For example, when some students enter colleges and universities to study, because the pace of learning and life in Colleges and universities is relatively slow, and the environment is relatively loose and open, some students are prone to slack off, will not actively study and improve their ability, and will waste a lot of time on meaningless things, so precious student time will be wasted And the quality of study and life of students are also seriously affected. As a teacher, the purpose of education and teaching is to cultivate students' good learning and life ability, and guide them to a better level of learning and life. However, if students can't cherish their good time, improve their self-worth, and actively face their learning and life, it will affect their life. And the application and implementation of positive psychology theory can cultivate students' positive attitude, and students have a good self-improvement, so that students can correctly understand the value of the current time, and then cherish the time, seize the opportunity, study hard, optimistic life, and will also be useful to the society to work hard, to struggle, to enhance self-worth.

4. CONCLUSION

In a word, in the process of carrying out mental health education in Colleges and universities, colleges and universities need to recognize the importance of students' psychological problems and the impact on students' study and life, and this problem has become a common problem in society, and also a problem of concern to the public. Therefore, it is necessary to cultivate healthy and all-round high-level talents as the main teaching goal, create a good learning and living environment for students, and shape a healthy and complete personality and personality, so that students can actively face the future study and life, adapt to the development of society, and then make important contributions to society.

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Practical Research on Teaching Reform of Fruit and Vegetable Processing Technology Course in Higher Vocational Colleges

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Abstract: According to the characteristics of "fruit and vegetable processing technology" course, this paper analyzes and discusses the problems existing in the teaching reform of this course in the Department of food science of Gansu Animal Husbandry Engineering Vocational and technical college. From the aspects of teaching content, teaching methods, experimental practice and training teaching, curriculum assessment, the reform and practice are carried out in order to improve the students' learning interest, skill operation level, innovation consciousness and comprehensive quality, and cultivate qualified skilled students by improving the curriculum system and optimizing teaching methods.
Key words: Fruit and vegetable processing technology; Teaching reform; Experiment; Training; practice

1. INTRODUCTION

Fruit and vegetable processing technology is a compulsory course for food specialty in Gansu animal husbandry vocational and technical college. It mainly describes the characteristics, processing principles and technical methods of fruit and vegetable raw materials. It is a course with strong practicality and applicability [1]. Since 2015, the Department of food science of our college has actively carried out the apprenticeship pilot work, successively established "Weilong class" and "Master Kang class", and carried out teaching reform on the main courses. This paper analyzes the characteristics of the course and the problems in the reform process, and puts forward the reform implementation measures, in order to improve the teaching quality of teachers, students' interest in learning, and cultivate new skilled talents with solid theoretical knowledge, skilled skills and strong innovation consciousness.

2. COURSE FEATURES

Fruit and vegetable processing technology is an interdisciplinary subject, involving food chemistry, food machinery, food microbiology, engineering principles and other courses. There are many knowledge points, and the processing characteristics of different fruit and vegetable raw materials are quite different. To learn this course well, students must master the basic fruit and vegetable processing technology through systematic classroom experiment, internship week and factory post training.

3. ANALYSIS OF LEARNING SITUATION

There are three types of students in Gansu Animal Husbandry Engineering Vocational and Technical College: unified enrollment of college entrance examination, promotion and exemption of students, and transfer of secondary vocational students, of which secondary vocational students account for about 50%. At present, the situation of students in other vocational colleges in China is basically similar. Most of these students have bad learning attitude, poor learning ability, low learning enthusiasm, low self-esteem and other characteristics. Moreover, they have poor basic knowledge, can't learn and use flexibly, can't integrate knowledge with practice, and can't use knowledge as a whole.

4. EXISTING PROBLEMS

4.1 Outdated teaching content

At present, most of the textbooks are old wine in new bottles, and the content is outdated, which can not well reflect the actual production environment. There is no processing technology of local characteristic products, which is not conducive to students' innovation and entrepreneurship.

4.2 Factory post training

Factory post training adopts the form of signing contracts with relevant food enterprises (Xizhilang, Huangyanghe food company, Master Kang, etc.) to provide internship positions, which mainly focus on workshop process, without clear master, the enthusiasm of enterprises to participate in training is poor, the enterprises can not retain talents, and the real meaning of win-win is not achieved.

4.3 Teachers have little practical experience in factories

Teachers have less practical experience, in the process of teaching, it is mainly laboratory and theoretical knowledge, resulting in students to the internship factory, poor adaptability, unable to quickly get familiar with the working environment of the factory and their own work.

5. PRELIMINARY STUDY ON THE IMPLEMENTATION PLAN OF INNOVATIVE TEACHING REFORM

After five years of curriculum reform exploration, following the needs of enterprises, the following reform measures can effectively improve students' interest in learning, exercise their practical ability and improve their skills.

5.1 Optimize and innovate the teaching content. Aiming at the problem that some students with poor foundation can't master the relevant knowledge systematically, according to the experience of five years of reform, and in order to better serve the needs of local and relevant contracted enterprises, the teaching content is further optimized, as shown in Table 1. Focus on the processing

of Gansu characteristic products such as apple, potato and so on, and carry out systematic explanation and repeated experiments, innovate teaching methods, take students as the center, carry out comprehensive training and cultivation of students in basic knowledge and skills,

classroom ideological and political education, innovation and entrepreneurship, professional quality and so on. To provide basic technical support for self-employed students, other products use the Internet, papers and other ways of self-study.

Table 1 teaching content of fruit and vegetable processing technology innovation

Learning tasks	Learning points	Class hours	Learning situation
Basic knowledge of fruits and vegetables	The concept, classification and characteristics of fruits and vegetables; chemical composition and processing characteristics of fruits and vegetables; principles and methods of quality identification of raw materials	Theory 2 Experiment 4	Identify the quality of fruits and vegetables purchased from the market
Quick freezing technology	The development history of quick-frozen (classroom ideological and Political Education),concept and characteristics; quick-frozen principle, general process flow of quick-frozen fruits and vegetables processing, operation points, precautions and equipment	Theory 2 Experiment 2	To investigate the advantages and disadvantages of quick-frozen fruits and vegetables on sale in the market, to make quick-frozen potato chips and analyze them
Drying technology	The development history and characteristics of drying; drying principle, general process flow, operation points, precautions and equipment	Theory 2 Experiment 2	Investigate the advantages and disadvantages of dried fruits and vegetables on sale in the market, make dehydrated vegetables and analyze them
Pickling technology	The development history and characteristics of pickled fruits and vegetables; pickled principle (sugar, salt), pickled fruits and vegetables processing general process, operation points, precautions, equipment	Theory 2 Experiment 4	Make pickles and analyze them; Make jam and analyze
Can processing technology	The development history of canned food (patriotic and persistent classroom ideological and Political Education), characteristics, concepts, classification, principles, general process flow, operation points, precautions and equipment of canned food processing	Theory 4 Experiment 4	Can vegetables and analyze them Can fruit and analyze
Processing technology of fruit juice (powder)	Development history (doing safe food, innovating classroom ideological and Political Education), characteristics, concepts, classification; juice (powder) processing general process, operation points, precautions, equipment	Theory 2 Experiment 4	Investigate the advantages and disadvantages of juice (powder) products on sale in the market, make different juice and analyze
Innovation and entrepreneurship practice 3-5 people in a group	The students write the opening report, write the experiment plan and purchase the raw materials; Teachers identify, guide and modify the feasibility of the experimental scheme; Teachers and students jointly determine the experimental scheme, and students independently make experimental products;	1 week	Group independent production of fruit and vegetable processing products, writing innovation and entrepreneurship plan, and exchange learning
Enterprise internship	Enterprise tutors study product processing technology and equipment use;Cultivation and learning of professional quality	4 week	Enterprise practice study

5.2 Optimizing teaching methods

Break the old model of Teacher centered, student-centered, do and talk in the laboratory, hand in hand to teach students practical skills. For students with different foundation, step teaching, group learning, competition to promote teaching, competition to promote learning. Use the Internet to create course microblog and upload courseware, micro video and other professional knowledge, so as to facilitate students to access information and make them want to learn at any time [2].

5.3 Optimize the experimental practice and training, and actively carry out the double teacher system

For the students who are going to enter the factory internship, we will carry out strict pre job training in the school, actively carry out the "double teacher" system, and further deepen the joint training with food processing enterprises. In the school, teachers will explain the theoretical knowledge; during the internship, the professional skills training of factory production system is mainly carried out by the masters of enterprises, so as to cultivate skilled talents suitable for enterprises [3] - [6].

In addition, referring to Germany's "dual system", Singapore Nanyang Institute of technology's "training workshop" and other relatively perfect concepts of

vocational education at home and abroad [7] - [11], the "fruit and vegetable processing" interest group and product exhibition area were established to build an entrepreneurial platform for students who like the course and have entrepreneurial passion. The products (fresh juice, canned, jelly, etc.) made in the laboratory will be sold on campus, and the students will be guided by professional teachers to innovate products and stimulate their awareness of entrepreneurship and innovation. We actively encourage sophomores to participate in the innovation and entrepreneurship competition. Our students have won many awards in Gansu University Students' innovation and entrepreneurship competition. In 2017-2020, our college has set up nearly 20 innovation and entrepreneurship training projects in Gansu Province, and won many provincial and municipal awards.

5.4 Strengthen teachers' skill training

For professional teachers, on the one hand, they should carry out skill training, especially factory practice, no less than one month a year, and regularly carry out practical operation skills competition to improve their skill level; on the other hand, they should strengthen exchanges and cooperation with brother schools to learn from each other and make common progress.

5.5 Optimization assessment

5.5.1 Change the original closed book examination to open book examination, diversify the examination questions, reduce the simple memory content, increase the score of subjective questions and experimental questions, and comprehensively investigate the students' learning situation.

5.5.2 Adjust the score structure: the total score structure is adjusted to (theory 20%, skill 50%, normal 20%, self-evaluation 10%), skill score structure (experimental report 20%, normal 20%, operation skill 60%). Students' self-evaluation will also be included in the performance structure to improve students' self-management and evaluation ability.

5.5.3 The students who win the provincial competition of innovation and entrepreneurship can be given the incentive mechanism of full score of skills.

5.5.4 In the production season of the enterprise, for example, students and teachers go to Gansu Weilong wine company for factory internship from October to November every year to solve the problem of labor shortage in the factory, improve the comprehensive ability and achieve a win-win situation.

6. CONCLUSION

Teaching reform requires teachers to constantly explore and practice, students to form good learning habits from entering the school, and the strong support of the school. On the one hand, we hope to increase the investment in laboratory construction, fully open to students, and continue to increase the support for innovation and Entrepreneurship of food majors. On the other hand, it actively cooperates with local enterprises in Gansu Province to establish an effective incentive mechanism and improve the enthusiasm of enterprise participation. For example, in the production season of food enterprises, students are allowed to participate in the production process to solve the employment pressure of enterprises; the government reduces some taxes according to the number of students cultivated by enterprises. We should better implement the "double teacher" system, explore the "apprenticeship system" under the new situation, and strive to provide more learning and training opportunities for students. Teachers should also pay attention to their own knowledge cultivation, skill training, teaching according to the actual situation of students, improve the quality of teaching, and cultivate qualified skilled talents with strong innovation ability, serious work and strong food safety awareness.

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Research on College Students' Mental Health Education in The New Media Environment

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Abstract: With the rapid development of information technology in China, the teaching methods of many subjects have undergone great changes, especially in the application of new media technology in relevant education departments, which has attracted the attention of all walks of life, teachers and schools. The mental health education of college students has always been an important problem for college psychological teachers, because college students who are already adults must have a healthy psychology, so that they can make better progress in their future work, life and study. In this paper, the author analyzes the promotion of College Students' mental health education in the new media environment, and expounds the implementation countermeasures of College Students' mental health education in the new media environment.
Key words: New media; College students; Mental health; Education; Research

1. INTRODUCTION

Due to the rapid development of information technology and the widespread popularity of intelligent devices in China, almost every college student in the new world is equipped with electronic devices. It has become a trend for college students to obtain information about life and learning through the network. Because of the rapid development of new media technology, the way that students obtain and disseminate information through intelligent devices is also presented in the form of media. To a certain extent, this way facilitates the students to exchange information across time and space, which also improves more ideas for the current college education. However, in terms of the current form of education, many colleges and universities do not attach importance to the connection between new media education and school mental health education. Some schools believe that new media can not help schools carry out education work, and they define new media as a thing that harms college students' learning. Although the current college students' learning and growth are basically accompanied by new media, new media also brings new ways to college students' life, entertainment and learning, which will inevitably affect their ideas. Therefore, when colleges and universities carry out new media teaching, we should let students give full play to the unique characteristics of new media, and make use of the advantages of new media, such as flexibility, changeability and interaction, to effectively improve the degree of College Students' mental health education.

