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# Analysis of Ammonia Content in Tail Gas of Plasma Flue Gas Desulfurization Technology and Its Application

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**Abstract:** Plasma flue gas desulfurization and deamination process has many advantages that traditional methods do not have, thus it has become one of the hot topics in recent years. In order to improve the desulfurization rate of plasma flue gas and better play the role of water and ammonia in the process, we propose a method of corona discharge steam activation to improve the desulfurization rate. Negative DC corona discharge and water absorption have a synergistic effect on flue gas desulfurization, which improves the desulfurization effect. the desulfurization efficiency of single discharge or water absorption is very low, and the desulfurization efficiency is greatly improved when water absorption and discharge work together. This paper also discusses key issues such as reduced energy consumption, residual ammonia treatment, and product collection in industrial applications of the technology. the effect of discharge on SO<sub>2</sub> removal and the combination of desulfurization and dust removal are discussed. the desulfurization rate of flue gas can be improved obviously by increasing corona discharge steam activation technology. the results show that the vapor activation technology of corona discharge is effective and feasible.

**Key words:** Plasma; Flue gas desulfurization; Ammonia

## 1 INTRODUCTION

Sulfur dioxide is a toxic gas, which is the main component of acid rain. It is harmful to the growth of crops and the physical and mental health of human beings. It will also destroy the relics of ancient culture and have a great impact on the environment [1]. Plasma flue gas desulfurization technology mainly refers to electron beam ammonia flue gas desulfurization technology and pulse discharge plasma flue gas desulfurization and denitration technology. Its treatment process is to treat flue gas containing sulfur dioxide and ammonia oxide with

energy generated by electron accelerator or high voltage pulse power supply [2]. In the process of treating ammonia-containing waste gas, the soot, ammonia, and other pollutant molecules can be captured and degraded at the same time. Since sulfur in the flue gas is in the form of SO<sub>2</sub>, technical desulfurization is possible [3]. Plasma dry desulfurization is a new technology developed in recent years. It has a series of advantages, such as investment, high-quality chemical products, no waste liquid treatment, etc., can simultaneously remove SO<sub>2</sub> and NO, simple operation, small size, etc. [4]. the technology realizes the comprehensive utilization of sulfur ammonia resources and natural ecological cycle, and is a green resource comprehensive utilization of flue gas purification technology, representing the development direction of flue gas desulfurization technology.

## 2 EXPERIMENTAL PART

### 2.1 Instruments and reagents

DX-320 ion chromatograph is composed of double plunger single channel reciprocating pump, CL20 chromatographic column box, CI25A chromatograph host, conductivity detector and PEAKNET. 60 data processing system. the experimental reactor has a multi-needle and water film electrode structure. the reactor shell is cylindrical and made of polyethylene material. Methane sulfonic acid is analytically pure, NH<sub>4</sub>Cl is of superior grade, and ammonia standard gas is prepared by Chemical Research Institute. During the experiment, if the water vapor is activated by corona discharge, the water vapor is injected into the reactor through needle electrodes. If the water vapor is not treated by corona discharge, it is to let the water vapor enter the reactor through the front flue of the reactor. the activation and inactivation of water vapor in corona discharge can be realized by adjusting the gas commutation switch.

### 2.2 Principle of analytical method

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The analyzer is based on the principle of non-dispersive infrared. After the pretreatment of the flue gas, the concentration of ammonia can be monitored in real time. Active species have strong oxidation, which can initiate oxidation reaction to oxidize  $\text{SO}_2$  to  $\text{SO}_3$ , generate  $\text{H}_2\text{SO}_4$  in water and gas, and further produce ammonium sulfate when ammonia is injected as additive, which can be recovered as by-product. Since the concentration of  $\text{SO}_2$  in the flue gas is on the order of  $10^{-3}$ , the probability of direct dissociation by high-energy electrons is small. It reacts with the Nessler reagent to form a yellow-brown complex, and its absorbance is measured. Ion chromatography is the separation of ions by ion exchange between the mobile phase and the stationary phase.

### 2.3 experimental method

Taking ammonia standard gas with a certain concentration and tail gas ammonia in desulfurization experimental equipment as samples, four different methods were used to test and compare the analysis results. Lime and other desulfurizing agents are added into the absorption tower, and the desulfurizing agent is fluidized by high-speed gas so as to be strongly mixed and contacted with flue gas, and acidic pollutants in the flue gas are neutralized and solidified with the desulfurizing agent so as to achieve the purpose of purifying the flue gas. And then cooling by a heat exchanger or/and a spray cooler. the cooled flue gas is mixed with stoichiometric ammonia and enters the plasma reactor. As the needle electrodes are evenly distributed on the needle plate, the gas passes through the circular discharge area in a radial shape and bypasses the needle plate electrode after discharge treatment, thus ensuring that the flue gas completely passes through the discharge area and the treated flue gas enters the gas outlet at the center of the cover plate on the reactor shell upwards. the desulfurization effect of ammonia activation is carried out under the condition that no pulse voltage is applied to the pulse discharge electrode system and the pulse discharge plasma does not work. Only the desulfurization rate and its influencing factors of applying positive DC voltage to the activation electrode are studied. the sampling methods of ion chromatograph and nessler's reagent spectrophotometry are as follows: dilute sulfuric acid is used as absorption liquid, and sampling method of nessler's reagent spectrophotometry is adopted.

## 3 RESULTS AND DISCUSSION

### 3.1 Determination of ammonia standard gas

Different methods were used to determine ammonia standard gas with a certain concentration, and the determination results are listed in Table 1. As can be seen from the table, the push-pull speed, visual error, etc. will cause differences due to the need to use the push-pull handle for sampling in the detection tube method. After being heated, the flue gas is mixed with

sulfur dioxide and sent to the reactor. Ammonia gas is mixed with compressed air and added from the hollow electrode. Molecules that pass through  $\text{N}_2$  excited states have a much higher probability of dissociation than molecules that pass through electron collisions. the emission spectra of  $\text{SO}$  fragments produced by collision have been detected in experiments. Flue gas enters directly from one end of the reactor wall, passes through the discharge area between the needle electrode and the water surface, and then is discharged from the other end of the reactor wall. the desulfurization rate increases with the increase of activation voltage when water vapor or ammonia are activated separately and water vapor and ammonia are activated simultaneously. At the same activation voltage, the desulfurization rate when water vapor and ammonia are activated simultaneously is higher than that when they are activated separately. Therefore, the corona current increases with the increase of activation voltage. Ammonia molecule is an electronegative gas. It is easy to combine with electrons to form ions with low mobility. Therefore, the corona current caused by ammonia injection is slightly lower than that without injection. In this experiment, the dosage of sulfur dioxide and ammonia is controlled by mass flow controller. A flue gas parameter measurement outlet is set before and after the reactor and after the bag filter.

Table 1 Comparison of test values of pure ammonia standard gas side

	Ammonia analyzer	Ion chromatography	Nessler's reagent method
Ammonia concentration ( $\text{mg}/\text{m}^3$ )	70.36	73.94	76.03
Average value( $\text{mg}/\text{m}^3$ )	75.24	77.82	74.28

### 3.2 Determination of ammonia content in tail gas of desulfurization unit

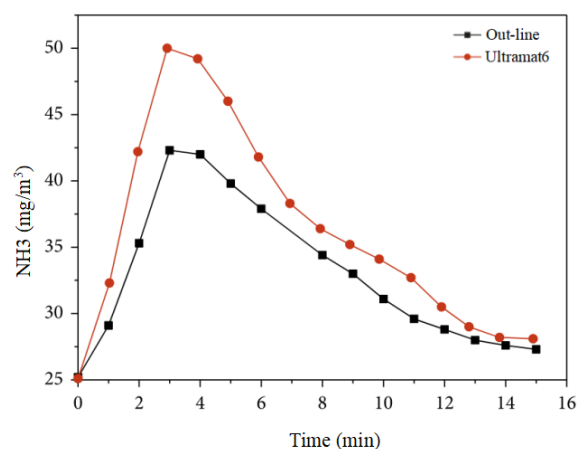


Figure 1 Nessler reagent method and ammonia analyzer tail gas ammonia sample

Ammonia analyzer can monitor ammonia concentration change online, but it is easily disturbed by moisture and sulfur dioxide in flue gas. Therefore, Nessler reagent spectrophotometry is generally used for calibration. At the same time, the alkaline water of slag ash flushing is used to supplement the water of dust collector, which can make the wastewater reused and save water. There are two ways to remove SO<sub>2</sub>, one is first to form salt and then to oxidize, the other is to oxidize and then to form salt. In DC corona discharge plasma flue gas desulfurization, the first way is the main way. SO<sub>2</sub> is oxidized by free radical reaction to form acid mist, which is separated from the gas phase [5]. The high-energy active particles generated by low-temperature plasma can reduce the activation energy of the catalytic reaction, so that the catalyst originally used at high temperature can be used at lower temperature. The experimental results are shown in Figure 1. From the figure, it can be seen that the measured value of ammonia analyzer can reflect the change of ammonia content in flue gas, but it is quite different from the measured result of Nash reagent method. When humidity increases, corona current activated by ammonia decreases under the same activation voltage. The reason is that water vapor is an electronegative gas, which easily adsorbs electrons to generate ions, resulting in a decrease in mobility, which leads to a decrease in corona current. The results show that the simultaneous activation of steam and ammonia is effective.

Table 2 Analysis results of ammonia content in desulfurization tail gas

Sample number	Sample 1	Sample 2
The content of ammonia was determined by ion chromatography(mg/m <sup>3</sup> )	198.36	135.38
The content of ammonia was determined by Nessler's reagent method(mg/m <sup>3</sup> )	203.77	145.62

Because the Nessler reagent spectrophotometry requires the preparation of reagent solution without ammonia, the steps are complicated and time consuming. Moreover, mercury diamide, a highly toxic reagent, must also be used for color development in the analysis, causing certain pollution to the environment. Because the energy consumption index is related to the future operation cost of the technology and also to the manufacturing cost of DC high voltage power supply. Therefore, the energy consumption must reach an acceptable level for practical application, otherwise the technology will not be adopted. The oxidation and reduction paths exist only under the condition of discharge and are parallel paths. However, both the experimental results and the simulation results of microscopic reaction kinetics show that the oxidation path is the main path. Therefore, we introduce ion chromatography into the determination of ammonia concentration in tail gas,

and compare the results with those determined by Nessler reagent in order to establish a rapid, accurate and environmentally friendly analytical method. The experimental results are listed in Table 2. Because of the same flue gas flow rate and different discharge gap, the residence time of flue gas in the corona zone also changes. The longer the discharge gap is, the more conducive to SO<sub>2</sub> removal. The number of free radicals produced by the collision of high energy electrons with water molecules and ammonia molecules produced by corona discharge is higher than that produced by the injection of water vapor and ammonia alone. In this way, when injected simultaneously, the number of oxidized SO<sub>2</sub> molecules is large and the desulfurization rate is high. Therefore, under the same electric field intensity, ammonia gas injected through activated electrode produces more free radicals and ions than that injected from the front end of the reactor, and the desulfurization efficiency is improved.

### 3.3 The influence of flue gas flow rate on removal efficiency

Under the condition that the initial concentration of SO<sub>2</sub> in flue gas is 1200×10<sup>-6</sup>, the desulfurization efficiency can reach 85% when the positive high pressure is 30V and the flue gas flow rate is 15 Nm<sup>3</sup>·h<sup>-1</sup>. The generation of excitation and ionization must be the part of electrons whose energy is equal to the excitation energy and ionization energy. Electrons larger than and smaller than the corresponding energy cannot emit excitation and ionization. Moreover, the electron energy required for the excitation and ionization of water molecules and ammonia molecules are different [8]. The reason is that when ammonia is activated, ammonia moves from high-energy electron region to low-energy electron region. When ammonia gas is not activated, ammonia molecules uniformly enter the electric field region, so compared with the activation, the probability of collision between ammonia gas and high-energy electrons is smaller, and less amino radicals are generated, so the desulfurization efficiency is higher when ammonia gas is activated. The residence time of flue gas in the reactor is 5-6 seconds, the stoichiometric ratio of SO<sub>2</sub> to NH<sub>3</sub> is 1.5:1, and the energy consumption of corona is 1.0-2.5Wh/Nm<sup>3</sup>. Under these operating conditions, the removal rate of SO<sub>2</sub> with initial concentration of 1000-2000PPm can reach more than 85%. In addition, when the flue gas flow rate is less than 25Nm<sup>3</sup>/h, the desulfurization efficiency decreases very slowly. Considering the flue gas treatment capacity and removal efficiency, the flue gas flow rate is generally selected as 20Nm<sup>3</sup>/h, and the desulfurization efficiency is about 75%.

## 4 CONCLUSIONS

Experiments show that Nessler reagent spectrophotometry has strong applicability and can truly reflect the ammonia content in the exhaust gas because it eliminates the interference of other

components in the flue gas. However, this method requires a high level of operation and stability of working conditions for analysts, and takes a long time, so it is not suitable for continuous monitoring. Therefore, as a designer, in the selection of boilers, we must proceed from the actual situation of the project, consider comprehensively and select a reasonable desulfurization process. If the reactor is omitted and the dust collector is powered by positive pulse, the desulfurization rate will be low, the residual ammonia leakage and the proportion of positive salt in the reaction product will be low. When measuring single component ammonia, the ammonia on-line analyzer has rapid reaction and high accuracy. However, under actual working conditions, due to the influence of instrument design and structure, the anti-interference ability is poor, and the measurement results are quite different from the real values. Desulfurization efficiency of single discharge or water absorption is very low, while desulfurization efficiency is greatly improved when water absorption and discharge act together. During the test, flue gas enters from the axis of the high voltage electrode, which is more conducive to the improvement of desulfurization efficiency. Compared with Nessler's reagent colorimetric method, ion chromatography saves a lot of manpower and time, is faster and more convenient, and can be used for analysis of tail gas ammonia in desulfurization experiments.

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# The Application of Popular Elements in Ceramic Design

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**Abstract:** With the development and progress of society, popular elements have penetrated into various fields of ceramic design. Through what form are popular elements used in ceramic design, and what kind of embodiment? This is the problem I want to talk about.

**Keywords:** Popular elements; Ceramics; Applications

## 1. INTRODUCTION

Popular elements are actually the popularity of the original connotation of information elements, that is, the popularity of the collection of information elements. the collection of information elements, within its operational time range, has become a symbol of modern social civilization, and popular elements are mainly reflected by media (such as fashion, music, art design).

## 2. THE COMBINATION OF POPULAR ELEMENTS AND CERAMIC DESIGN

The combination of popular elements and ceramic materials has produced many beautiful works through creative design. the following introduces a variety of popular and ceramic products produced by the combination of exquisite works.

### 2.1 Popular elements - Simplicity



Figure 1

Simplicity is one of the techniques especially worth advocating in ceramic design works, and it is also a very popular trend in recent years. "Minimalism" is the most representative style of interior design in the 1990s, and its influence has covered all fields of art design.

Designers often use simple fashion in the process of ceramic design, if the minimalism as a design style, then its popular time limit can be expected. However, minimalism seems to embody some timeless values,

such as respect for materials, precision of details, and simplification of complex design elements.

As shown in Figure 1, the ceramic works remove redundant and cumbersome cumbersome, forming a simple and nearly perfect design style, using the most concise expression to express the design purpose, such a design is simple and clear, can be enduring.

### 2.2 Popular elements - popular melodies

In the design process, modern ceramic designers will use the element of rhythm, through the combination of points, lines and surfaces, to achieve the purpose of design. the grasp of rhythm directly affects the success or failure of important factors. Or just ups and downs, or calm as water, in short, everything has its own rhythm.

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Figure 2

Rhythm and rhythm have a variety of forms in the shape and space of ceramic modeling. Various components change regularly, increase or decrease rhythmically, and repeat and echo each other, all of which produce rhythm. As shown in Figure 2, it has fluctuating melodies, continuous rhythm changes, segmented melody changes, etc. the rhythm and melody of this ceramic design are expressed from the form to the surface and the line. Such as the size of the body, circumference, upward and downward, opening and closing, lifting, retracting changes: surface ups

and downs, staggered, intermittent, reverse, concave and convex, flipping changes: linear curvature, relaxation, slow, hidden, length, strength.

### 2.3 Popular elements - popular colors



Figure 3



Figure 4

The so-called popular color refers to several or several groups of fashionable colors that are loved or adopted by most people in a certain period and region, that is, fashionable colors. It is a comprehensive product of political, economic, cultural, environmental and psychological activities of a certain period and society. the popular color is the fashionable color, the fashionable color, the novel life color. Popular color is under the guidance of a social concept, one or several colors and color groups spread rapidly and prevailed for a while. From the above definition, the popular color is the concentrated expression of the color preference of the social group, and the color of the

preference will continue to change with the changes of the Times. But color preferences tend to be stable for a long time. There will not be such drastic changes in frequency as those seen in popular colors.

These ceramic designs, exquisite design, diverse styles, manufacturing fashion, leading the trend of ceramic products will emerge in an endless stream, forming a diversified appearance decoration trend - or colorful, full of passion; Or pure fresh, light and soft; Or light and bright, natural harmony; Or mature, profound artistic conception; Or luxurious style, luxurious and elegant; Or simple and elegant, fresh and natural; Or modern fashion, unconventional; Or cleverly conceived, finely carved; Or simple, bright, decent.

### 3. CONCLUSIONS

Popular element is a relative concept, its formation has a special historical background. Behind a work that integrates fashion elements is the historical city of an era or even several eras, which specifically reflects the aesthetic views and value orientation of the time, and this reflection is not static, it is dynamic, fluid, and evolves with the passage of time. Behind a work that integrates fashion elements is the historical city of an era or even several eras, which specifically reflects the aesthetic views and value orientation of the time, and this reflection is not static, it is dynamic, fluid, and evolves with the passage of time.

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# Research On the Integration of Party Building and Volunteer Service for College Students

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**Abstract:** Based on the actual situation, it is necessary to strengthen the research on the integration of college student party building and volunteer service in the development of higher education work. Under the guidance of college student party building, volunteer service should be used as a carrier to achieve effective improvement of the "party building+volunteer service" operation mode, so as to promote the rapid realization of practical education and moral education goals in higher education. Therefore, universities need to attach importance to the exploration of the integration of college student party building and volunteer service, so as to optimize the existing problems in party building work, so that college student party members can take root at the grassroots level, achieve the cultivation of dedication to serving the masses, and also improve the loose status quo in volunteer service. Based on this, this article explores the integration of party building and volunteer services for college students, hoping to provide some help for the development of related work.