2. CHARACTERISTICS OF NEW MEDIA

2.1 Characteristics of immediacy

The mobile phone Kwai tiktok is the fastest growing media compared to the traditional media. Because the APP platform of WeChat, micro-blog, jitter, and fast hands has brought people more access to information and information. Many content is immediately reported, and there is no information dissemination process. In addition, due to the limitation of communicators, anyone can effectively disseminate information. It can be said that the emergence of new media technology has also set off a new revolution in information dissemination, making information dissemination no longer subject to the restrictions of regular dissemination and dissemination units, thus becoming a mode of dissemination that ignores time and space.

2.2 Characteristics of interactivity

The interactivity of new media is generally accepted by many media people. Because in the new media era, people will have two identities, one is the receiver of information, the other is the disseminator of information. The use of these two identities interweaves people and the Internet, so that the breadth and depth of Internet information dissemination are gradually strengthened.

2.3 Characteristics of super spatiotemporal

At present, due to the information dissemination of communication satellites and the Internet, the new media has broken the obstacles brought by the previous administrative regions and special terrain [1]. And the Internet itself carries a lot of information content, so as long as the information is not removed, no matter how long the time is, it will not hinder the access to information, and this kind of super space-time special is also the most powerful advantage of the current characteristics of new media.

3. EFFECTIVE STRATEGIES OF COLLEGE STUDENTS' MENTAL HEALTH EDUCATION IN THE NEW MEDIA ENVIRONMENT

3.1 Interactive teaching mode

There are three ways to carry out mental health education in the university stage, one is to teach the textbook knowledge, the other is to train the mental health, and the last is to experience the mental health. But in the implementation of these three aspects, first of all, the mental health teachers at the university stage need to have a clear understanding of the personality characteristics and actual requirements of college students in the new environment, and make targeted teaching plans through these contents, for example, to stimulate students' learning of the course by assigning personalized chemistry tasks, so as to realize the teaching idea of teaching students in accordance with their aptitude [2]. Secondly, teachers need to strengthen the combination of online and offline teaching, and set targeted theme content in the process of mental health teaching, which will not only increase college students' online discussion on mental health

course, but also shorten the giant wheel between teachers and students through humorous, interesting and joyful teaching style, so as to realize the effective release of students' inner emotions The completion of the teaching task of physical health is of great help. Therefore, through this interactive teaching mode, students can not only learn, understand and master mental health knowledge in the process of interactive communication, but also increase the opportunities for college students to practice.

3.2 Application of reading resources

The rational use of reading resources in mental health teaching, and the application of these contents to the actual mental health education, can not only effectively avoid the idleness of College Students' reading resources, but also play a role in deepening the content of mental health education, so as to promote college students to better complete the work of psychological education. For example, with the rapid development of smart phones, the way of E-reading has been widely concerned, and in this environment, people also begin to pay more attention to reading, and through intelligent devices, people can read in their daily spare time. Therefore, the mental health teachers at the university stage can choose reading resources for students to help them improve their mental health, and improve the teaching objectives of College Students' mental health through relevant mental health education contents. At the same time, they can also help college students develop good reading habits [3]. According to the relevant psychological research, people's emotions will have a serious impact on intelligence, because relaxed and happy situation can not only improve the enthusiasm and efficiency of work and study, but also promote the improvement of understanding ability. On the contrary, if the mood is too low, then the efficiency of work and study will not be very high.

4. THE ESTABLISHMENT OF MICRO GROUP

Micro group is an important way of social networking, which is also the abbreviation of micro blog social group. Through micro group, we can promote the exchange of information and ideas between people, which is also a new media technology in the new era. Moreover, the establishment of micro group has the characteristics of topic collection, information synchronization and multimodality, which is of great help to the extended learning of university students. Therefore, teachers can create a micro group of mental health courses for college students. By guiding students to release, exchange and transfer mental health knowledge in the group, this can not only realize the exchange of opinions between teachers and students, but also enable teachers to master students' living conditions in time. In addition, the effective use of micro group is also inseparable from the support of people of the same age, experience, hobbies and so on. Therefore, through micro group, the mental health education at the university stage can be better developed.

5. CONCLUSION

To sum up, in this paper, the author analyzes the characteristics of timeliness, interactivity and transcending time and space of new media in the new era, and expounds the application of interactive teaching mode, the application of intelligent reading resources and the establishment of micro group of College Students' mental health education in the new media environment, hoping that the mental health teachers at the university stage can bring help.

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Analysis of Postgraduate Online Teaching Mode under the Situation of COVID-19

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Abstract: Curriculum teaching is an important part of postgraduate training. The epidemic situation of New Coronavirus pneumonia has brought great challenges and new opportunities for reform. This paper mainly analyzes the management system guarantee, teaching mode change, existing problems and curriculum ideological and political elements of graduate online teaching, and summarizes the changes of graduate teaching mode under the epidemic situation, so as to promote the improvement of research and training quality.
Key words: COVID-19; Postgraduate; Online teaching; Analysis

1. INTRODUCTION

At the National Graduate Education Conference, General secretary Xi Jinping has made important instructions for postgraduate education: postgraduate cultivation should adapt to the development of the party and the country, cultivate a large number of high-level talents with both ability and political integrity. Graduate education shoulders the important mission of high-level personnel training and innovation, is an important cornerstone of national development and social progress. Postgraduate training should implement the fundamental task of moral education, take improving the quality of postgraduate education as the core, focus on intension-type development, and continuously promote the reform of talent training mode. COVID-19, this war of gunpowder, has challenged the postgraduate training, online teaching bears the brunt. According to the spirit of the epidemic prevention and control documents, university departments took various measures to implement the online teaching of graduate students during the epidemic period by using the online platform. Cloud teaching not only solves the problems brought by the epidemic, but also enables us to "turn the dull into the beneficial" and pay more attention to the mode and system of postgraduate course teaching

2. SYSTEM AND ORGANIZATION GUARANTEE OF POSTGRADUATE ONLINE TEACHING

Under the epidemic situation, online training does not mean loose, the online teaching of graduate students needs exact system and organization guarantee. Especially in the post epidemic situation, the training unit should to continue to do a good job in epidemic prevention and control, at the same time, should pay attention to the students who can or can't go back to school. Fully grasp the students' ideological trends, mental state, learning trends, and the problems they encounter. Fully investigate the opinions of graduate course teacher, combined with the characteristics of the discipline, the training unit should formulate the norms and requirements for postgraduate online teaching, and give practical suggestions for course teaching

At the same time, we should pay attention to the collection of teaching feedback, accumulate experience, summarize and adjust in time, and have a matching evaluation and incentive mechanism. On the whole, from the management level, postgraduate online teaching should gradually change from rigid management to flexible management, from standard management to more personalized and flexible management

3. REFLECTIONS ON ONLINE TEACHING MODE

First of all, online teaching cannot be "one size fits all" for graduate courses. In the process of lesson preparation, teaching mode and teaching method, the teachers in charge of the course and the teaching team should be required to refine the teaching requirements. Classified guidance to promote online teaching. At the same time, teachers should pay attention to the learning progress and feedback of the students in time, improve the teaching plan, besides the teaching content, should arrange the course bibliography, answer questions in teaching discussion and homework.

In the online teaching, teachers should improve the teaching design ability, design appropriate links, such as classroom quiz, interactive question and answer, mobilize students' enthusiasm and participation in the classroom, at the same time, they can integrate and use rich network teaching resources, such as video, image, audio to improve the knowledge base of the course. In addition, the knowledge imparting of online teaching should be changed from "hard" indoctrination to "soft" construction of teachers and students, so as to cultivate and lead students to learn to use the network to screen the required knowledge in the information age, master, discover, and build their own knowledge base from the big data streams. In terms of teaching evaluation, online teaching is more open and personalized, which requires that the assessment of the course can no longer be the traditional single knowledge memory assessment, but should pay more attention to examine students from the level of understanding, so as to promote students' initiative of thinking and understanding.

4. ADVANTAGES AND DISADVANTAGES OF ONLINE TEACHING FOR POSTGRADUATES

Online teaching has many advantages, such as: integrating the existing teaching resources; promoting teachers to update the design of existing teaching programs; improving the flexibility of the course, helping students overcome fear of interaction, narrowing the teaching distance between teachers and students, increasing the interaction between teachers and students; conducive to the supervision and management of teaching order. All these are conducive to the improvement of classroom

teaching quality. Online teaching across the boundaries of time and space, so that students can look back on what they don't understand, and teachers can check what needs to be improved in classroom teaching. To a certain extent, online teaching has changed the past experiential teaching into enlightening learning, which is no longer a simple learning knowledge, and is more conducive to promoting the connotative improvement of postgraduates.

But at the same time, online teaching does not have the advantage of emotional interaction of face-to-face communication in traditional classroom. Students are distributed in different learning environments, so it is not easy to produce collective learning atmosphere, and it is easy to produce self-learning loneliness and burnout. In addition, in the live teaching, facing the screen, the teacher's teaching passion is not as good as the offline classroom, and it is difficult to master the students' knowledge acceptance. At the same time, in the classroom discipline control, there are also aspects that need to be considered. How to better reflect the fairness and difference of online teaching course assessment, and how to reflect the real learning level of students, this also puts forward new requirements. In online teaching, because of the convenience of the network, teachers will increase the amount of homework after class, but for graduate students, many courses are carried out at the same time, which will cause graduate students to be tired of consulting materials. In addition, network problems and educational differences are also problems in online teaching.

On the whole, in the epidemic period, the use of online teaching mode can enrich graduate teaching methods, promote the reform of the existing curriculum system, improve the use of existing high-quality teaching resources, improve and innovate the curriculum assessment system and form, and provide a new way of teaching quality supervision.

5. INVESTIGATE AND SURVEY ON POSTGRADUATE ONLINE TEACHING

Table 1. Main problems of online course learning for Postgraduates

Serial number	Difficulty	Proportion
1	low efficiency of class attendance	44.2%
2	difficulty in completing homework	16.8%
3	inconvenience in communicating with teachers after class	15.5%
4	difficulty in understanding the content	12.2%

During the epidemic period, taking the author's College as an example, the questionnaire "survey on home-based learning of graduate students " was issued to all graduate students in the college, with the main purpose of understanding the problems encountered in the process of home-based online learning of graduate students. Through the 360 questionnaires collected, it is found that the difficulties of online course learning for postgraduates are mainly concentrated in the following aspects: low efficiency of class attendance, difficulty in completing homework, inconvenience in communicating with teachers after class, and difficulty in understanding the

content (Table 1).

To solve these problems, we give some practical suggestions to graduate students:

Low efficiency of class attendance: make a personal schedule and stick to the good habit of taking classes at school, such as entering the class 10 minutes in advance, putting away the electronic equipment except for the class, closing the door, etc.; force yourself to take notes, sort out the key points of knowledge, and improve the learning efficiency in the process of taking notes; actively speak or ask questions in the interactive part of class, and consciously improve the degree of active participation.

Difficulty in completing homework: shorten the deadline of homework, finish homework quickly within the specified time to avoid procrastination; establish online learning group, discuss the difficulties of the course in time, urge each other to finish homework, improve learning efficiency; find students or teaching assistants in the course group for discussion.

Inconvenience in communicating with teachers after class: if there is interactive Q&A time in class, it is best to ask the teacher questions in time, so that the teacher can reply most conveniently and quickly; After class, you can collect the questions you don't understand to the teaching assistant, and the teaching assistant will submit them to the teacher to facilitate the teacher's feedback. If the teacher provides courseware PPT, you can review it carefully after class and actively consult the relevant information, which not only consolidates the knowledge, but also improves the ability of autonomous learning.

At the same time, these problems are also fed back to the teachers. It is suggested to improve the classroom design, interaction and the amount of homework.

6. THE ADDITION OF IDEOLOGICAL AND POLITICAL ELEMENTS IN ONLINE TEACHING

The biggest characteristic of "curriculum ideological and political education" is that the whole curriculum runs through the important task of Ideological and political education, and at the same time, we should try to avoid generalization ideological and political education [2]. In addition to online course learning, postgraduates will also pay attention to various media reports on epidemic information, and have certain thinking about social system. Combining with the moving examples of various positive energy "war epidemic" during the epidemic period, it is more realistic and infectious than the traditional political classroom to guide the perceptual construction of graduate students' morality and personality from the perspective of current experience. This should be a very good form to be considered in the post epidemic era.