**Keywords:** College Students; Party Building; Volunteer Service; Fuse

At present, in order to improve the political level of college students during the period of higher education work, it is necessary to strengthen the development of party building work for college students. Among them, the construction of grassroots party organizations for college students can guide students to participate in political learning, and also guide them to explore the theories they have learned. During this period, it is necessary to promote the effective implementation of the party's line, principles, and policies, and ensure the smooth implementation of various tasks in party building work. During the work period, college student party members also need to attach importance to the development of volunteer service work, so that practical education and moral education can be effectively combined, and ensure that college student party members can enter and serve the masses in their daily learning and life process, in order to fully play the vanguard and exemplary role of party members. The integration of college student party building work and volunteer service work can effectively construct a long-term mechanism for volunteer service of college

student party members, making college student party building work more practical.

## 1. THE PROBLEMS IN THE PARTY BUILDING WORK OF COLLEGE STUDENTS

### 1.1 THE IMPACT OF MULTICULTURALISM

In the rapid development of economic globalization, the trend of cultural globalization has become increasingly evident. At present, China is in a critical period of social transformation, and different ideological and cultural aspects are involved in various fields in our country. Multiculturalism has had a significant impact on the formation of socialist core values among college students, leading to the inability to accurately establish their values. Under the impact of multiculturalism, some educators in universities believe in academic freedom and increase the promotion of Western culture during education and teaching. Some educators blindly worship Western values, leading to college students' tendency to develop liberal thinking during the learning process. These cultures cannot help students establish correct socialist core values and affect their subsequent growth and development [1]. In addition, with the rapid development of the Internet, more and more news and information with distorted values have emerged on the internet. Some information directly appears on campus networks, making it difficult for university students to accurately distinguish information. If they are eroded by distorted information for a long time, it will not only affect the formation of students' values, but also affect their ideological judgments.

### 1.2 PARTY MEMBER DEVELOPMENT EMPHASIZES RESULTS OVER PROCESSES

The application for college student party members has strict procedural procedures, which are mainly used to ensure the quality of party members. However, based on the analysis of the current work on party organization construction among college students, it can be seen that most party branches have not established a targeted quantitative evaluation system during their work period, mainly selecting party members based on students' academic performance and daily work status. Students' ideological status can only be judged from the written materials submitted by students, indicating the formalization of party building work. Grassroots party organizations in

universities generally conduct inspection and education work on the development targets in the early stage, but in the later stage of development, it is easy to overlook the implementation of re-education work, resulting in most probationary party members being left unattended in the later stage. In this case, it is easy to lead to a state of tight and loose management of party members, and the enthusiasm of probationary party members in the later stage will also be affected. The exemplary and leading role of party members cannot be effectively played. Ultimately, it will affect the political consciousness of college student party members, and the theoretical cultivation of college student party members cannot be effectively improved [2].

## **2. EXPLORING THE INTEGRATION PATH OF PARTY BUILDING AND VOLUNTEER SERVICE FOR COLLEGE STUDENTS**

### **2.1 STRENGTHEN EDUCATION ON IDEALS AND BELIEFS, ENHANCE SERVICE AWARENESS**

In the process of carrying out party building work for college students, in order to improve the level of party building work, it is necessary to strengthen the theoretical education of party members, with the most important being the education of ideals and beliefs. Universities are the main battlefield for the inheritance and dissemination of mainstream national culture, which requires strengthening the education of party members' ideals and beliefs. The achievements of ideal and belief education are related to the rise and fall of the great cause of the Chinese nation. The ideals and beliefs of the Party have obvious particularities in both moral requirements and cultural connotations. They are a new product derived from the innovative development of Marxist theory, which enables the Party's ideals and beliefs to be based on the path of socialism with Chinese characteristics, the people, and always represent the fundamental interests of the people. In addition, in order to further enhance the integration effect between party building and volunteer service among college students, universities need to focus on enhancing the awareness of service development among college students. Through the scientific integration of ideals and beliefs with various services such as the masses and society, they should adhere to the service orientation and clarify the core position of service awareness based on the Marxist theoretical system. Ultimately, while effectively strengthening the education of ideals and beliefs, we will comprehensively strengthen the service awareness of college students, thereby promoting the effective integration of party building and volunteer service among college students.

### **2.2 IMPROVE THE INSTITUTIONALIZED SYSTEM OF PARTY BUILDING AND VOLUNTEER SERVICES**

Based on the actual situation, the system itself is the foundation for the effective implementation of various tasks. Therefore, in order to promote the organic integration of party building and volunteer services for college students, universities need to clarify the changes in party building content and object, and scientifically combine the cultivation of commonalities and personalities, in order to promote the continuous improvement of college students' autonomy and self-management ability. Ultimately, comprehensively enhance the enthusiasm of college student party members to participate in party building activities. A comprehensive analysis of volunteer service reveals that it has obvious characteristics such as spontaneity and self-awareness, which often results in a lack of stable material and institutional guarantees in the actual implementation stage of volunteer service. In this context, in order to achieve a good integration of party building and volunteer services for college students, universities must not only clarify the main value of party building, but also incorporate volunteer services into the party building system. By fully leveraging the leading role of volunteer services, we can do a good job in building a volunteer service team for college student party members, increase material support, and effectively create a good atmosphere of volunteer service. Effectively promoting the goals of party building and volunteer service for college students, as well as achieving the goals of moral education and talent cultivation in universities.

## **3. CONCLUSION**

In summary, in the current society, if universities want to scientifically integrate party building and volunteer services among college students, they need to strictly adhere to the principle of systematic publicity and do a good job in promoting party building and volunteer services, and continuously improve the diversity of publicity forms to lay a solid foundation for the integration of party building and volunteer services among college students. In addition, universities need to clarify the ideological characteristics of contemporary college students, ultimately highlighting the integration value of party building and volunteer services, while ensuring that the role of party building volunteer services in educating people can truly be fully realized.

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# Application of Orthopedics in Postoperative Rehabilitation Exercise for Patients with Spinal Fractures

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**Abstract:** Objective: To explore and analyze the application effect of using orthosis in postoperative rehabilitation exercises for patients with spinal fractures. Method: This study was conducted within the orthopedics department, with a total of 62 patients with spinal fractures selected as the research subjects. All patients underwent surgical treatment and underwent early rehabilitation exercises after surgery. According to the admission order of 62 patients, they were divided into a control group and an observation group, with 31 patients in each group. The former group received routine rehabilitation exercise, while the latter group increased the use of orthosis to compare the rehabilitation effects. Result: After rehabilitation treatment, the pain sensation, daily living ability, and motor function of the two groups of patients were evaluated and compared. VAS, ADL, and FMA scores were used as evaluation tools, and the results showed that the observation group had better scores than the control group ( $P < 0.05$ ). Conclusion: Increasing the use of orthosis in postoperative rehabilitation exercises for patients with spinal fractures can promote rehabilitation, daily living ability, and motor ability.

**Keywords:** Spinal fracture; Postoperative; Rehabilitation exercise; Orthosis

## INTRODUCTION

The causes of spinal fractures are complex, usually caused by high altitude falls, traffic accidents, etc., and timely surgical treatment is necessary. Due to the unique nature of the spine, patients often require a longer recovery time after surgery. Therefore, it is necessary to pay attention to strengthening postoperative rehabilitation exercises to prevent complications while promoting recovery. At present, there is a relatively deep application of instrumental assistance in postoperative rehabilitation treatment of fractures. For patients with spinal fractures, relevant orthoses can also be used. Based on this, in this study, we will focus on exploring and analyzing the application of orthoses in postoperative rehabilitation exercise of spinal fractures.

## 1 MATERIALS AND METHODS

### 1.1 GENERAL

This study selected 62 patients with spinal fractures as the research subjects, who were admitted to the orthopedic department from April 2022 to April 2023. Among the 62 patients, 38 were males and 24 were females, ranging in age from 24 to 58 years, with an average age of  $(37.45 \pm 4.12)$  years. They were also divided into a control group and an observation group based on the order of admission, with 31 patients in each group. The study was conducted through a controlled experiment.

### 1.2 METHOD

Implement routine rehabilitation exercise in the control group.

The observation group needs to use orthosis on the basis of regular rehabilitation exercise. ①

Immediate postoperative application: After surgery, patients should use orthoses for fixation and protection as soon as possible, and for patients with spinal fractures, orthoses have a certain degree of hardness and stability, which can provide sufficient support and facilitate better rehabilitation exercises. Adaptation training: Before starting to use orthoses, patients should receive adaptation training, which includes learning how to wear orthoses correctly, daily cleaning and maintenance of orthoses, and coping measures in case of discomfort. In addition, adaptability training should be conducted under the guidance of medical staff to ensure that patients can use orthoses correctly and safely [1]. ③

Gradually increasing activity: In the early postoperative period, patients may need to limit their activity to avoid additional pressure on the surgical site. With the passage of time and the progress of rehabilitation, the amount of activity should be gradually increased, and rehabilitation exercises should be carried out in a step-by-step manner to promote better rehabilitation. Adjusting the orthosis: At different stages of rehabilitation, it may be necessary to adjust the settings of the orthosis. For example, during the patient's gradual recovery process, it is necessary to adjust the hardness or support position of the orthosis to ensure the best support effect. Therefore, as the patient's physical condition improves, it is necessary

to regularly understand the patient's specific rehabilitation situation and adjust the orthosis in a timely manner, or replace it with a more suitable orthosis Regular examination: During rehabilitation treatment, medical staff should regularly check the patient's recovery status, so that doctors can evaluate the patient's recovery and the effectiveness of orthosis use. And it can be used to evaluate the patient's recovery situation, and at the same time, it can timely identify and correct the problems that exist, making the use of orthoses more scientific and reasonable.

1.3 OUTCOME MEASURES

The Visual Analog Scale (VAS) was used to evaluate postoperative pain in patients, with a score range of 0-10 points. the higher the score, the stronger the pain sensation; Secondly, the ability of daily living (ADL) scale was used to evaluate patients' daily living abilities, with a score range of 0-100 points. the higher the score, the better; Finally, evaluate the patient's limb motor function using the Fugl Meyer Motor Function Rating Scale (FMA), with a score range of 0-100 points. the higher the score, the better.

1.4 STATISTICAL PROCESSING

Perform statistical processing on all data information within the group, using SPSS21.0 software as a statistical processing tool. the statistical processing of data mainly revolves around counting data and measuring data, which can be represented by "% and "x ± s" respectively. For cases that comply with normality analysis, they should be tested by "X2" and "t" respectively. If the statistical significance between the data is obvious, it can be expressed as "P<0.05".

2 RESULT

2.1 REHABILITATION SITUATION

**Table 1 Comparison of VAS, ADL, and FMA scores (points)(  $\bar{x}\pm s$ )**

group	Number of cases	VAS	ADL	FMA
Observations	31	2.72±0.41	75.03±8.25	65.06±9.33
control group	31	4.41±0.89	59.32±7.46	54.21±7.54
t-values		5.032	13.336	12.824
P value		<0.05	<0.05	<0.05

According to the evaluation results of VAS, ADL, and FMA scores, the observation group using orthosis for rehabilitation training had better VAS, ADL, and FMA scores than the control group (P<0.05).

3 DISCUSS

For patients with spinal fractures, orthoses play an important role in the postoperative rehabilitation process. After spinal fractures, dislocations, or spinal cord injuries, improper care may lead to complete loss of limb sensation, movement, and reflex function below the spinal cord transverse plane [2] These situations may cause problems such as limb muscle atrophy and joint stiffness, further affecting the recovery of limb function and greatly reducing the patient's quality of life. Orthodontics can assist patients with spinal fractures in restoring posture and movement while reducing pain by providing appropriate support and stability. Not only that, orthotics can also help patients recover motor function by improving muscle strength and balance. As shown in Table 1, the recovery of patients in the observation group was significantly better (P<0.05).

From the analysis of this study, it can be seen that the use of orthoses in postoperative rehabilitation exercises for patients with spinal fractures can promote rehabilitation and reduce pain.

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# Research on Innovative Paths for College Student Management in the Era of Big Data

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**Abstract:** With the continuous development of university funding at the practical level, what students receive through funding has become a topic of social concern. the logistic regression model was used to comparatively analyze the growth of aided students in colleges and universities under different funding types. Based on this, it is believed that gift-incentive funding should be further developed to give full play to the subjective initiative of assisted students; the role of remunerative-nurturing funding should be enhanced to strengthen the vocational education of aided students; targeted assistance should be people-oriented and a multi-dimensional funding and education support system should be actively constructed.

**Keywords:** Types of university funding; Aided students; Development status

## 1 INTRODUCTIONS

Judging from the existing research, many scholars have confirmed the positive significance of university funding in students' growth from different angles, and the effect of funding in educating people has been affirmed. In this study, funding will be divided into types, and the impact of different types of funding on aided students' academic performance, social interactions, career preparation, psychological expectations and other aspects will be comprehensively examined, with a view to refining and enriching the relevant results of research on university funding, and in order to improve the formulation and implementation of university funding policies help frontline workers improve the accuracy and effectiveness of funding work and provide countermeasures and suggestions. [1]

## 2 RESEARCH DESIGN

### 2.1 SURVEY DATA SOURCES

This study conducted a random survey at School C among those who are receiving or have received school funding. A total of 278 questionnaires were distributed and 278 questionnaires were returned. This study uses aided students in the 2021-2022 school year as the analysis object. After eliminating some unqualified samples, 255 qualified samples were finally retained.

### 2.1 RESEARCH HYPOTHESIS

The idea that college funding helps students grow has been confirmed in many studies. What this study hopes to further explore is whether there are similarities and differences in the roles played by different types of financial aid, that is, whether there are significant differences in academic performance, social interaction, career preparation, and psychological expectations among students who receive different types of financial aid. From the perspective of economic rationality, individuals will behave accordingly based on incentive orientation. Based on this, this study proposes the following hypotheses.

H1: the type of financial aid has a significant impact on the academic performance of aided students. Students who receive gift-incentive financial aid have better academic performance. Students who receive repayment-guaranteed financial aid and reimbursement-nurturing financial aid have better academic performance than students who do not receive such financial aid. There was no significant difference in performance.

H2: the type of funding has a significant impact on the social interactions of aided students. Students who receive gift-incentive funding are more active in social interactions. Students who receive repayment-guaranteed and reimbursement-training funding are more socially engaged than students who do not receive such funding. There was no significant difference in communication.

H3: the type of funding has a significant impact on the career preparation of aided students. Students who receive gift-incentive funding are more fully prepared for their careers. Students who receive repayment-guaranteed and reimbursement-training funding are better prepared than students who do not receive such funding. There were no significant differences in preparation.

H4: the type of funding has a significant impact on the psychological expectations of aided students. Students who receive gift-incentive funding have better psychological expectations, and there is no significant difference in academic performance between students who receive repayment-guaranteed and reimbursement-development funding and students who do not receive such funding.

## 3 MEASUREMENTS OF VARIABLES



### 3.1 EXPLAINED VARIABLES

The growth of aided students. This study will measure the growth of aided students from four aspects: academic performance, social interaction, career preparation, and psychological expectations.

### 3.2 EXPLANATORY VARIABLES

The type of aid the student receives. In this study, since the survey subjects were all funding recipients recognized by the school in that year, and gift-guaranteed funding covered all members of this group, the comparative study on the educational effects of different types of funding mainly focused on repayment-guaranteed funding. Three types of funding are available: gift-incentive and reward-training.

### 3.3 CONTROL VARIABLES

In addition to the type of financial aid received, the development of student financial aid recipients is also affected by other personal and family factors, including: gender; years in school; household registration type; place of origin; whether the student is an only child; and family economic status.

## 4 DATA ANALYSIS AND RESULTS

### 4.1 The impact of funding types on the academic performance of aided students

The impact of funding type on "whether or not students fail" of aided students. In terms of impact, among the core independent variables, receiving gift-incentive funding has a significant negative impact on "whether students fail". Among aided students, those who receive gift-incentive funding are more likely to fail. Low, 0.079 times that of those who did not receive such funding; "receiving reimbursement-guaranteed funding, reimbursement-nurturing funding" has no significant correlation with whether the aided students failed the course. Among the control variables, "student origin" "Years in school" is significantly related to the dependent variable. the impact of funding type on "personal performance satisfaction" of aided students. Among the core independent variables, receiving gift-incentive funding has a significant impact on "personal performance satisfaction" of aided students. Positive influence.

In summary, hypothesis 1 is confirmed.

### 4.2 THE IMPACT OF FUNDING TYPES ON SOCIAL INTERACTIONS OF AIDED STUDENTS

The social behavior of aided students who receive gift-incentive funding is more active; there is no significant correlation between receiving repayment-guaranteed funding and repayment-nurturing funding and the "frequency of group activities" of aided students. Hypothesis 2 is confirmed.

### 4.3 THE IMPACT OF FUNDING TYPES ON THE CAREER PREPARATION OF AIDED STUDENTS

The impact of funding types on the "career planning situation" of aided students. Among the core independent variables, aided students who receive gift-incentive funding are more likely to have a clear

career plan, 1.724 times that of students who do not receive such funding; students who receive repayment-guaranteed funding and reimbursement-cultivation funding There is no significant correlation with the "career planning situation" of aided students. Among the core independent variables that influence the type of funding on the "internship situation" of aided students, receiving gift-incentive funding, repayment-guaranteed funding, and remuneration-training funding have no significant correlation with the "internship situation" of aided students.

In summary, part 3 of the hypothesis is true.

### 4.4 THE IMPACT OF FUNDING TYPES ON THE PSYCHOLOGICAL EXPECTATIONS OF AIDED STUDENTS

Among the core independent variables, receiving repayment-guaranteed funding is significantly negatively related to the future expectations of aided students. That is, students who receive this type of funding show greater uncertainty about the improvement of their personal and family lives in the future, which may be related to loan repayment. It is related to the pressure brought by it; receiving gift-incentive funding and remuneration-training funding has no significant correlation with the future expectations of aided students, and hypothesis 4 is not established. [2]

## 5 CONCLUSION AND DISCUSSION

Empirical research has verified the positive role of funding in promoting the academic progress of aided students and strengthening interactions with others. Comparing the effects of different types of funding also supports to a certain extent the inference that economically rational people conduct corresponding behaviors based on incentive orientation under the incentive mechanism, which helps to understand the effect of funding education in more detail, and then to think about the education system. further development and improvement.