7. CONCLUSION

Don't be afraid of floating clouds to hide your eyes, turning bluntness into benefit, thinking and doing. After the hardening of the epidemic, while enjoying the advantages of online teaching, we should pay attention to the institutionalization and personalization of management. Knowledge should transfer from "hard" instillation to "soft" construction. The way of teaching assessment should also be transformed from single form to diversified assessment. In the era of "Internet plus", we

should pay attention to the addition of online ideological and political elements, and promote the cultivation of postgraduate's self-management ability. Finally, in the special period, these will enrich and improve the teaching quality of graduate courses.

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Research on The Docking Strategy of Talent Training and Industry Demand in Higher Vocational Colleges

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Abstract: The paper takes the post communication management major of Shijiazhuang Posts and Telecommunications technology college as an example. According to the characteristics of the postal industry, the social environment for postal enterprises to undertake the responsibility of vocational education is planted, and the path of talent training and research in Higher Vocational Colleges to meet the needs of the industry is proposed. This can promote vocational colleges and industry enterprises to form a community of destiny, realize the integration of industry and education, and comprehensively deepen the cooperation between schools and enterprises. At the same time, it can provide the basis for the establishment of high-quality people to people exchanges and cooperation between Vocational Colleges and industries.
Key words: Higher vocational education; Talent training; Industry demand

1. INTRODUCTION

In recent years, due to the recognition and attention of the state to higher vocational education, higher vocational education has developed rapidly, and trained a large number of skilled talents for the national economic development and all walks of life. However, with the high quality requirements of vocational education, there are some problems in the training objectives and training mode of higher vocational education, such as the low quality of vocational education, the poor connection between technical talents and industry, and the weak practical ability of teachers. Therefore, continuing to explore the problem of talent training and industry demand docking in vocational colleges is the current task of vocational education [1].

In January 2019, the "national vocational education reform implementation plan" issued by the State Council clearly states: vocational education and general education are two different types of education, which have the same important status [2]. This means that the talent training goal of higher vocational education is to meet the industrial needs of all walks of life and cultivate technical talents for enterprises. Therefore, the talent training of vocational colleges is closely related to the development of the industry. Vocational education not only needs vocational colleges to cultivate a new generation of industrial workers according to the foundation and characteristics, but also needs vocational colleges to connect with enterprises and cooperate deeply, so as to

form a talent training mode of school enterprise cooperation and realize the goal of vocational education [3].

2. RESEARCH PURPOSE

Vocational education not only opens a way to success for young people, but also provides a reserve of skilled talents for the society. Especially in the new era, China's vocational education has gradually entered a high-quality development stage. With the increasing demand for practical and skilled talents in society, the importance of vocational education is gradually rising. As a type of education closely linked with social economy, vocational education adheres to an important mission and responsibility in the process of promoting social development [4].

In this paper, the postal communication management major as the research object, its personnel training mode, and the postal industry bank enterprise school depth integration research. It provides a research basis for our vocational colleges to establish a scientific, reflect the characteristics of vocational education personnel training and industry demand docking [5].

First, through docking with the industry, higher vocational colleges cultivate skilled talents, which is an important way to promote the development of Higher Vocational Education in China. Through the analysis of typical cases, this paper finds out the deficiencies in talent cultivation, discusses the future construction direction and cooperative development, and puts forward the implementation of Solutions, which has practical significance. Second, this research can provide theoretical support and practical significance for the postal industry to cultivate skilled talents. Third, through this research, it can provide reference and guidance for other higher vocational colleges to further meet the needs of the industry and cultivate high-quality skilled talents.

3. TALENT TRAINING AND INDUSTRY DEMAND DOCKING STRATEGY

3.1 The school and enterprise jointly formulate the talent training plan

In depth enterprise research, improve personnel training program. Around the needs of postal enterprises for higher vocational education, according to the talent training concept of school enterprise cooperation and work study combination, we should make full use of the advantages of postal industry, and make effective use of various channels, such as double selection meeting, order type talent training seminar, postal enterprise staff training,

teachers' practice in enterprises and investigation in order enterprises.

Guided by "combination of work and study", enterprises participate in the whole process of talent training. Through the cooperation between school and enterprise, the post training base inside and outside the school will be established; the professional courses and teaching materials will be jointly built; the cooperation between school and enterprise will promote the in-depth development of production, learning and research; full-time teachers will deeply participate in the research of enterprise research, social practice and scientific research projects, and actively undertake the training courses and enterprise vocational skills appraisal; part-time teachers in enterprises will regularly give classes, lectures and lectures for students.

3.2 Jointly formulate, optimize and improve the curriculum system

The progressive professional curriculum system of "general courses, vocational ability courses and career development courses based on post production post group" has been optimized. In order to adapt to the development and changes of postal enterprises and post requirements, we should optimize and improve the professional curriculum system according to the structure of postal industry, closely track the actual requirements of the transformation and upgrading of postal enterprises, and timely adjust the teaching content and teaching methods in combination with the changes of talent demand and post responsibilities of postal enterprises.

Take the docking of "curriculum content and professional standards" as the main line, and actively promote the "integration of curriculum and certificate". Closely following the postal enterprises' transformation and upgrading needs, and applying the "Internet plus" education concept, based on the needs of post-production, sorting, delivery and other grass-roots production and management positions, the curriculum contents are linked to occupation standards such as postal salesmen, sorting agents, posters, etc., and actively promote the integration of class and certificate.

Table 1: Corresponding list of professional courses and vocational skill appraisal certificates

Accreditation certificate	Corresponding courses
Postal clerk	Postal business and management\ Postal business operation training
Postal sorter	Post organization management\ Post internal processing training
Postal salesman	Marketing theory and practice\ Postal sales skills
Postman	Postal business and management\ Practical training of postal delivery skills
Postal collector	Postal financial services Postal financial business training

3.3 Joint establishment of practice and training base

The construction of training base in school. Take the transformation and upgrading of postal enterprises as an opportunity to improve the informatization level of training environment inside and outside the school. Closely follow the rapid development of postal enterprises, according to the whole process of postal enterprise production and information construction, further improve the practical operation of professional school training base. Update the information system of postal production link in time to make the training environment in the school consistent with the actual production of the enterprise.

Construction of off campus training base. Make full use of the cooperation platform between the college and the post group company to strengthen the construction of off campus training base. We should strengthen the construction of off campus training bases of postal companies in 31 provinces (cities), strengthen the communication with off campus training bases, and strengthen the standardized management of off campus training bases. The off-campus training base includes 31 provincial and Municipal Postal companies and their subordinate city and County postal companies.

3.4 To form a team of teachers together

Relying on the advantages of the industry, the college has a rich source of part-time teachers. According to the needs, the enterprise backbone or enterprise leaders are employed irregularly to teach and guide the enterprise practice tasks for the students of this major; during the production practice and post practice, the practice unit arranges an employee for each student to guide the student's practice; through a variety of ways, the students can receive the direct guidance from the enterprise staff and backbone during the school period, so as to cultivate the students' professional ability Professional quality plays a great role in promoting.

4. CONCLUSION

This paper takes Shijiazhuang Polytechnic of Posts and Telecommunications as an example for in-depth research. It has a certain representativeness in the demand of talent training docking industry, but still looks forward to deeper cooperation and influence. Hope to establish a higher education department and Industry Enterprise Cooperation Dialogue, help to improve the current industry demand and college talent training docking is not smooth; look forward to more industry associations to participate in the industry demand research, provide the industry's latest dynamic talent training role; improve the relevant system of Vocational Colleges and industry cooperation, targeted training of enterprises, colleges and students Security mechanism.

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Study on the Index System of Study Travel Development Based on Hierarchy Evaluation Method

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Abstract: The advance in the research of primary and middle school students to learn the views of the travel demand, scientific evaluation of the students' studies, travel is the work of the school, the school should continue to explore the different dimensions of promoting students' development, at the same time, the school also on students' self-esteem and uniqueness of high tolerance, thus, to improve the student records management, and studies the comprehensive evaluation result gradually into the student management system.

Key words: Hierarchical Evaluation Method; Study Travel; Development Index; System

1. INTRODUCTION

The effect of the construction and implementation of the research travel course needs to be systematically summarized and evaluated to draw conclusions and be applied to the next round of course improvement and perfection. Studies of travel evaluation summary is an important link in the whole studies travel activity is indispensable, the whole research study topics of travel route design, learning content, link program, learning methods, teaching design, grind Gui topic selection, curriculum implementation, teaching feedback and so on each link of the specific implementation way, is all about the evaluation system of operation in the end. And this evaluation system is determined by grasping the growth rules of students and the educational orientation of study travel [1-5].

2. COMPREHENSIVE PRINCIPLE

The evaluation of curriculum planning, design, implementation process and implementation effect is an important evaluation content. Both the sponsor and the sponsor of the course are required to complete this assessment at the end of the course. Through the evaluation result of the course, the organizer can provide reference for the next course bidding, and provide the evaluation result to the organizer as the reference for the revision of the course. Through curriculum evaluation, the organizer on the one hand revises the curriculum, on the other hand accumulates curriculum design and implementation experience, and provides the basis for improvement work. If the course is designed by a third party entrusted by the organizer, the evaluation of the course by the organizer is also a test of the level and quality of the third party's course design. If there are previous contract terms concerning the quality of the course design, the evaluation result is also the basis for the implementation of the agreed project in the contract [6-11].

2.1 Diversity of evaluation subjects

Studies of travel multivariate evaluation subjects include students, students, teachers and parents to participate in the course of relevant personnel, according to the different needs of evaluation content, evaluation in different project to participate in the evaluation of different parts, through the study of the relevance of the evaluation data of plural comprehensive analysis, can more accurately describe the students' learning situation comprehensively, so as to form a more comprehensive development of curriculum implementation and student feedback. Multivariate subject evaluation can better avoid single.

2.2 Development index system based on research and study travel

It can mobilize the participation enthusiasm of the stakeholders of the study travel course, improve the consistency of educational objectives, and more conducive to promoting the development of students. The multi-subject evaluation is the need of promoting student development, teaching improvement and course improvement of the study travel course. The evaluation of any single subject is not conducive to the development of curriculum evaluation. Only when all participants of the course are involved in learning evaluation and can interact with each other, the evaluation results can be accepted and used by all parties to the greatest extent. Students pay attention to the evaluation results, can use the evaluation results to promote their own development; teachers' pay attention to the evaluation results, can use the evaluation results to promote the teaching improvement; Education companies or travel agencies and other curriculum implementation facilitators pay attention to the evaluation results, in order to use the evaluation results to improve curriculum implementation; Parents attach great importance to the evaluation results, so as to improve the family education support, better accord with school education, and promote the all-round development of students. The implementation of multivariate subject evaluation needs the cooperation of multivariate evaluation scheme. It should be noted that the evaluation behaviors of each subject are not completely independent, and may overlap or be independent of each other in the course of curriculum implementation. In the same evaluation behavior, there may be student evaluation, tutor evaluation, parent evaluation, etc.

3. SELECTION OF SPECIFIC INDICATORS

Selection of the indicators and the establishment of is in three phase four Zhu Hongqiu puts forward link travel

research learning curriculum pattern, on the basis of combining Peng Qibin travel by studies series and studies related literature complement to expand, to establish a set of suitable for studies of travel comprehensive evaluation index system, specific as follows: student evaluation is indispensable to travel research learning curriculum in the creation of important link, studies travel as an important part of the new comprehensive quality education, curriculum evaluation in many ways, multiple points of view, multimode to carry on the design. Curriculum is an important carrier of students' learning. To a certain course's role in the development of the students, curriculum design and implementation is reasonable, need scientific evaluation, this kind of scientific, on the one hand, should be set for the course objectives, content structure and implementation process of several links such as to evaluate the effect of: on the other hand, is more reflected in the student to accept the effect of the course and feedback information. Therefore, from the construction to the implementation of the curriculum, it is necessary to evaluate the overall effect of the curriculum, so as to constitute a complete course experiment process.

3.1 Evaluation of students

According to Taylor, curriculum evaluation, in essence, is to judge the extent to which the curriculum and teaching plan have achieved the educational objectives, which aim at making the students' behavior change as expected. The course evaluation is to determine how much change these behaviors have actually produced. It can be seen that the object of course evaluation is students first. The evaluation of students can be implemented in three stages: before class, during class and after class. The evaluation of students before class can be from whether students can prepare for the trip independently, and whether they have a clear understanding of the study travel activity arrangement and the learning objectives to be achieved;The evaluation of students in class can be carried out from four aspects, that is, whether students can abide by the team discipline and have good etiquette and norms during the research trip, and the communication and communication between teachers and classmates during the research trip.