The policy implications of this study include the following aspects: First, further develop gift-incentive funding and pay attention to the subjective initiative of aided students. Compared with other types of funding, gift-incentive funding is more associated with honor and has a stronger sense of value and symbolic meaning.

Secondly, enhance the educational role of remunerative-nurturing funding and strengthen the vocational education of aided students. We should give full play to the educational role of remunerative-nurturing assistants, with the help of work-study, "three assistant" positions and other platforms. On the one hand, we should strengthen social cooperation, expand practice bases, and enrich practical positions, especially focusing on professional and professional skills. the development of smart jobs; on the other hand, systematic and standardized pre-job training, daily management, performance appraisal, quality

return visits, etc. should be carried out to effectively improve the effectiveness of labor education.

Finally, we should provide targeted assistance with a people-oriented approach and actively build a multi-dimensional funding and education support system. the goal of university funding is to educate people. Therefore, funding workers should also continue to broaden their understanding of the connotation of "funding". In addition to material assistance, they should also pay attention to the academic progress, interpersonal communication, mental health and other multiple dimensions of aided students. To meet the needs, actively explore the combination of funding+student aid, funding+social interaction,

funding+psychology, etc.

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# Reform of the Practice System of Marine Engineering Technology under the "1+X" Certificate System

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**Abstract:** This article takes the Marine Engineering Technology major of Jiangsu Maritime Vocational and Technical College as an example to elaborate on the reform of the practical system of the Marine Engineering Technology major under the "1+X" certificate system. Taking the pilot work of the "1+X" certificate system as an opportunity, it strengthens deep cooperation between schools and enterprises, integrates the requirements of the "1+X" certificate system into talent cultivation plans, deepens curriculum teaching reform, optimizes practical teaching conditions, and reforms practical training teaching models. Explored the establishment of a practical teaching system for marine engineering technology under the "1+X" certificate system to ensure the smooth implementation of the pilot work of the "1+X" certificate system.

**Keywords:** "1+X" certificate system; Major in Marine Engineering Technology; Practical system

## INTRODUCTION

The Ministry of Education and the Ministry of Finance have successively issued the "Notice on Relevant Matters Concerning the Pilot of the "1+X" Certificate System" and the "Pilot Plan for Implementing the Academic Certificate+Several Vocational Skill Level Certificates "System in Colleges and Universities". From the content of the documents, the "1+X" certificate system is a major reform in the development of vocational education in China. Jiangsu Maritime Vocational and Technical College should strengthen deep cooperation between schools and enterprises during the implementation of the "1+X" certificate system, and explore the establishment of a scientific and reasonable practical teaching system in accordance with the requirements of the "1+X" certificate system, to enhance students' vocational skills and employment ability, and to cultivate high-quality and highly skilled talents for society.

## 1. CLEAR TARGET POSITIONING AND DEEP COOPERATION BETWEEN SCHOOLS AND ENTERPRISES

The Marine Engineering Technology major of Jiangsu Maritime Vocational and Technical College has signed school enterprise cooperation agreements with multiple shipping companies. According to the contents of the agreements, these companies will provide assistance in student internships, order class enrollment, course standard development, and provide services for students in teacher training, student employment, and other aspects. At the same time, these enterprises will also provide research and development support for new technologies for the school. In addition, the college has signed a school enterprise cooperation agreement with Jiangsu Ocean Shipping Co., Ltd., in which senior technical personnel are appointed by the enterprise as part-time teachers in the marine engineering technology major of our college to participate in the teaching work of the marine engineering technology major. After completing courses and practical training in the enterprise, students will be assessed and issued certificates by the school.

## 2. BUILDING A HIGH-LEVEL PRACTICAL TRAINING BASE AND DEEPENING CURRICULUM AND TEACHING REFORM

The practical teaching base for marine engineering technology is jointly built by multiple enterprises such as China Ocean Shipping Group. the pilot work of the "1+X" certificate system was fully launched in September 2019. In order to achieve the teaching reform results of the Marine Engineering Technology major in the Inspection College and fully leverage the main role of enterprises in talent cultivation, the college signed a "Cooperation Agreement for the Pilot Project of the 1+X Certificate System in the Marine Engineering Technology Major" with China Ocean Shipping Group and Jiangsu Ocean Shipping Co., Ltd. At the same time, the school also collaborated with Jiangsu Ocean Shipping Co., Ltd. to establish a pilot training base for the "1+X" certificate system, deepening cooperation between the school and the enterprise.

### **3. DEEPENING THE REFORM OF "THREE TEACHINGS" AND OPTIMIZING THE CONDITIONS OF PRACTICAL TEACHING**

3.1. Strengthen the construction of a "double qualified" teaching staff. Teachers are the backbone of practical teaching and an important guarantee for achieving the "1+X" certificate system. the college has deepened the "three education" reform, improved the overall quality of the teaching team, and actively introduced high-level enterprise masters and industry experts to achieve the construction of a dual teacher structure teaching team.

3.2. Deepen the reform of textbook construction. We have deeply promoted the construction of textbooks, established a mechanism for textbook writing that involves schools, enterprises, and industries, actively aligned with international and domestic professional standards, developed a curriculum system based on work processes, and developed curriculum standards for learning areas based on work processes.

3.3. Adhere to the integration of "teaching, learning, and doing", focus on improving the professional level and quality of teachers, improving students' professional quality and abilities, and cultivating high-quality technical and skilled talents.

3.4. Optimize practical teaching conditions. Strengthen the construction of off campus practice bases through various forms such as school enterprise cooperation and integration of industry and education. Actively promote the upgrading, transformation, and open sharing of campus training bases, and build a shared internship training base.

### **4. STRENGTHEN COLLABORATIVE EDUCATION BETWEEN SCHOOLS AND ENTERPRISES, AND EXPLORE PRACTICAL TEACHING MODELS**

According to the pilot work requirements of the "1+X" certificate system, actively explore the reform of practical teaching mode. By constructing a "1+X" certificate training and examination base, teaching will be carried out in accordance with teaching modes such as "theory+practical operation", "multiple certificates for one lesson", and "online+offline", and practical teaching mode reform will be explored through collaborative education between schools and enterprises. Specifically, it includes the following aspects:

4.1 Develop a scientific and reasonable practical teaching reform plan guided by the "three aspects" The college is guided by the "three aspects", adheres to the guidance of social needs, takes ability as the standard, and aims to cultivate applied talents. In accordance with professional characteristics and ability training requirements, the "Jiangsu Maritime Vocational and Technical College Practice Teaching Outline" has been revised, and the practice teaching system has been reformed. the teaching model of "learning by doing, learning by doing" has been

proposed, A series of documents have been formulated, including the "Evaluation Measures for the Quality of Practical Teaching at Jiangsu Maritime Vocational and Technical College" and the "Construction Plan for the Practical Training Base of Jiangsu Maritime Vocational and Technical College". In the specific implementation process, according to the requirements of the "three aspects", the practical teaching outline and the construction plan of the training base will be revised and improved. At the same time, emphasis should be placed on curriculum construction and reform. the college and the enterprise jointly explore issues related to talent cultivation models, curriculum systems, teaching methods, etc., and jointly develop talent cultivation plans and curriculum standards that are in line with the actual situation of the enterprise, so that students can connect with the job positions of the enterprise during their school years.

4.2 Deepen practical teaching reform with the core of cultivating students' professional abilities

The practical teaching in vocational colleges is an important component of the talent training program in vocational colleges. Through practical teaching, vocational colleges can cultivate students' practical operational skills, enabling them to master professional knowledge and familiarize themselves with operating procedures, laying a solid foundation for future employment or entering society. Through practical teaching, students' professional and comprehensive qualities can also be improved. However, there are some problems in the practical teaching of vocational colleges at present: firstly, some schools do not attach enough importance to practical teaching, and the investment in practical teaching funds is insufficient; Secondly, some schools have not yet established a long-term mechanism for school enterprise cooperation, and have not formed a truly deep cooperative relationship with enterprises; Thirdly, some vocational college teachers lack practical teaching experience, and the overall quality of the teaching team needs to be improved. To address these issues, we will focus on cultivating students' professional abilities and deepen practical teaching reform. Specifically, implementing project-based teaching in the teaching of professional skills courses; Introducing corporate culture into the construction of campus training bases; Establish a "dual mentor system" in school enterprise cooperation.

4.3. Build a three-dimensional practical teaching system with a focus on the "Five Connections"

In order to better promote the reform of practical teaching, the school actively explores new models of practical teaching, with a focus on the "five connections", and constructs a three-dimensional practical teaching system, that is, the connection between majors and positions, the connection between course content and professional standards, the connection between teaching and production

processes, the connection between teaching and production conditions, and the connection between student development and job development. At the same time, the school has also established multiple training rooms to conduct in-depth cooperation with major shipping companies, port enterprises, etc., and promote school enterprise cooperation. Deep cooperation is carried out through various forms such as "order based", "modern apprenticeship system", "on-the-job internships", and "off campus training bases". At present, the school has more than 50 enterprises stationed in its on campus and off campus training bases. the school has conducted long-term cooperation with enterprises such as Jiangsu Zhongchuan Heavy Industry 702 Institute and Nanjing Haichang Shipbuilding Co., Ltd. to jointly build majors and cultivate orders, achieving a win-win situation in school enterprise cooperation.