Enthusiasm and concentration in the process of study travel; The evaluation of students' after-class learning should be based on the results of students' learning. The teaching and learning results of research travel course include two aspects: explicit results and internalized results. Extrusive results include text results, image results and production results. Internalization achievements include knowledge achievements, ability achievements, attitude achievements and behavior achievements.

3.2 Evaluation of the course itself

As a special tourism product, the evaluation of research travel course is also the evaluation of the product itself.It should include the following aspects, such as its own concept, specific implementation practice planning, course structure, selection and final determination of objectives and content. Whether the design of the study travel product is reasonable, whether it can be a system and whether it is scientific is the top priority of the

evaluation. Through the evaluation of the content structure of the course, to judge whether the course is systematic, the standard and rationality of the course needs to know how effective its implementation is, and the science of the course needs to be examined from the aspects of the content, purpose and concept of the course.

The evaluation of curriculum planning, design, implementation process and implementation effect is another important task for the research tutor team to complete. In the course of curriculum implementation, the evaluation of curriculum is based on the actual effect of curriculum implementation, which is different from the evaluation of the rationality and standardization of curriculum design in the bidding process. The organizer's evaluation of the course is an important reference for the termination of the agreement.

The evaluation of the course should be carried out from the following aspects:

(1) The typicality of route learning resources

Through the course implementation, judge whether the scenic spots selected by the route have regional typicality. During the evaluation, we should observe the representativeness and influence of course resources in their regions and types. According to the actual effect of course implementation, we should make the evaluation from many aspects, such as economic value, social value and academic value. Examine the thematic relevance of the learning resources. Whether the correlation between each learning resource and the course theme has been reflected in the actual teaching process, and whether the learning resources of the course route can meet the needs of students' diversified learning experience.

(2) Safety of line planning

Safety is the primary condition for the implementation of the study travel course. In the course of curriculum implementation, the curriculum safety evaluation should be carried out according to the safety incidents that have happened in the course of curriculum implementation. Whether safety incidents occurred during the course implementation, the severity of the incidents and the reasons for the incidents; Whether the safety precautions formulated in the course plan are consistent with the actual environment and conditions of the course implementation, whether they are targeted, and whether the safety precautions can play a role in preventing safety accidents; Whether the safety precautions are effective or not, and whether they play a role in the collective security guarantee in the course implementation; Whether the emergency plan has played a good role in dealing with emergencies, and whether the design process of the emergency plan is reasonable.

(3) Scientific rationality of the circuit

Hierarchical analysis to analyze the problem, should first turn on the level of specific layers, and then set up a electric level model, through the hierarchical model, the research question will be composed of several elements, these elements according to the logical relationship between layers, generally can be divided into the top, middle and bottom three kinds of concrete is divided into four steps, and analytic hierarchy process (AHP) is the

creation of ladder hierarchical structure model, respectively in their a judgment matrix in each layer: founded in hierarchical single ordering, total ordering and its consistency check respectively.3.3 Application of evaluation results

The comprehensive evaluation of research and study travel is carried out through the comprehensive development index system of research and study travel, and the results can provide effective feedback for each subject of a research and study travel. The rationality of time allocation: observe and record the allocation and connection of visiting and learning time and traveling time, and evaluate the rationality of time arrangement according to the actual effect in the course implementation process. The scientific nature of line physical distribution one by one observes the student's study performance, according to the student's physical consumption situation, analyzes whether the line design conforms to the student's physiological bearing ability, the line physical distribution is reasonable. Rationality and safety of route transportation - - according to the actual experience and students' feedback, the comfort and safety of route transportation are evaluated to determine whether the choice of transportation is reasonable.

The characteristics, comfort, economy and safety of the accommodation arrangements are evaluated through personal experience, safety inspection and student feedback. The evaluation of curriculum implementation process can be shown through the evaluation of the specific implementation effect in curriculum design. In the course of curriculum implementation, curriculum objectives, curriculum content, curriculum implementation and curriculum evaluation plan should be evaluated according to the curriculum implementation effect.

Comparing with the teaching objectives of curriculum design, observe whether they have been implemented in the course of curriculum implementation. Analyze how well the course objectives are achieved, and summarize the course objectives that have not been effectively achieved. The basic analysis and judgment should be made for the reason that the curriculum objectives are not achieved effectively, whether the setting of objectives is not reasonable or the level of curriculum implementation is not effective enough.

According to the implementation effect of the course, the content of the course is evaluated. Analyze and judge whether the course content is educational, appropriate and pluralistic. In addition, the course plan should be compared to determine whether the course has completed all the content of the study in the actual implementation process.

Comprehensively observe the implementation of the curriculum, and evaluate the safety, standardization, science and effectiveness of the curriculum implementation. The evaluation of the safety of curriculum implementation is mainly to evaluate the actual response of safety precautions, safety precautions and safety emergency plan to various related events in the course of curriculum implementation, and to analyze whether the relevant measures have played their due role. Should focus on the standardization of the curriculum implementation evaluation for research learning in the process of curriculum implementation mentor of understanding and organization of teaching evaluation: studies teacher whether fulfilled its education guidance and the responsibility of the organization management, especially in the guide students to deepen the understanding of curriculum, to carry out the relevant topic research whether Gui aspects play a proper role. The scientific evaluation of course implementation focuses on whether the related requirements of route planning accord with the actual situation in the actual implementation and whether there is room for optimization. On the one hand, the effectiveness of curriculum implementation should be evaluated based on the achievements of curriculum implementation; on the other hand, students can also be intuitively evaluated through questionnaire survey.

4. APPLICATION EXAMPLES OF RESEARCH TRAVEL DEVELOPMENT INDEX SYSTEM

The evaluation results of students can be used as the basis for the selection of excellent students. As a reference for the exhibition and evaluation of the achievements of the study travel; As the basis of credit identification. The evaluation result of the organizer, on the one hand, will serve as the basis to judge whether the contract signed by both parties has been well performed; on the other hand, it will determine whether the organizer has the opportunity to participate in the research activities of the school in the future. The school's use of the evaluation results: the evaluation results can provide a reference for the next course bidding; The evaluation results can be used as the reference conditions for the termination of the agreement with the organizer; The evaluation results will be provided to the organizer, the organizer according to the curriculum revision, etc.

The use of evaluation results by the organizer: the organizer revises the course according to the course evaluation; Accumulate the experience of curriculum design and implementation to provide the basis for improvement work; If the course is designed by a third party entrusted by the organizer, the evaluation of the course by the organizer is also the test of the level and quality of the third party's course design. If there are contract terms on the quality of course design in the commission agreement between the two parties, the evaluation result is also the basis for fulfilling the contract terms.

4.1 Development index system

According to the index system, using the method of the scale, through expert consulting method, questionnaire survey, in 2019 in July and August, contact invited eight experts in the field of research related to travel, from tourism related government departments, colleges and universities Gui tourism research, education and research Gui, and most closely with students of public and private schools teachers, and engaged in the studies of the travel industry line workers and managers, and then through WeChat and face to face in the form of the results of grading the internal discussion again and finally

summarized, finally two discriminant matrix are obtained.

5. CONCLUSION

Research implementers are divided into organizers and organizers, among which the school, as the organizer, should organize students' research, act as the intermediate link in the communication between parents and research organizers, and actively organize acceptance and summary after class. The organizer's management and service work include the management and service of students, the coordination and cooperation with the school's leading teachers, and the coordination and supervision of the supplier of research and study trips. Finally, the evaluation result of the course should also be an integral part of the evaluation result of the organizer. If the program offered by the contractor does not meet the requirements of a qualified program, the contractor's work is substandard on the most important development indicators.

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A Narrative Review on Unhealthy Body Image, Negative Outcome and Its Determinants in Young Adults

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Abstract: The face and body are the first impression; people always pay attention to them. More and more people are concerned about body image. However, the perception of body image varies among individuals and can also be influenced by the environment. The prevalence of social media and web celebrity has led people to compare their body image, and BMI, a measure of height and weight, has also had an impact on body image perception. Individuals may perceive underweight/overweight when perceiving body image. A distorted body image can lead to problems such as anxiety and depression, and eating disorders are also linked to body image perception. This narrative review is based on body image research in recent years, and summarizes the factors that threaten body image and the negative consequences of distorted body image.
Key Word: Body Image; Eating Disorder; Anxiety

I. INTRODUCTION

As a complex and multifaceted psychological construct, the body image is conceptualized. As a definition of body image, it is the subjective image of people, regardless of how their body appears of their own body. There are multiple components in the body picture, subdivided into two dimensions of vision and attitude. The components of vision are related to how we see our size, shape, weight, face, movement, and actions, while the components of attitude are related to how we feel about these characteristics and how these feelings influence our behavior. Body image has become a topic of increasing concern in recent years. Body image affects physical and mental health, and negative body beliefs may affect self-esteem, mood, ability, social functioning, and professional functioning (Chen et al., 2020). As a result, body image negative factors such as body dissatisfaction, a desire for thinness, slim ideal internalization, overweight concern, and body shame have been an impact on mental health.

Mental health is a macro concept that including many factors. In terms of body image, several studies have consistently indicated that several well-being indicators are positively associated with a healthy body image, including optimism, positive impact, self-compassion, life satisfaction, and subjective happiness.

It was widely assumed that body image dissatisfaction was primarily a Western World phenomenon, after turning to 21st century, non-White societies, these women may feel under pressure to meet beauty ideals that may deviate significantly from their ethnic characteristics. Asian cultures are reported to be extremely susceptible to dissatisfaction with body image and intervention. Women in these countries have embraced new standards of beauty that are very different from traditional features and include extremely thin bodies (Rongmuang et al., 2011). Women may be more likely to be affected by appearance expectations and experience more body dissatisfaction than men(Tang et al., 2020b), and the prevalence of body image and eating disturbances appear to be growing among adolescent and adult women in China(Zhang et al., 2018). In china, body image is a more significant indicator of mental and behavioral concerns in adolescents than obesity/overweight (Ren et al., 2018). As a country with a large population base, the importance of mental health is indispensable.

The purpose of this narrative review is to identify several factors related to body image and analyze how it is psychologically healthy, contributing to the prevention of psychological problems caused by body image.

II. THE REASON FOR DISORDERED BODY IMAGE PERCEPTION

Body image index and body image

Body mass index (BMI) is the method of defining body weight is also used to derive a healthy weight concerning height. BMI associated with body image satisfaction. one study that compared the obesity population and norm-weight population found BMI was negatively associated with appearance evaluation in both genders, the obesity population tends to be evaluated negatively by themselves (Weinberger & Luck-Sikorski, 2020). In the male sample, muscle and fat are the two factors that can predict body image satisfaction. Most men are dissatisfied with their current muscle mass and body fat and are at risk for body image dissatisfaction (Mackowiak et al., 2019). Most women reported being dissatisfied with their BMI. The relationship between body image and actual weight status has been documented in the literature to be different across cultures and countries, and results were barely different. One study in Europe (Jankauskiene & Baceviciene, 2019) indicated that a higher body mass index and those who overestimated body weight recorded higher body dissatisfaction, a thinness drive, anxiety of the social physique. People who feel uncomfortable with their BI are more likely to indulge in behaviors to combat discomfort. At the same time, some studies have contrasted the expectations of a person about their own BMI to their actual assessed BMI (Holliday & Mulekar, 2018). In general, there is a significant difference between actual BMI and perceived BMI. In a cross-sectional study, most participants were dissatisfied with their body image.

Women want to lose weight and eat to achieve their body image goals, while men want to gain weight and eat to exercise. However, half of the participants were considered normal in the BMI range, with only a small proportion classified as overweight or underweight. It can be seen that most people have a perception error (Radwan et al., 2019).

Perception of body mass index plays an important role in body image perception. The perception of a false body index is linked to a distorted body image. Young people who failed to perceive body index correctly are associated with a higher risk of body image distortion. Besides, there was a positive association with body image dissatisfaction in the overweight and underweight population-based on BMI classification of normal, overweight, and underweight.