### 5. CONCLUSION

The "1+X" certificate system is an innovation and exploration of the talent cultivation model in vocational education. Jiangsu Maritime Vocational and Technical College will continue to take the "1+X" certificate system pilot as an opportunity to carry out the "1+X" certificate system pilot work in the field of marine engineering technology, optimize practical teaching conditions, reform practical training teaching models, and actively explore and practice, in order to cultivate high-quality technical and skilled talents who

meet the standards of the International Maritime Organization. It has made positive contributions to improving China's maritime industry service capacity, promoting the construction of the "the Belt and Road" and safeguarding national maritime rights and interests.

### FUND PROJECT

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# Research On the Ways to Enhance the Employment and Entrepreneurship Ability of College Students Based on Employment Psychological Capital

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**Abstract:** Universities are an important component of China's complete education system, responsible for cultivating high-quality, high-precision talents, and playing a crucial role in national construction and social development. Therefore, ensuring the scientific, comprehensive, and adaptive nature of university education is of great significance and value. Based on the actual performance of current college students in social development, many college students are facing the severe problem of employment difficulties, and even some college students have not found a job for several years after graduation. In this situation, university education needs to focus on improving the employment and entrepreneurship abilities of college students, providing strong support for them to integrate into social development faster and better, and contribute their own value. This article provides a detailed analysis of how to enhance the employment and entrepreneurship abilities of college students based on employment psychological capital, with the aim of sharing and communicating with relevant educators.

**Keywords:** Higher Education; Employment Psychological Capital; Employment and Entrepreneurship Ability; Improvement Strategy

## INTRODUCTION

In recent years, the issue of social employment and entrepreneurship among college students in China has become increasingly prominent. Many college students are facing the dilemma of being unemployed upon graduation, and the reasons for this social phenomenon are diverse. Among them, college students' employment psychology and abilities account for a large proportion. Some college students have a mentality of not achieving high results but not achieving low results, believing that their abilities and knowledge can lead to better jobs. Therefore, they hold a reluctant attitude towards grassroots positions. In addition, some college students lack an optimistic and positive attitude, and facing repeated failed job

applications is like playing eggplant, even losing confidence and determination in finding a job. The application of the concept of employment psychological capital in the cultivation of college students' employment and entrepreneurship abilities can help them correctly handle employment and entrepreneurship issues, and help them plan their career and life development. This plays a crucial role in showcasing their talents and unleashing their own value. Based on this, college career planning education should be based on the current social development status, study employment psychology from the actual performance of college students, practice the concept of employment psychological capital, and innovate educational models and methods, aiming to comprehensively improve the employment and entrepreneurial abilities of college students.

## 1. THE BASIC CONCEPT OF EMPLOYMENT PSYCHOLOGICAL CAPITAL

Psychological capital refers to the psychological literacy formed by individuals in their long-term growth and development, which can also be referred to as a healthy and positive psychological state and ideological consciousness. Employment psychological capital can be seen as a psychological state of job seeking and employment, that is, practitioners can always maintain an optimistic, determined, and confident attitude, and can hold hope no matter what setbacks or difficulties they face, and can make the greatest effort to overcome difficulties [1]. Psychological capital mainly includes the following psychological states, specifically:

Hope, a person who holds no hope for anything, cannot create any value, and actual life will also become a mess. Without a good expectation and hope in job hunting and employment, it is easy to abandon oneself and lose direction after encountering obstacles, and no employer is willing to open the door to such people.

Optimism, people with an optimistic mindset can see that everything is beautiful and can attribute bad



things to temporary reasons, and good things to lasting reasons. Employment entrepreneurs have an optimistic mindset and are able to move forward even in the face of difficulties and setbacks, often making it easier for them to succeed.

Resilience, in the face of setbacks and difficulties, many people only complain and even give up halfway. These people lack the spirit of perseverance. Employed entrepreneurs possess resilience and can quickly recover from adversity, failure, conflict, responsibility, and pressure to continue striving and moving forward.

Emotional intelligence, which is good at feeling the feelings of oneself and others, self motivation, and effective management of one's emotions, is a symbol of a person's gradual maturity and rationality, and also a stepping stone towards a successful life.

At present, college students are facing a social situation of difficult employment, facing numerous difficulties on the path of job seeking, employment, and entrepreneurship. This has led to changes in the psychological state of some college students, even leading to a "dead end" of self abandonment and direct lying down. Based on the progressiveness and scientificity of the concept of employment psychological capital, its application in the education work to improve the employment and entrepreneurship ability of college students can protect the future life and career development of college students.

## **2. THE INFLUENCE OF EMPLOYMENT PSYCHOLOGICAL CAPITAL ON THE EMPLOYMENT PSYCHOLOGY OF COLLEGE STUDENTS**

The concept of employment psychological capital proposes four psychological states, namely hope, optimism, self-efficacy, and resilience. Each state of mind has a significant impact on the employment psychology of college students, which is manifested in the following aspects: firstly, college students' transition from campus to society is a new stage of life, and at this time, college students have hope for the future, which can form goals and plans in job hunting and employment [2]. Secondly, it is inevitable for college students to encounter various setbacks when they first enter society. They maintain a positive and optimistic attitude, and even if they encounter repeated obstacles in job hunting and employment, they can always forge ahead with a smile on their face, without feeling frustrated and resentful all day long. Thirdly, getting used to a privileged living environment can easily lead to the idea of giving up in the face of difficulties, which is the biggest obstacle to college students' employment and entrepreneurship. When college students develop good resilience and are able to persevere and move forward courageously in employment and entrepreneurship, they can quickly recover their fighting spirit and state even when

encountering life's Waterloo. Fourthly, the concept of employment psychological capital can help college students have a clearer understanding of their own abilities and values, and better position themselves in employment, so that they can obtain more employment opportunities.

## **3. ANALYSIS OF THE CURRENT SITUATION OF EMPLOYMENT PSYCHOLOGY AMONG COLLEGE STUDENTS**

Employment psychology is a key condition that affects the smooth employment of college students. A comprehensive analysis of the employment psychology of college students is beneficial for improving their employment and entrepreneurship abilities through the concept of employment psychological capital. In terms of career planning education for college students, it is necessary to conduct in-depth social research and explore the employment psychology of contemporary college students.

### **3.1 LOW SELF-EFFICACY AND SEVERE ANXIETY**

Self efficacy is a correct understanding of one's own abilities, energy, and value, manifested as an individual's belief in being able to complete a specific task in a specific environment with cognitive resources. Only by possessing a good sense of self-efficacy can college students form initiative and confidence in employment and entrepreneurship [3]. However, based on the actual performance of current college students in job hunting and employment, many college students have low self-efficacy and severe anxiety. For example, some college students feel inadequate in their self perception ability and lack social experience, believing that they cannot find suitable jobs, or are unable to handle and complete their positions and work. This self negative psychological state and ideological consciousness make it difficult for college students to adapt to the development of modern society, and they will fall behind in job hunting and employment. In addition, some college students are unable to effectively manage and adjust their emotions. Faced with minimal setbacks and disappointments, they may develop anxiety, leading to a loss of objective judgment and ultimately being in a negative state of job seeking and employment. If college students' job search and employment are seen as a battle, they always bear enormous psychological pressure and emotional burden, making it difficult to accelerate and move forward easily, which will slow down the process of college students' integration into society.

### **3.2 LACK OF OPTIMISTIC AND PROACTIVE ATTITUDE**

Contemporary college students are in an era of employment where diplomas are flying all over the world. It is not surprising that graduate, master's, and doctoral students are in society, which to some extent

increases the competitiveness of employment and exacerbates the situation of difficult employment for college students. Faced with this social employment situation, many college students have shown a lack of optimism, and even some have abandoned themselves and lost their fighting spirit. For example, when college students encounter setbacks in the process of job hunting and employment, they always attribute the setbacks to persistent reasons and believe that their inability to find a job is a certain and inevitable event, thus giving up the idea of continuing to work hard. This is the main manifestation of the lack of optimistic and positive attitude among college students [4]. In addition, college students lack initiative in job hunting and employment, always viewing events with a natural mindset. For example, the reluctance to self-recommend in employment and relying on others to give oneself opportunities can seriously hinder the career development of college students.

### 3.3 HESITANT ABOUT CAREER DEVELOPMENT

One of the current situations of job hunting and employment for contemporary college students is that one mountain looks at the other, which reflects their hesitation in dealing with career development. They are unable to plan their future development path and direction, and miss out on many opportunities to realize their own value [5]. For example, when college graduates first enter society to search for a job and encounter a suitable employer proposing to sign a contract, they may hesitate and believe that they can find a better job with their diploma and abilities. In addition, some college students, after successfully signing a contract, want to terminate their contract due to various issues after working for a period of time, which leads to an increase in college student default events and a decrease in the evaluation of college students by employers. The ultimate result is that employers would rather hire experienced individuals than choose fresh graduates.

### 3.4 SOME COLLEGE STUDENTS LACK PERSEVERANCE SPIRIT

It is a normal phenomenon for college students to repeatedly encounter obstacles when they first enter society, but for those who lack perseverance, they are prone to giving up employment, lying flat directly, and giving up on themselves. This is a manifestation of the lack of resilience in employment psychological capital [6]. For example, after successfully obtaining a bachelor's degree certificate, some college students are filled with beautiful expectations for their future careers and life. However, when they are physically aware of the difficulties of job hunting and employment, they develop a mentality of self-abandonment and resentment, believing that they have a culture but cannot fully demonstrate their skills. Under this psychological state, college students are easily eliminated by society. In addition, some college students have developed a fear of job competition

under enormous employment pressure, and even have the wrong idea of giving up competition. In addition, some college students, in the process of employment, face difficulties and rejection from their leaders, and even choose to resign or transfer directly. Little do they know that life is not smooth sailing, and only through experience and adversity can they grow. As can be seen from the above, the lack of perseverance and perseverance in job hunting and employment is a common psychological problem among contemporary college students in employment.

## 4. STRATEGIES FOR IMPROVING THE EMPLOYMENT AND ENTREPRENEURSHIP ABILITY OF COLLEGE STUDENTS THROUGH MULTIPLE MODELS

The support of the concept of employment psychological capital can enhance the employment and entrepreneurship abilities of college students, laying a solid foundation for their future development and value expression. Based on the analysis of the current social employment situation of college students, universities should increase their efforts in career development planning and education in talent cultivation, helping them form psychological capital that is conducive to the development of entrepreneurship and employment. In response, the following text mainly proposes effective strategies for cultivating college students' entrepreneurial and employment abilities from three dimensions: overall mastery of talent cultivation plans, layered implementation of curriculum design, and in-depth reform of teaching methods.

### 4.1 Master the talent cultivation plan globally

The rapidly changing social development situation has led to a constantly changing demand for talents. If universities do not recognize this law in talent cultivation, it is difficult to ensure smooth entrepreneurship and employment for college students, and it is even more difficult to deliver high-quality talents that meet the development needs to society. Based on this, in the teaching work of improving the entrepreneurial and employment abilities of college students, it is necessary to formulate a comprehensive talent cultivation plan in conjunction with social development, in order to lay a solid foundation for the career development of college students. Relying on the superiority and progressiveness of the concept of employment psychological capital, colleges and universities need to introduce the talent cultivation concept of "prediction before planning". Specifically, first, predict the future career development and employment situation of college students, clarify the training direction of entrepreneurship and employment ability, for example, do a good job of psychological testing and professional ability evaluation for students, understand their career development intentions, and carry out career planning education in combination with their majors. Secondly,



based on the academic performance and career evaluation results of college students, help them plan their entrepreneurial and employment directions, and offer courses such as career psychological counseling and career planning to help them correctly understand the employment situation and their own strengths, strengths, and weaknesses.

By implementing a talent cultivation strategy of first predicting and then planning, the concept of employment psychological capital can be more targeted and applied to systematically cultivate the entrepreneurial and employment abilities of college students, which plays an important role in comprehensively improving the employment rate of college students.

#### 4.2 Layered Implementation Curriculum

Firstly, based on the school level, provide an overview of the talent development process. Colleges and universities need to combine the lack of entrepreneurial and employment abilities and literacy among contemporary college students, and set up professional employment psychological counseling courses to help them form psychological capital in the four dimensions of optimism, hope, resilience, and self-efficacy, ensuring that college students actively progress in their future career development. Secondly, deepen the implementation of psychological capital cultivation at the teacher level. the development of college students' entrepreneurial and employment abilities should not only focus on cultural knowledge teaching and technical teaching, but also pay attention to the development of their professional spirit and ideological quality. Only in this way can we help college students ride the wind and waves in their future development. Based on this, teachers need to integrate the concept of employment psychological capital into their professional courses, and successfully integrate professional teaching and career planning education. For example, in carrying out specific professional course teaching work, teachers should cooperate with ideological and political education work, integrate employment psychological capital throughout the entire teaching activity, and help students form an optimistic and positive attitude, persistent quality, and always maintain a hopeful mindset.

#### 4.3 Deepen the reform of teaching methods and implement multi-channel vocational planning education

Improving the entrepreneurial and employment abilities of college students requires relying on scientific teaching methods, which requires teachers to practice the concept of employment psychological capital, innovate teaching methods based on the current situation of college students' social employment development, and build a multi-channel career planning education system. Firstly, deepen the reform of traditional teaching methods. Many teachers are enthusiastic about using theoretical indoctrination

teaching methods in career planning education, always preaching big truths to students as outsiders. This not only easily arouses students' aversion, but also makes it difficult to ensure the effectiveness of career planning education. In this regard, teachers should adopt a more practical teaching approach to meet the needs of college students for future career development. For example, relying on the sensitivity of college students to data, teachers can use the employment data of recent years to lead college students to analyze the future employment situation, understand the changing characteristics of society's demand for talent, and permeate the concept of employment psychological capital in this process. This teaching method is more convincing for college students and naturally leads to better career planning and education outcomes. Secondly, closely monitor students' psychological performance during their internship period. Teachers closely follow students' internships and choose opportunities for educational work, such as conducting regular career assessments on college students to understand their erroneous ideas and unhealthy attitudes during internships. They then provide employment psychological counseling to college students, with a focus on cultivating employment psychological capital, which is crucial for improving their entrepreneurial and employment abilities.

#### CONCLUSION

In summary, the application of the concept of employment psychological capital in the cultivation of college students' entrepreneurial and employment abilities is beneficial for them to form a positive psychological state of entrepreneurship and employment, which plays an important role in improving the success rate of college students' entrepreneurial and employment. the previous article mainly analyzed the impact of employment psychological capital on college students' employment, the current situation of college students' entrepreneurship and employment, and strategies to improve their creativity and employment ability. It is hoped that this can be helpful for the cultivation of higher talents in China.

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# Research On Safety Appraisal Scheme of Steel Structure Workshop

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**Summary:** Building safety testing is an important part of evaluating the safe use of buildings. Selecting different monitoring schemes or different reinforcement measures according to different monitoring data of steel structure buildings plays a crucial role in the safety control of steel structure buildings.

**Keywords:** Steel Structure Plant; Deformation Monitoring; Monitoring Scheme

In 2018, a three-story steel structure building under construction in Putian City, Fujian Province collapsed, resulting in 5 deaths, 2 minor injuries, and economic losses of 9.9 million yuan. the cause of the collapse was the overall collapse caused by the instability of the steel structure column at the bottom of the building. Therefore, the structural safety inspection of steel structure buildings is very important. According to the different monitoring data of steel structure buildings,

selecting different monitoring schemes or different reinforcement measures plays a vital role in the safety control of steel structure buildings.

## 1. PROJECT OVERVIEW

### 1.1 Construction survey

A steel structure factory building was built in 2010. the number of floors of the building is two floors above the ground. the building height is 13 m. the building area is more than 8, 000 square meters. the structure type is portal steel frame structure. the foundation form of the building foundation is independent foundation under reinforced concrete column. the seismic fortification intensity of the area where the building is located is 8 degrees (0.20g), the first group, and the seismic fortification category of the building is Class D.

### 1.2 Fundamental state survey

#### 1.2.1 Questionnaire on basic situation of buildings

Basic information of buildings	Building area	8000 m <sup>2</sup>		Service life	50 years	
	Number of layers	Second floor above ground			Site classification	II
	Length	108.0m	Wide	36.0m	Height	13m
Foundation	Foundation design level	Second order	Foundation form	Independent foundation under column		
Superstructure	Agent architecture	Steel portal frame	Floor/roof	Floor: Composite floor Roof: Purlin+Profiled steel sheet		

## 2. DETECTION AND IDENTIFICATION BASIS AND DETECTION EQUIPMENT

### 2.1 The standard standards on which the detection is based

- (1) 《Technical standards for building structure inspection》 (GB/T50344-2019);
- (2) 《Construction quality acceptance standard of steel structure engineering》 (GB50205-2020);
- (3) 《Technical standard for on-site inspection of steel structure》 (GB/T50621-2010);

### 2.2 Specifications and standards for calculation and identification analysis

- (1) 《Standard for reliability appraisal of industrial

buildings》 (GB 50144-2019);

(2) 《Code for design of building foundation》 (GB 50007-2011);

(3) 《Building seismic appraisal standard》 (GB50023-2009);

(4) 《Steel Structure Design Standard》 (GB50017-2017);

(5) 《General Code for Identification and Reinforcement of Existing Buildings》 (GB 55021-2021);

(6)《General specification for engineering structures》 (GB 55001-2021);

(7) 《Technical specification for high strength bolted connections of steel structures》 (JGJ82-2011);

- (8) 《Steel Structure Design Standard》 (GB50017-2017);  
 (9) 《Technical code for steel structure of light-weight buildings with portal frame》 (GB 51022-2015);  
 (10) 《Hot rolled H-beam and split T-beam》 (GB/T 11263-2017).

### 3. ON-SITE DETECTION AND IDENTIFICATION AND ANALYSIS

#### 3.1 Structural system investigation and plane layout

After on-site investigation and testing, the layout of the building structure is as shown in 1.2. 1. the main dimensions of steel columns are  $500 \times 320 \times 12 \times 18$ ,  $450 \times 320 \times 12 \times 18$ , etc. the main dimensions of steel beams are  $700 \times 320 \times 12 \times 22$ ,  $(600 \sim 350) \times 150 \times 6 \times 8$ , etc.

#### 3.2 Foundation inspection

After inspection, no phenomenon such as the inclination of the superstructure caused by the uneven settlement of the foundation and the foundation was found. No bad phenomena such as floor cracking and ground backwater caused by excessive settlement of the foundation were found. At present, the foundation of the building is in normal working condition.