Social media exposed and comparison

Another factor contributing to distorted body images is the rise of social media and the resulting body comparisons. Social media refers to online platforms like Instagram and Weibo, users create and share visual and textual information with others. With the popularity of social media, the relationship between media and body image has been investigated. A meta-analytic review of the positive relationship between social media use and body image disturbance was found (Saiphoo & Vahedi, 2019). There are two main phenomena on social media:1) The internalization of social expectations; 2) frequent social comparisons based on appearance. Perceived negative body image increased after viewing photos/comments of peers on social media, most interviewers compare their bodies and appearances based on the photos they are exposed to and the mainstream aesthetic of their users. Users compare themselves to idealized models on social media and received negative self-feedback, as a result of decreasing body satisfaction. Thinness was a driving force in the female sample, influenced by celebrity and the web celebrity effect. Although most of the studies focused on a sample of women. Men are also being influenced by social media to experience negative body images. Nearly 90% of undergraduate men in one study expressed the desire to become more muscular through weight training, in accordance to compared of Ideal body shape(Klimek et al., 2018).

In China, to date, some studies investigated the relationship between social media, physical comparison, and body image. The mediating platforms include family, peers, and media, and physical comparison and internalization of slim ideal play a mediating role in body dissatisfaction. Besides, DING et al., find out due to the high self-awareness of teenagers, it is easier to compare their height, weight, physical appearance, and so on with their peers, it reduced body image satisfaction, and lead to unhealthy weight loss behaviors(Ding et al., 2015).In one study (Wang et al., 2017), the research shows that the use of social networking sites harms women's body image cognition, emotional experience, and behavioral dimensions, mainly manifested in self-objectification, slimness pursuit, body dissatisfaction, body monitoring. The use of social media and the exposure of a single aesthetic culture in the media have led to an increase in body comparisons, resulting in perceived unhealthy body images.

III. THE NEGATIVE OUTCOME OF UNHEALTHY BODY IMAGE

Negative emotion experience

Due to the dissatisfaction of body shape/body size/appearance and so on, people who through body dissatisfaction have been experiencing the negative emotional outcome. Social anxiety, with increased reports of body image dissatisfaction in young adults (Barnes et al., 2020; Thomas et al., 2020). More specifically, social appearance anxiety has been highlighting related to body image perception, this is a group of people who feel social anxiety because of their body image. It focuses on fears evoked from being evaluated by others on one's overall appearance, one study based on china revealing that those who displayed concern with their facial appearance had a higher level of social anxiety. Most people with social appearance anxiety evaluate body image as unrealistic and negative. Mohammadpour & Mohammadi (2021) indicated that preoccupation with body image can predict the development of social anxiety. For people who receive themselves as overweight, there is more possibility to get body dissatisfaction and social anxiety symptom.

Besides, failure to achieve acceptable body image outcomes can lead to depression and lower self-esteem. The negative body image was evaluated, which pointed out a negative perception of one's body leads to low self-esteem and resulting in social anxiety (Sudhir & Delma, 2018). As everyone knows, self-esteem is associated with confidence. During the perceived process, the negative perception decrease confidence, which makes people lose self-esteem. In one word, as one factor of negative emotional experience outcome, self-esteem needs to be cautious.

Moreover, depression is another outcome that has been reported in recent research filed. The increased prevalence of depression is correlated with biased BMI and body image beliefs. The increased occurrence of depression is associated with particular weight management strategies as well, such as fasting, skipping a meal, and reducing food intake (Silva et al., 2019). Underweight women, driven by the drive to be thin, had a higher risk of depression than obese women. This is because underweight people have a higher sense of stress and a lower ability to withstand setbacks. The body image information received also affects the severity of depression. Skipping meals because of weight is associated with the highest rates of major depression (Silva et al., 2019). It is important to note that, unlike other negative outcomes, depression factors are bi-directional. Some studies have shown that depression can also cause negative and distorted body image perceptions, with depressed people biased toward negative images (Cruz-Sáez et al., 2020; Lipson & Sonneville, 2020).

Negative behavior outcome

Distorted and negative body images not only lead to emotional problems such as anxiety, low self-esteem, and depression but also cause substantial behavioral harm.

Eating behaviors related to body image have been extensively studied. Many people who internalize the thin ideal that is media-sponsored may be more likely to perceive a gap between their appearance and the thin ideal. To decrease the disparity and reach the slim ideal, this internalization results in body dissatisfaction and attempts to lose weight (Rosewall et al., 2018). As a result of losing weight, there is an increased incidence of irrational eating behaviors, which can lead to eating disorders. nowadays, eating disorders (EDs) and are important health concerns. Eating disorders, which include symptoms such as binge eating, Anorexia nervosa (AN), or Bulimia nervosa (BN) which take a toll on the body (Lewer, Bauer, Hartmann & Vocks, 2017). Also, body dissatisfaction is affected by intimate, interpersonal, cultural, and ethnic factors, and is a major risk factor for ED as well (Griffen, Naumann & Hildebrandt, 2018).

IV. DISCUSSION

This review indicates that various reasons to cause negative and disordered body image perception, such as body mass index and social media comparison, have an unhealthy outcome on mental in young adults. People who experience negative body image perception are vulnerable to have social anxiety, low self-esteem, and depression. The results suggest that correcting distorted body images, regulating the use of social media and reducing inappropriate body-comparison behavior will be protective factors for mental health. The results of the current review are consistent with previous findings suggesting that body image perception is linked to psychological health and eating disorder.

However, there is some limitation in the study. First of all, although many studies have been reported into body image and health areas, there are few studies focus on non-western countries. The trend towards thinness has also emerged in Asia. Some researchers have found that young women in Asian countries have adopted ideal bodies that are thinner than they are. In the non-western country, how body image perception affects mental health and healthy behavior should go future. The causes of distorted body image in the non-western county have value to conduct in the following research. Secondly, many studies focus on female, nevertheless female has been reported that they pay more attention to body image perception, such as body size and body shape. The body image perception of males is necessary to study as well.

This study leads to a deeper understanding of the risks of disordered body image among youth, and the association of this risk with problems related to psychological disorders and related behaviors, such as anxiety and eating disorder. The study contributed to further study of body image perception, and point out the future direction of study. It will help researchers and other people in organizations learn and understand body image to prevent the effects of distorted body image on physical and mental health.

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Discussion on the Reform of Advanced Mathematics Curriculum in the Background of Internet Plus

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Abstract: With the progress and development of science and technology, "Internet Plus" has been deeply into all aspects of education. The education and teaching model have also great changes. The emergence of various advanced technologies has provided the foundation and guarantee for the diversification of education. The teaching reform of Advanced Mathematics curriculum is an important part of higher education innovation and practice. By analyzing the shortcomings and disadvantages of the traditional teaching mode of the Advanced Mathematics Curriculum, a curriculum system based on the teaching of the Advanced Mathematics Curriculum under the background of "Internet Plus" is proposed, which explores the mixed teaching mode on-line and offline, with the aim of promoting the reform and development of the Advanced Mathematics curriculum.
Keywords: Internet Plus; Advanced Mathematics; Teaching Reform

1. INTRODUCTION

With the development of the network and the advent of the information age, the way of industrial production and life production has changed greatly, and it has also promoted the change and development of the teaching mode in the higher education. The Internet not only provides abundant teaching resources for education and teaching, such as micro-classes, shared resource classes, Chinese universities, short videos, etc., but also provides a new teaching platform for teachers' teaching, such as "learning pass", "rain classroom", "nail" and so on. Especially during the epidemic of Novel Corona virus, the network teaching platform provides the basic guarantee for teaching activities throughout the country and the world. In the context of the "Internet Plus" era, new teaching concepts have been born, and teaching methods have also diversified. The teaching classroom of Advanced Mathematics is facing new opportunities and challenges. Therefore, it is imperative to change the deficiency of traditional teaching mode, explore new teaching mode and improve teaching efficiency under the background of "Internet Plus".

2. THE TEACHING SITUATION OF TRADITIONAL "ADVANCED MATHEMATICS" COURSE.

Advanced Mathematics is a basic compulsory course for students in science and engineering, management and other majors, which can not only cultivate students' logical reasoning ability, but also be an important foundation for college students to innovate. Therefore, Advanced

Mathematics occupies an important position in the process of college students' study. However, the traditional Advanced Mathematics teaching has the following types of problems. (1) Students can't guarantee enough time for the curriculum preview. It will directly affect the students' listening effect, if the students can't do a good job of pre-class preview. (2) The student's main position is not clear enough. Teachers in the classroom "speak", students sit in the classroom passively "listen, remember", in the whole teaching activities more like "indoctrination"-style teaching mode, students can only passively follow the teacher, ignoring the subjectivity of the classroom. (3) The lack of classroom content, due to the limited school hours. Teachers' teaching content is too dependent on teaching materials, relying on the syllabus to explain. The knowledge of students is not targeted and weak practical. (4) The single examination model. In the traditional exam model, the final exam has been implemented. Many students don't pay attention to the usual study, and will only conduct ad hoc learning before the exam. This is not only detrimental to the cultivation of students' math quality, but also does not help normal classroom teaching quality.

3. THE EXPLORATION OF ADVANCED MATHEMATICS TEACHING MODE OF ADVANCED MATHEMATICS TEACHING MODE.

Under the wave of "Internet Plus", make full use of Internet technology and resources to play its role in Advanced Mathematics teaching. From the following aspects to explore how to use Internet technology to design advanced mathematics curriculum teaching. It makes the teaching of Advanced Mathematics realize the openness of time and space, the sharing of teaching resources, the diversity of teaching evaluation, and improve the quality and efficiency of teaching.

3.1 The reform and exploration of Curriculum system.
Based on the training goals and talent training plan, the Advanced Mathematics teaching curriculum system of "two platforms and three modules" is constructed. The so-called "two platforms" refers to the "learning through" as the network teaching platform. The construction of online education can enable students to study advanced mathematics not limited to time and place. Online platform is mainly to promote students to learn independently, so that students can preview in advance, can also review the contents at the end of the course. The traditional teaching platform, that is, classroom teaching. Classroom teaching is an essential part of Advanced Mathematics teaching. It not only can enable students to

interact with teachers in a timely manner, exchange problems and knowledge that they do not understand, but also can enhance the feelings between teachers and students. The so-called "three modules" refers to the basic theoretical knowledge, traditional application knowledge, and innovatively application knowledge module. Traditional theoretical knowledge of advanced mathematics is the foundation of applied mathematics. If you cannot understand the theoretical knowledge of advanced mathematics, there will be nothing else to talk about. The traditional applied knowledge module is the application of the mathematical theory knowledge learned to solve the textbook problems, examination and postgraduate exam questions. Innovative application knowledge module is to solve their own professional problems, learn to analyze problems, abstract mathematical models, and apply mathematical knowledge to solve. This new curriculum system model can not only retain the advantages of traditional teaching, but also open up a new teaching model, but also provide a basis for the social training of applied and innovative talents.

3.2 The construction of teaching resources.

(1) Construction of online course resources. Integrate and record teaching videos according to the characteristics of students based on "learning through" platform. The video teaching is divided into three parts. The first part is the basic knowledge and concept of the explanation, mainly used for students to advance to learn. The second part is the explanation of problem-solving methods and techniques, students can further master and understand the knowledge content of learning. The third part is the application of knowledge part. The content of mathematics is connected with the major of the students, and the internal connection is explored to stimulate students' interest. (2) The establishment of a teaching library. In the process of the construction of question bank, three modules are included. The first is the basic knowledge module, which is mainly to establish a basic question bank of advanced mathematics, and assesses students' basic knowledge, calculation skills and methods. The second is the traditional application module, which is mainly based on application, combining advanced mathematics with practical problems to establish a question bank. The third is the innovative application module. It is an open question bank that uses advanced mathematics knowledge to solve professional problems. (3) The construction of the curriculum and political resource library. "Curriculum thinking and politics" is the extension and expansion of moral education in the past. It can train students' national consciousness, cultural self-confidence, to promote students' all-round development. Mathematics is an ancient subject that embodies the science and wisdom of countless mathematicians. Through the generalization of mathematics thought, mathematics methods and mathematics humanities, we can excavate the ideological and political capital elements of Advanced Mathematics curriculum for using in teaching activities.

3.3 The exploration of teaching methods

Advanced Mathematics teaching should be combined with the objectives of professional training programs and the requirements of the syllabus. The teachers should re-formulation of Advanced Mathematics teaching plans, write internal lecture notes, teaching plans and PPT with professional characteristics. While perfecting the explanation of basic content such as limit, derivative, integral, etc., fully excavate mathematical knowledge in its professional application range. That can arouse students' interest in learning and personalize teaching. First of all, we should adopt research teaching methods to research students' mathematics background, students' professional background and the degree of closeness between Advanced Mathematics and their special courses. Secondly, we should adopt online and offline hybrid teaching. The "learning through" can be used for the construction of online learning platform. Online teaching is carried out after class, urging students to learn Advanced Mathematics after class. Choose the appropriate teaching method in the specific chapter. Then there is modular teaching, which is an orderly teaching method based on three modules: basic theoretical knowledge, traditional application knowledge and innovative application knowledge. It can make students have a solid foundation, reasonable application of mathematical knowledge.

3.4 An exploration of the evaluation model

Breaking the traditional "one test results" examination system, which is basically the total score of the usual results (mainly attendance and homework accounted for 30% of the total results) and final results (70%). This evaluation method ignores the comprehensive ability of students in the learning process, is not conducive to the overall development of students. Not quit the traditional final examination, increasing the online stage examination and chapter examination at the same time. That can help students to master the basic knowledge. Newly added open and innovative application questions of advanced mathematics knowledge, which can examine students' mastery of basic knowledge and enable students to understand mathematics at a deeper level. In short, the evaluation model will be increasing the students' process examination, comprehensive training of students' mathematics literacy.

4. CONCLUSION

Under the background of "Internet Plus", the teaching mode of Advanced Mathematics curriculum is not to replace the traditional classroom teaching, but to seek the teaching mode of the organic combination of online and offline. It will break through the limitations of traditional classroom teaching, take students as the center, mobilize students' initiative and enthusiasm for learning, so that students can truly participate in the teaching process and become the master of learning. At the same time, it also brings new challenges to teachers, teachers in the completion of offline classroom teaching at the same time. It will not only produce and organize high-quality online teaching videos, test library, but also design, organize, implement, supervise the entire online and offline teaching process. The teacher's teaching ability and teaching level will be effectively promoted. Therefore,

under the background of "Internet Plus", the reform of Advanced Mathematics curriculum teaching is of great significance and value.

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Exploration of Higher Mathematics Teaching Mode under the Background of "New Engineering"

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Abstract: New Engineering was put forward under the background of responding to the reform of emerging industries to support the national strategy. This article starts from the "New Engineering" which aims to cultivate innovative, applied, and highly competitive talents. This article put forward a new teaching model for higher mathematics courses from the teachers, the network digital resources and the planning inside and outside the classroom, so that higher mathematics courses can better serve professional courses.
Keywords: New Engineering; Innovation; Teaching Mode

1.INTRODUCTION

In line with scientific and technological innovation services and driving new changes, and actively responding to a new round of industrial changes to support a series of major national strategies, the Ministry of Education has actively promoted the construction of new engineering disciplines since February 2017[1], and promoted universities to accelerate the construction of new engineering disciplines , To cultivate a group of high-quality compound new engineering talents with strong innovation ability, strong practical ability and strong competitiveness in the industry. Higher mathematics, as a basic compulsory course for engineering majors, is not only a tool for students to follow-up professional courses, but more importantly, it can cultivate students' mathematical thinking, mathematical ability, and the ability to build engineering thinking and solve engineering problems from a mathematical perspective; and higher mathematics has the characteristics of high abstraction, heavy teaching tasks and constant compression of hours, large class teaching, high attention requirements and the current advanced mathematics classroom is mainly taught by teachers. Therefore, how to stimulate and maintain students' interest in learning higher mathematics, how to cultivate students' innovative thinking in the classroom and how to make students use the principles of higher mathematics to serve professional learning is a problem faced by every teacher. This article proposes to explore the establishment of a new teaching model in the context of the new engineering subject.

2. WEEKLY TEACHING AND RESEARCH, ANALYZING KEY POINTS

Discuss and analyze the key points of the next week's course in the weekly teaching and research activities. The key points include the important and difficult points of the content, the ideological and political points of the course, and the application case points related to the profession. The analysis of the important and difficult points can effectively guide the time in the teaching process. Arrangement, the implantation of ideological and political points in the classroom (such as the introduction of mathematicians, mathematics history stories) can stimulate students' passion for dreams, and the organic combination of case points and majors allows students to intuitively feel the use of learning mathematics and enhance student learning motivation, while cultivating students' ability to apply mathematical methods to solve practical problems, while the exchange of ideas among many people in the teaching and research discussion can also expand the teaching thinking of teachers, improve teaching ability, and at the same time develop new ideas in teaching content.

3. BUILD A RICH NETWORK TEACHING PLATFORM

Establish a complete online teaching platform, publish pre-study tasks on the Superstar before class: such as courseware, videos, etc., and encourage students to ask questions based on the pre-study content, let students bring problems into the classroom, and improve their independent learning ability while improving Learn to focus.

Each class is equipped with in-class tests to help students test their knowledge in time; establish a complete homework library, homework questions are divided into three levels, students choose according to their own level, consolidate the knowledge learned, reflect the high-level nature; establish a wealth of exercises library for students to self-test; establish case library resources to enhance students' practical ability; establish a chapter test library to check students' mastery in stages, and timely check for missing vacancies. Abundant network digital resources keep students "busy" and make students understand how to learn, what to learn, so as to carry out classroom activities more actively and effectively.

There are "traces" in the learning of Superstar, whether it is self-preparation, homework or chapter test, there are data, and the background will analyze these data, so that the teacher can better understand the student's learning situation, learning status and give timely feedback. For students who are good at learning, they must be "whipped fast", and for those who are not learning well, they must be "inspired and urged". Through the setting of various weights, these data are used as the usual results of the assessment, open and fair, and let the students feel have a bottom and know the truth.

4.PROBLEM GUIDE, CASE ANALYSIS

4.1. Students go to class with questions, and teachers go to class with questions, changing the past "full class" model, using problem-oriented and problem-solving teaching methods in the classroom, such as the partial integration method of indefinite integration time,

(i) First give a few indefinite integrals calculated by partial integrals, such as, $\int xe^x\,dx$,$\int x\ln x\,dx$,$\int x\arcsin x\,dx$, and ask students to answer whether they can be solved according to the direct integration method, differential method, and variable substitution method they have learned before. If not, observe the characteristics of indefinite integral.

(i i) Summarize the characteristics of these three integrands of indefinite integrals through student observation + teacher prompts: they are the product of two different types of functions, which leads to the question: how to solve the integral of the product of two functions.

(i i i) Students think about the reversibility of integral and derivative, and solve the integral of the product of two functions. Starting from the derivative of the product of two functions, derive the partial integral formula of indefinite integral $\int u\,dv = uv - \int v\,du$

(iv) After obtaining the partial integral formula, ask the question: How to use the partial integral formula? How to choose u and dv?

By analyzing the characteristics of the formula, guide students to explore the rules.

(v) After the students have knew how to use it, ask the question: Is there a simpler calculation method? Introduce students to the vertical calculation method of the partial integral

In the classroom, layered questions, teacher guidance, students dominate the classroom, pay attention to heuristic teaching, return the teaching in the discovery process to students, let students learn from passive learning to active learning, students maintain a high degree of attention, teachers and students continue to cooperate tacit communication, let the classroom "live".

4.2. Introduce some interesting or related professional cases in life[2-3] to stimulate students' interest in learning higher mathematics, such as "cobweb model", "snowball melting problem", "virus infection problem", " Mortgage loans and installment payments" and other application examples in daily life stimulate students' interest in learning; when introducing professional-related cases, we must pay attention to the first step to do enough homework and speak correctly, otherwise it will mislead students; on the other hand, because freshman students have not studied professional courses. Try to choose simple cases as much as possible. The professional knowledge used will be understood even if the students don't understand it with a little supplement. Therefore, the communication with the professional teacher and the professional knowledge learning should be strengthened before the course starts to better serve students. For example, architecture majors require students more to master the basic concepts and ideas of calculus proficiently, so you can strengthen the exercise in this aspect during class. The introduction of cases allows students to know that "learning is useful", and makes higher mathematics

classroom "precise".

4.3. Incorporate ideological and political elements in the classroom at the right time. For example, when talking about the extreme value of the unary function, you can start with the "peaks" and "valleys" of the rolling mountains, give the concept of extreme values, and draw out the "peaks" and "valleys" of life. The "peaks" is the moment of our victory, and the "valleys" is the moment of our failure. Life is tortuous. Peaks and valleys are temporary, which cultivates students' attitude towards life without arrogance and failure. When introduce the nature of infinitesimals, for the sum and product of finite infinitesimals are still infinitesimals, but the sums and products of infinitesimals are not necessarily infinitesimals. This leads to the principles of "water droplets piercing through stones, rope sawing wood broken", "from qualitative change to quantitative change", and train students' perseverance, indomitable spirit and make the classroom "warm up".

5.GROUP TASKS, COMPETITION PROMOTION

5.1. Group tasks, teamwork

Due to the large capacity of public basic classes, it is difficult for teachers to manage, and it is difficult to pay attention to each student. Therefore, the student management adopts group management and the group leader is responsible. After each section and chapter, each group independently builds mind mapping each section and each chapter. Which enable students to improve their understanding of knowledge and their ability to take initiative; each team member supervises each other's mastery of formulas and basic methods, such as derivation formulas, integral formulas, and derivation and integration methods, etc., to ensure that each students follow the team to learn and master the basic theories; after each module, each group will report their knowledge and understanding of the module, scoring between groups, and the teacher scoring. As part of the usual grades, students do it by themselves and speak certain things by themselves. It is the most memorable one, and at the same time it can enhance the team spirit of students.

5.2. Promote learning with competition and reflect value

The introduction of mathematical software is interspersed in the course of teaching. For example, after the calculation of limits, derivatives, and integrals, you can demonstrate in class how to use MATLAB to get results very quickly, so that students can learn MATLAB software and communicate with each other after class. Realize the use of mathematical software to solve practical problems.

Actively guide students to participate in mathematics competitions, mathematical modeling competitions, and quick calculation competitions. In the homework tasks, students can team up to challenge previous college students' mathematical modeling problems, or assign some college mathematics competition test questions or postgraduate entrance examination questions that students "can get", On the one hand, participation in the competition can "upgrade" some students, strengthen their profound mathematics skills, and provide support for their further postgraduate entrance examinations. On the other

hand, they can also improve students' ability to solve application problems. Let students fully demonstrate their talents, let them feel the satisfaction brought about by their hard work, enhance their sense of worth, cultivate students' teamwork spirit, hard work, problem-solving abilities, and challenging and innovative qualities.

6.CONSOLIDATE LEARNING AFTER CLASS

6.1. Special lectures to improve

Every semester, the school arranges a series of lectures by famous teachers in higher mathematics. The lectures by famous teachers will not only summarize knowledge, methods and skills, expand the depth and difficulty of knowledge, but also guide students to actively study the course, and even actively study all courses in the university, so everyone is encouraged to actively participate in the lectures. Through the study of the lectures, students can not only sort out the knowledge of related modules, check the missing and fill vacancies, but also have a deeper understanding of the module knowledge, and at the same time broaden their mathematical thinking, and improve the initiative and effectiveness of learning.

6.2. Answer questions and give feedback in time

For students' questions, promptly answer questions on the premise of encouraging students to think independently; various ways of answering questions can be adopted, face-to-face answering before and after class, which is more convenient and effective; students are encouraged to post questions to the class group on the Superstar or discussion area after class on the Superstar , Encourage students who understand it to respond actively, and at the same time allow other students to pay attention to the problem, and provide individual online tutoring for individual problems; for general problems, you can use live broadcast or video recording to answer questions and answer questions in time, so that students can learn more effectively. Nowadays, students are more open-minded, and we can achieve the effect of teaching and learning in the process of communicating with students.

7.ASSESSMENT

The traditional higher mathematics assessment method is based on the final grades and the usual results (including attendance, classroom performance, homework) as a supplement. There are many students who make crazy assault before the exam and forget everything after the exam. Higher mathematics assessment under the background of new engineering, the proportion of procedural assessment should be particularly increased. The final score is closely related to the performance of each day to encourage students to persist in learning. The procedural assessment includes (1) learning of courseware, videos, and materials in the Superstar (2) classroom performance and the discussion situation in the discussion area (3) In-class test and chapter test scores (4) Group task report scores (5) Use of mathematics software,

competition and modeling ability. The process assessment should cover knowledge assessment, ability assessment, and quality assessment, and be close to the new engineering concept. In addition to textbook knowledge, the final exam can also add lecture questions or open questions to assess students from all aspects and multiple angles, so as to truly stimulate students' enthusiasm for learning to improve the quality of course teaching.

8.CONCLUSION

This article puts forward a number of ideas for the teaching mode of higher mathematics under the background of "new engineering". Teachers exchange teaching and research, establish a wealth of network digital resources, bring questions into the classroom, let students play the main role in the classroom, and introduce relevant cases to make students clear the use of higher mathematics, the close connection between advanced mathematics and one's own majors, the integration of ideological and political education in the classroom, the establishment of morality, and the introduction of related questions about postgraduate entrance examinations into the curriculum, to show the high-level, innovative and challenging nature of teaching, make higher mathematics courses better serve the learning of subsequent professional courses, and at the same time cultivate high-quality and highly competitive compound application talents to cope with the new round of industrial changes.

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Exploration of "Ideological and Political Education" into the Teaching Process of "Advanced Mathematics"

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Abstract: "Ideological and Political Education" into "advanced mathematics" classroom teaching is in its infancy. According to the characteristics of advanced mathematics, the teaching goals of advanced mathematics and talent training plan, this paper introduces the implementation of the integration of " ideology and politics education" into the teaching process of "advanced mathematics", discusses the direction of higher mathematics teaching reform based on " ideology and politics education", and points out that the integration of " ideology and politics education" in advanced mathematics teaching is an effective way to improve students' ideological and political consciousness and establish a correct outlook on life and values.
Key words: Ideological and Political Education; Advanced mathematics; Teaching Reform

1. INTRODUCTION

It is imperative to integrate "Ideological and Political Education" into the teaching process of advanced mathematics. In 2016, Present Xi stressed at the National Conference on Ideological and Political Work of Colleges and Universities that "we should make good use of the main channel of classroom teaching, so that all kinds of courses and ideological and political theory courses can develop in the same direction and form a synergistic effect."In 2017, the Central Committee of the Communist Party of China and the State Council stressed again that "it is necessary to strengthen the construction and management of classroom teaching and various ideological and cultural positions, and to fully explore and apply the ideological and political education resources contained in all disciplines." In 2018, Minister of Education Chen Baosheng in the new era of the National Conference on undergraduate education in institutions of higher learning specifically pointed out that "Each curriculum should be integrated into ideological and political education, and every teacher is about educating people." In June 2020, the Ministry of Education issued the "guidelines for the ideological and political Construction of higher education curriculum" to comprehensively promote the ideological and political construction of colleges curriculum, to give full play to the educational role of each course, and to improve the quality of talent training in colleges and universities. Therefore, it is imperative to integrate Ideological and Political Education into the course teaching of advanced mathematics.

2. THE EFFECTIVE WAY TO INTEGRATE IDEOLOGICAL AND POLITICAL EDUCATION INTO THE TEACHING PROCESS OF ADVANCED MATHEMATICS

2.1. Training of teachers.

The teacher is the leader of the whole teaching activity, and the student is the main body of the teaching activity. The teachers play an irreplaceable role in teaching process if "Ideological and Political Education" can be integrated into the teaching process truly and effectively. The teachers' cognition of Ideological and Political Education, teachers' professional quality and teaching ability will directly affect the quality of "ideological and political education" into" advanced mathematics "classroom teaching. Therefore, the training of teachers is the key link that "ideological and political education" can be effectively integrated into curriculum teaching. (1) The cultivation of teachers' consciousness of ideological and political education. Relevant departments of each school can conduct intensive training and interpretation of the national curriculum "ideology and politics education" documents, and let teachers realize that "ideology and politics education" is imperative. At the same time, have in-depth exchanges with teachers to understand the true connotation of "ideology and politics education". "Ideological and political education" is not to teach the curriculum into ideological and political education courses. It will integrate political identity, personality development, national consciousness and other ideological and political education with the set courses to comprehensively cultivate students. (2) Improve teachers' ability of thinking and politics in advanced mathematics. " ideology and politics education" is a new term, but for teachers is not a completely unfamiliar concept. "Ideological and political curriculum" is the extension and expansion of moral education in the past, its value connotation is more abundant. Teachers can prepare lessons collectively, dig deep into the elements of "ideology and politics education" in the content of advanced mathematics curriculum, and explore the organic combination of "ideology and politics education" and advanced mathematics knowledge through various ways such as training and subject research. (3) Enhance teachers' moral charm. As for moral education, strict teaching is better than strict teaching. This kind of education mode will backfire, if college teachers do not have lofty morals and accomplishments, but just preach. Therefore, teachers should pay attention to the cultivation of moral character, to stand by virtue, to teach by virtue.

2.2 The construction of the resource bank of the

ideological and political education.

The collection and construction of "ideology and politics education" material is the fundamental guarantee for the smooth implementation of "ideology and politics education". Therefore, it is particularly important to do a good job in the construction of ideological and political resource bank of advanced mathematics curriculum. Advanced mathematics contains rich elements of "curriculum politics ", but its elements of "curriculum politics" are usually recessive and need to be excavated and refined. The history of mathematics is the treasure house of mathematical thought, mathematical method and mathematical knowledge, which condenses the intelligence of countless predecessors. (1) The excavation of mathematics humanities accomplishment. From ancient times to the present, no matter from Liu Hui's circular cutting to Hua Luogeng's matrix geometry, or from Archimedes's spiral to Newton-Leibniz's calculus, all of them hide the charm of mathematics and show their qualities of rigorous study and pursuit of truth. (2) The aesthetics of mathematics. Mathematics is rigorous and there is no lack of beauty. Archimedes' spiral, Descartes' heart line, shows different beauty in the boring mathematical theory. (3) Philosophy of mathematics. In the concept of definite integral, we complete the explanation of the concept through the four steps of "dividing, seeking approximation, summing up and taking limit ". In fact, it also embodies the philosophical thought of "less accumulation and more, quantitative change to qualitative change" here. In the introduction of the concept of limit, we can also introduce Zhuang zi's famous saying, "the hammer of a foot takes half of it forever" so that we can understand the limit of knowledge through philosophy. Mathematics is an ancient science, which contains rich educational resources, as long as we work hard to dig, will find rich treasure.

2.3 Reform of the teaching model.

The traditional advanced mathematics teaching process is carried out in the mode of "concept theorem explanation, example explanation and exercise consolidation" trilogy. Teachers speak in class, students in the following mechanical memory and understanding. Once a student does not understand a certain link, it will be difficult to keep up with the teacher's rhythm. Over time, the student will lose interest in learning. Therefore, the traditional teaching mode must be changed. (1) Reform of teaching objectives. Combining the existing advanced mathematics syllabus, professional talent training program, and quality and ability requirements, explore the higher mathematics teaching goal under the vision of "curriculum ideology" combining knowledge transfer and value guidance. (2) Reform of teaching content design. The teaching content should be designed in a targeted manner according to the professional talent training plan and teaching goals. (3) Reform of teaching methods. We should make full use of Internet technology and learning platform to carry out teaching activities. The application of the excavated "ideology and politics education" elements combined with specific knowledge points to make teaching courseware and video to show students more concretely and vividly.

(4) Reform of the examination mechanism. The comprehensive evaluation index of the implementation effect of "ideology and politics education" is built, based on the multi-dimensional assessment model of "process + result" and "knowledge + moral character" combined.

3. THE SIGNIFICANCE OF "IDEOLOGY AND POLITICS EDUCATION" IN THE PROCESS OF "ADVANCED MATHEMATICS" TEACHING

As a freshman who has just entered the university campus, his person's thought is not completely mature. Advanced mathematics is a public course offered by first-year freshmen in science and engineering, economics and management, etc. The course is long and the audience is large. Advanced mathematics classroom provides a good platform for moral education and intellectual education. It is not only the duty of school counselors and class teachers to guide and help students to set up correct outlook on life and values, but also the responsibility and obligation of each teacher. At the same time, the content of advanced mathematics is abstract, logical, single understanding of concepts and theorems, students are easy to lose interest. Therefore, it is of great significance for teachers to excavate the elements of "ideology and politics education" from the knowledge points of advanced mathematics curriculum, deepen students' understanding of what they have learned, raise students' ideological consciousness, increase students' interest and initiative in learning advanced mathematics knowledge, and help to improve the effect of advanced mathematics teaching and promote students' all-round development.

It is a challenge and an opportunity for teachers to integrate "ideology and politics education" into advanced mathematics classroom. As a teacher of advanced mathematics, we should combine the history of mathematics, mathematicians and other relevant mathematics resources, excavate the " ideology and politics education" of advanced mathematics curriculum content, integrate " ideology and politics education" into advanced mathematics classroom, write " ideology and politics education" teaching case of advanced mathematics, explore new teaching methods, enrich teaching resources and expand teaching cases by means of Internet technology.

4. CONCLUSION

Advanced mathematics courses are long, rich in content, and contain rich elements of education. Advanced mathematics teachers should make good use of the advanced mathematics classroom teaching platform to build a team of teachers with high quality, high level and high ability. The teachers should dig deep into the elements of "ideology and politics education" in mathematics knowledge to establish the resource bank of "ideology and politics education" in advanced mathematics. Based on the ideological and political education teaching objectives and talent training plan, the implementation of curriculum teaching reform, multi-channel, multi-channel exploration of the integration of mathematical knowledge content and "curriculum ideological and political" content. "Intellectual education" and "moral education" should be combined to improve

students' cultural knowledge literacy, subtly cultivate students' patriotism and the spirit of hard work, and improve students' overall quality.

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Research on Integrating Ideological and Political Education into Advanced Mathematics Curriculum

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Abstract. Curriculum ideological and political education is a profound revolution in the ideological and political work of colleges in the new era. At present, it has become a highly concerned theoretical and practical problem. Many college lecturers. begin to explore and study how to integrate ideological and political education into the curriculum. "*Advanced mathematics*" is a compulsory public basic course for all majors of science and engineering, and its content occupies a very important position in the knowledge system of college students. Advanced Mathematics focuses on the cultivation of students' abstract thinking ability, logical reasoning ability, spatial imagination ability, observation ability and the ability to analyze and solve problems by comprehensively using the learned knowledge; therefore, it is an important course to carry out mathematical quality education and cultivate learners' innovative spirit and ability. In the process of teaching, teachers should not only be satisfied with teaching basic theoretical knowledge and calculation methods, but also deeply explore the ideological and political elements in higher mathematics, stimulate students' interest in learning, improve classroom teaching effect, help students establish a correct outlook on life, values and the world, and promote that "the organic unity and integration of value leading and knowledge transfer". The education of ideals and beliefs, patriotism, dialectical materialism and historical materialism should be integrated into the knowledge impartation.

Keywords: Curriculum Ideological and Political Education; Advanced Mathematics; Ideological and Political Elements

1.INTRODUCTION

In September 2018, at the National Conference on Ideological and political work in colleges and universities, President Xi Jinping summarized and expounded the ideological and political work in the course of science. He pointed out that "We should persist in taking moral education as the central link, put ideological and political work throughout the whole process of education and teaching, to realize the whole process and all-round education, should make good use of the main means of classroom teaching, the ideological and political theory course should be strengthened in the process of improvement, Other courses should make good use of good means and take responsibility, so that all kinds of courses and ideological and political theory courses can go together and form a synergistic effect".

Integrating Ideological and political education into the curriculum is a new idea in all universities in the world, and it is just in its infancy in China. Therefore, the existing research results are mainly reflected in the following aspects: elaboration of views, discussion path or strategy, discussion of practice mode and analysis value. Although the ideological and political research on curriculum has developed rapidly, there are still some problems. Firstly, because the research time is not long, there are many theoretical discussions and few practical results. Secondly, the research scope and field are too limited, and the current research results are mainly concentrated in the field of higher education. Finally, according to the "*Statistical Bulletin on The Development of National Education in 2017*" published on the official website of the Ministry of education on July 19, 2018, there are 513800 schools at all levels in China, while only 40 institutions have participated in and achieved important research results. The huge gap shows that the ideological and political construction and research of the curriculum is still in its infancy, and it is not a large scale, which will be a long-term and arduous task in the new period of socialism in our country.

In such a situation, the research on the ideological and political education of higher mathematics curriculum is far from satisfactory, and the existing research lacks rigorous academic argumentation and a complete design system. Our college's talent training goal is to cultivate "high-quality application-oriented talents with both political integrity and ability and lasting competitiveness in the industry". Therefore, around this training goal, as a front-line teacher, we should strengthen the organic implantation of ideological and political content in the classroom teaching of higher mathematics, stimulate students' passion to fight for their dreams, cultivate students' sense of home and country, and improve students' ability and quality.

2.WAYS OF INTEGRATING IDEOLOGICAL AND POLITICAL EDUCATION INTO ADVANCED MATHEMATICS CURRICULUM

The ultimate goal of the "*Advanced Mathematics*" course is to cultivate students' good morals, forge students' mathematical calculation and logical thinking abilities, and lay a solid foundation for students to apply mathematics to solve problems and continue their studies. In order to accomplish this goal, it need to solve the following problems.

2.1 Discriminating concepts and clear direction

"Curriculum ideological and political education" refers to seeking the relevance between professional knowledge

and ideological and political education content in all kinds of basic courses and professional courses other than "Ideological and Political Courses" in Colleges and universities, and integrating the relevant content of Ideological and political education into subject teaching in the process of curriculum development, so as to achieve the purpose of Ideological and political education through subject infiltration. The ideological and political course is communicated by explicit and direct way, while the ideological and political course is infiltrated into the teaching process of professional courses in a more implicit form, and students unconsciously accept the mainstream socialist ideology.

2.2 Optimize the goal and improve capability

"Advanced Mathematics" is a compulsory public basic course for science and engineering majors and some liberal arts majors in our college. It is not only the foundation of students' follow-up professional courses, but also lays a solid foundation for postgraduate entrance examination. Under the overall goal of cultivating morality and students as the center, we should optimize the teaching objectives of the course: knowledge objectives, ability objectives and quality objectives. Knowledge objective: mainly teach the basic theoretical knowledge system of higher mathematics, aiming to consolidate the basic theory and basic computing ability, and lay a solid foundation for subsequent learning. Ability objective: to cultivate students' ability to analyze and solve problems, mathematical thinking ability and logical reasoning ability; to serve professional certification and cultivate students' innovation ability. Quality goal: the organic implantation of Ideological and political education in teaching makes the value lead the goal; the intensive training of various competitions improves the intensity of mathematical thinking. The new teaching goal is to improve the original curriculum, not to negate it.

2.3 Sort out the content and excavate the ideological and political elements

The main teaching contents of "*Advanced Mathematics*" include Single Variable Calculus, Multivariate Variable Calculus, space analytic geometry, infinite series and differential equations, etc. On the premise of keeping the quality and intensity unchanged of advanced mathematics education, Combing the content of the original knowledge points, excavating the ideological and political education elements contained in the curriculum, integrating some important philosophical ideas, the requirements of socialist core values, the ideal and responsibility of national rejuvenation into mathematics teaching.

2.4 Revise the syllabus and improve the teaching plan

According to the new teaching objectives, on the basis of attributes and class hours remain unchanged in advanced mathematics education, the original teaching syllabus is revised, the excellent teaching plan is made, and the case teaching micro video of Ideological and political course is recorded. Note: in the ideological and political elements into mathematics teaching, we must do "imperceptibly, moisten things with sound, moisten things with emotion!"

2.5 Improve the level of teachers and promote team development

The key of curriculum ideological and political education lies in teachers. Teachers should be clear and understand in teaching. College lecturers should take morality as the goal to demand themselves, manage students, implement teaching, and strive to become a disseminator of advanced ideology and culture and a firm supporter of the Communist Party in power. Only in this way can we better shoulder the responsibility of the student's healthy growth guide and guide. advanced mathematics curriculum should be integrated into the ideological and political education organically. Teachers need to tap in depth the explicit and implicit ideological and political education resources that hidden in the curriculum. Therefore, teachers are required to constantly strengthen their awareness of learning, and strengthen the study of mathematics history, mathematics culture, ideology and politics.

3.CONCLUSION

Excellent high-quality talents should not only have solid professional knowledge and skills, but also have a strong sense of social responsibility, profound cultural heritage and noble moral quality. University lecturers are required to give full play to their leading role, while completing teaching tasks successfully, try to excavate the profound ideological and educational elements contained in the teaching content, and organically combine teaching with students' ideological and political education, so that students can establish a correct outlook on life, world and values while learning knowledge.

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Exploration and Practice of The Teaching Reform of "Advanced Mathematics" Based on "Medical and Industrial Integration"

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Abstract. With the concept of "new engineering, new medical and new liberal arts" put forward, new requirements have been put forward for the cultivation of high-level compound and applied innovative talents. In view of the current learning situation of medical college students, combined with the training program of "new engineering, new medicine and new arts", taking the reform of advanced mathematics as an example, this paper discusses the integration of medical and engineering, and puts forward the reform of teaching methods with stimulating students' interest in learning as the main line and focusing on cultivating students' ability.
Key words: The integration of medical and engineering; Advanced mathematics; Teaching Reform

1. PAY ATTENTION TO THE FOUNDATION

Baosheng Chen, Secretary of the Party Leadership Group and Minister of the Ministry of Education, pointed out that from 2019 to 2021, the Ministry of Education will fully implement the "Six Excellence and One Top" Program 2.0 in three years. The plan comprehensively promotes the construction of new engineering, new medical, new agricultural, and new liberal arts, and improves the ability of universities to serve economic and social development. The construction concept of "new engineering, new medicine and new liberal arts" emphasizes the practicality, intersection and comprehensiveness of discipline construction. Mathematics is the necessary tool and language of various disciplines, the core element of cultivating students' problem-solving ability, and the foundation and guarantee of cultivating excellent talents. Basic courses of mathematics are the backbone courses in university courses, and their teaching quality will affect the quality of university courses the quality of higher education plays an important role in the quality revolution of higher education in the new era. The course of advanced mathematics is characterized by many concepts, abstractness and strong theory, which makes students feel boring and uninterested. Therefore, the reform and innovation of teaching methods should be the top priority of teaching reform.

1.1 Introducing mathematical concepts with "case teaching method"

Mathematics concept is the cell and brick of mathematics. Without mathematics concept, mathematics building cannot be built at all. Therefore, strengthening the teaching of mathematical concepts is the key to learn mathematics well and an important link to improve the

quality of teaching. Case teaching is to guide students to understand and summarize the concepts and theories related to the teaching content by simulating some scenes in real life, analyzing and discussing. The implementation of case teaching method can be divided into three steps[1]: (1) Case selection. The cases used in the course teaching need teachers to choose appropriate cases before class, and the selected cases should inspire students to think, discuss and further explore the practical problems. (2) Case analysis. On the basis of guiding students to understand the case, put forward some targeted questions for students to think, discuss and summarize the answers to the questions. (3) Case generalization. Then enumerate some similar cases, analyze the cases, find the commonness of the cases through comparison, discuss and summarize the relevant mathematical concepts[2].

For example, when introducing the variable limit function: First of all, combined with the geometric and physical meaning of definite integral, a plane flies from Beijing to Shenzhen Futian at time t_0, arrives at Shanghai at t_1 and Shenzhen at t_2, as shown in Figure 1. Secondly, analyze the case. The distance from Beijing to Futian is $\int_{t_0}^{t_2} v(t)\, d\,t$, so what is the distance from Beijing to Shanghai? What is the distance of the plane at time x ($x \in [t_0, t_2]$)? After analysis, the distance from Beijing to Shanghai is $\int_{t_0}^{t_1} v(t)\, d\,t$, and the distance of the plane running at time x is $\int_{t_0}^{x} v(t)\, d\,t$.
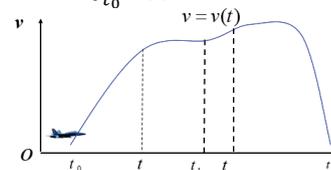

Figure 1

Finally, from the above results, the distance of the aircraft in operation changes with the change of x.

From the above case, according to the definition of function, $\int_{t_0}^{x} v(t)\, d\,t$ is a function of x, and such a function is called a variable limit function. The definition of the variable limit function is derived.

1.2 Strengthen the contrast and connection between new and old knowledge

Mathematics is a subject with strong logic and close connection between the former and the latter knowledge. The knowledge of middle school mathematics, advanced mathematics, and the upper and lower volumes of

advanced mathematics, are related, but for most students, they are not aware of this connection. Therefore, in teaching, teachers need to supplement the relevant knowledge in time and build a bridge between the new and old knowledge, so that students' thinking and knowledge can be improved Smoothly linked up in the brain to form a knowledge network.

For example, the function $f(x) = x^2 + \frac{2}{x} + a\,ln\,x$ ($x > 0$) is second-order differentiable ,for any two unequal positive numbers x_1 and x_2, proof: When $a \leq 0, \frac{f(x_1)+f(x_2)}{2} > f\left(\frac{x_1+x_2}{2}\right)$

If we use the method of middle school mathematics to calculate $f(x_1), f(x_2)$ and $f\left(\frac{x_1+x_2}{2}\right)$, the calculation is complicated. If we want to prove this inequality, we only need to prove that the function is concave, that is, we need to prove that $f''(x) > 0$, which greatly simplifies the calculation.

2.STRENGTHEN APPLICATION

2.1 Pay attention to the connection between theory and practice

Mathematical knowledge has a high degree of abstraction, many abstract mathematical knowledge are derived from real life problems. In teaching, combined with students' existing life experience, guide and inspire students to find the connection between knowledge and life practice, and create a realistic and attractive learning environment, which can not only activate students' thinking, but also make students feel the practicality and interest of mathematical knowledge, and stimulate students' interest in learning.

For example, when learning the application of multiple integral, we use multiple integral to derive Poiseuille's law in blood circulation, that is, the blood flow per unit time is proportional to the fourth power of the vessel radius. Suppose that a blood vessel has a circular cross section with radius $R(cm)$, as shown in Figure 2. Pay attention to this circular cross section and measure the blood flow through this cross section in one second. The position of point P on the circular cross section is determined by $r(cm)$ and θ, which can be written as $P = (r, \theta), 0 \leq r \leq R, 0 \leq \theta \leq 2\pi$. Using a group of concentric circles with the pole as the center r=constant and a group of rays from the pole θ =constant, the circular section of the blood vessel is divided into many small areas, as shown in Figure 3. Each small area can be approximately seen as a rectangle with dr and $rd\theta$ width, and the area of each small area $dA = rdrd\theta$ .According to Newton's sheet flow formula, the flow rate of blood is

$$V = \frac{P_1 - P_2}{4\eta L}(R^2 - r^2)$$

Therefore, the blood flow through the small area dA in one second is

$$VdA = \frac{P_1 - P_2}{4\eta L}(R^2 - r^2)rdrd\theta$$
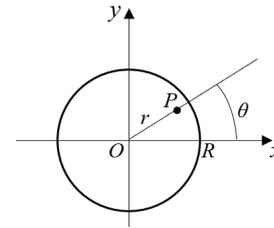
Figure 2 Circular cross section of a blood vessel with radius R
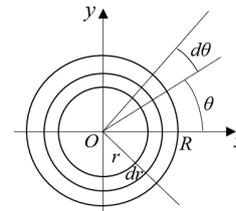
Figure 3 divides the section circle into many small areas Here we consider the flow rate of V in a small area of dA as a constant. Then the total flow Q of blood flowing through a circular section in one second is the sum of all these small flows VdA.

$Q = \iint_S VdA = \iint_{\substack{0 \leq r \leq R \\ 0 \leq \theta \leq 2\pi}} \frac{P_1 - P_2}{4\eta L}(R^2 - r^2)rdrd\theta =$ $\frac{P_1 - P_2}{4\eta L}\int_0^{2\pi}\int_0^R (R^2 r - r^3)drd\theta \qquad = \frac{P_1 - P_2}{4\eta L}\int_0^{2\pi}(\frac{1}{2}R^2 r^2 - \frac{1}{4}r^4)drd\theta\Big|_0^R d\theta = \frac{P_1 - P_2}{4\eta L}\int_0^{2\pi}\frac{1}{4}R^4 d\theta = \frac{\pi(P_1 - P_2)}{8\eta L}R^4$

This is Poiseuille's law.

2.2 Integrating mathematical modeling into Teaching

Mathematical modeling is the best combination of mathematical knowledge and practical application ability. To carry out mathematical modeling teaching in advanced mathematics class can make students fully realize that the process of learning mathematics is also the process of modeling and solving problems, so as to stimulate students' interest in exploration and cultivate students' comprehensive ability and practical application ability.

For example, when teaching differential equation, we can use differential equation as a tool to establish SIR model of infectious disease [3]; when teaching differential and derivative, considering that derivative and differential are the limit process of relative change of function and independent variable, we can introduce the price strategy model of merchants, which is the application of derivative in economy.

In the teaching process of advanced mathematics, the cultivation of students' ability is diverse, which requires teachers to improve teaching methods, guide students to use their brains, do more and have the courage to explore. So as to better cultivate students' innovation ability, practical application ability, improve students' interest in learning, broaden their horizons, exercise students' ability to solve problems.

Politics Education into the Teaching of Advanced Mathematics".

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