#### 3.3 Detection of upper bearing structure

The main contents of the upper bearing structure detection are as follows: steel member appearance quality detection, axis size detection, steel beam and steel column section size detection, steel column verticality detection, weld appearance quality detection, high strength bolt appearance quality detection

The criteria are as follows [1] [2] [3]:

Serial number	Project name	Refer to norms or standards	Permissible range of specification
1	Appearance quality inspection of steel members	《Construction Quality Acceptance Code for Steel Structure Engineering》 (GB50205-2020), 《Technical Standard for Field Inspection of Steel Structure》 (GB/T50621-2010)	According to the 'steel structure engineering construction quality acceptance standard' (GB50205-2020) axis size allowable deviation $\pm 5\text{mm}$
3	Axis size detection	《Steel structure engineering construction quality acceptance standard》 (GB50205-2020), 《Building structure testing technical standard》 (GBT50344-2019)	According to the 'steel structure engineering construction quality acceptance standard' (GB50205-2020) axis size allowable deviation $\pm 5\text{mm}$ .
4	Steel beam, steel column section size detection	《Technical standards for on-site inspection of steel structures》 (GB/T50621-2010), 《Technical standards for inspection of building structures》 (GBT50344-2019), 《Hot rolled H-beam and split T-beam》 (GB/T 11263-2017)	According to the allowable deviation of H-beam width and height of 《hot rolled H-beam and split T-beam》 (GB/T 11263-2017), $\pm 3\text{mm}$ ; tw allowable deviation is $\pm 0.7\text{mm}$ , allowable deviation is $\pm 1.0\text{mm}$
5	Verticality detection of steel column	《Construction Quality Acceptance Code for Steel Structure Engineering》 (GB50205-2020), 《Technical Standard for Field Inspection of Steel Structure》 (GB/T50621-2010)	《Code for acceptance of construction quality of steel structure engineering》 (GB50205-2020): not more than $H/1000$ , and not more than $10\text{mm}$ .
6	Weld appearance quality inspection	《Code for Acceptance of Construction Quality of Steel Structure Engineering》 (GB50205-2020), 《Technical Standard for Inspection of Building Structures》 (GBT50344-2019)	Cracks, incomplete welding, root shrinkage, undercut, arc scratches, poor joints, surface pores, and surface slag-containing first-stage welds are not allowed to occur.
7	Appearance quality inspection of high-strength bolts	《Code for Acceptance of Construction Quality of Steel Structure Engineering》 (GB50205-2020), 《Technical Standard for Inspection of Building Structures》 (GBT50344-2019)	1. After the final screwing of the high-strength bolt connection pair, the bolt thread buckle should be exposed to 2-3 buckles, of which 10% of the bolt thread buckles are allowed to be exposed to 1 buckle or 4 buckles; 2. the friction surface of high strength bolted joints should be kept dry and clean. There should be no flash, burr, welding spatter, welding scar, oxide scale, fouling, etc. the friction surface should not be painted except for the design requirements.

#### **4. CHECKING CALCULATION OF STRUCTURAL BEARING CAPACITY**

According to the relevant provisions of 《Unified Standard for Reliability Design of Engineering Structures》 (GB50153), 《Load Code for Building Structures》 (GB50009), 《Design Code for Portal Steel Frame Structures》 (GB50003), 《Classification Standard for Seismic Fortification of Building Engineering》 (GB50223) and 《Standard for Seismic Appraisal of Buildings》 (GB50023), the bearing capacity of the building structure is checked and checked by using structural analysis software and field actual test results.

#### **5. SUMMARY**

According to the requirements of the specification, the safety appraisal of a steel structure portal steel frame plant should include the original data of the building

and the historical investigation, the structural system investigation and the plane layout, the foundation inspection, the upper load-bearing structure inspection and the structural bearing capacity check. Through the detection of the above content, it can be determined whether the safety of the building meets the requirements.

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# The Application of Interventional Therapy in the Treatment of Obstetrics and Gynecology Diseases

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**Abstract:** Objective: To explore the utility value of interventional therapy in the treatment of gynecological and obstetric diseases. Method: A total of 76 patients admitted to the Obstetrics and Gynecology Department of the hospital from August 2021 to July 2022 were selected for this experiment, all of whom underwent interventional treatment. The clinical effects of these 76 patients were analyzed and evaluated. Result: the experimental results showed that all 76 patients successfully underwent interventional surgery, and the overall treatment effect was excellent, with a success rate of 100%. After follow-up of the patients, it can be seen that the condition of patients with uterine fibroids and adenomyosis improved after implementing interventional embolization, and there were no symptoms of dysmenorrhea; the bleeding patient did not experience vaginal bleeding for 1 year after the surgery was completed; Malignant tumor patients have reduced or even disappeared lesions. All patients did not experience serious complications, with only 2 cases of lower abdominal pain, 2 cases of mild infection, and 1 case of fever. However, after targeted measures were taken, all patients recovered and did not have any impact on the patient's condition. Conclusion: After implementing interventional therapy for patients with gynecological and obstetric diseases, it can be seen that the overall clinical efficacy is superior, which can effectively improve the symptoms of patients and has a certain degree of safety.

**Keywords:** Interventional Therapy; Obstetrics and Gynecology Diseases; Application

## INTRODUCTION

Obstetrics and gynecology diseases are relatively common in clinical practice, including uterine fibroids, adenomyosis, acute massive bleeding, cervical cancer, and ovarian cancer, which can cause changes in the patient's physiological function and directly affect their daily life. Therefore, systematic treatment is still needed. Currently, interventional therapy is widely used in the treatment of various diseases, including gynecological and obstetric diseases. It can clearly

locate the patient's lesion and provide targeted treatment, effectively reducing the damage to the patient's body and promoting patient prognosis. This article mainly explores the application of interventional therapy in the treatment of gynecological and obstetric diseases, as follows:

## 1 MATERIALS AND METHODS

### 1.1 GENERAL

The 76 subjects included in the experiment were all patients admitted to the hospital's obstetrics and gynecology department from August 2021 to July 2022. The patient's age ranged from 25 to 53 years old, with a median age of  $(38.99 \pm 4.05)$  years. After clinical diagnosis, all patients were diagnosed with gynecological and obstetric diseases, which met the criteria for interventional surgery. However, there were certain differences in disease types, including 43 cases of uterine fibroids, 14 cases of adenomyosis, 13 cases of massive bleeding, and 6 cases of cervical and ovarian cancer. All patients are aware of and agree to cooperate with this experiment. The content, process, operational details, protocol formulation, and related precautions of this study have been reviewed by the hospital's ethics committee.

### 1.2 Method

All patients were treated with interventional therapy in the form of vascular interventional therapy. Before surgery, health education should be carried out for patients to explain disease related knowledge, including pathogenesis, treatment methods, precautions and cooperation matters, and emphasize the progressiveness of hospital equipment and technology to eliminate patients' concerns, reduce patients' psychological pressure, and enable them to actively cooperate with medical staff in various operations, Ensure the smooth progress of the surgery. Before interventional treatment, it is necessary to guide the patient to adjust their position according to the surgical needs and carry out anesthesia treatment. Usually, local anesthesia is used. After the anesthesia effect meets the expected effect, disinfection, cleaning, and tissue laying can be carried out. Then, the patient's femoral artery is punctured and intubated, using Seldingers technology. After the puncture is



completed, angiography is used as a medium to obtain the actual situation of the patient's lesion site, including location, size, and type, Based on this, develop specific intervention plans to improve the consistency and feasibility of treatment. If the patient has a major bleeding disorder, after identifying the bleeding point, carry out hemostasis surgery and inject hemostasis under the catheter medium, mainly around the bleeding site; For patients with uterine fibroids and adenomyosis undergoing uterine artery embolization, the material used for filling is polyvinyl alcohol. After filling, imaging treatment needs to be carried out. If no leakage of the contrast agent is found, it indicates successful embolization; For patients with malignant tumors, catheters should be retained to facilitate continuous infusion of medication in the later stage, and embolization treatment should also be performed after completing the medication operation. Absorbable gelatin sponge preparations should be selected as the main embolization material. It should be noted that an appropriate amount of antibiotics should also be applied after completing the intervention surgery to prevent the occurrence of infection problems [1-2].

### 1.3 Outcome Measures

Close attention should be paid to the clinical symptoms and manifestations of patients with different disease types after surgery, such as the control of bleeding patients and the level of uterine artery blood flow indicators; And a one-year follow-up was conducted on the patients, with detailed statistics on the symptoms of vaginal bleeding in patients with major bleeding, as well as the size and symptom relief of uterine fibroids and adenomyosis; the disappearance and survival rate of malignant tumors. At the same time, it is necessary to record the types of postoperative complications in patients and take targeted treatment measures in a timely manner to improve and minimize the impact on patients.

### 1.4 Statistical processing

Statistical processing is required for the entire research process, and SPSS22.0 was selected as the statistical processing tool in this study. Comprehensively collect data on various observation indicators throughout the entire research process, using " $x \pm s$ " to represent measurement data and "%" to represent counting data. During statistical processing, use "t" and "X<sup>2</sup>" to test measurement and counting data respectively. If there is statistical significance between the data, it can be expressed as " $P < 0.05$ ", otherwise it can be expressed as " $P > 0.05$ ".

## 2 RESULT

### 2.1 Clinical efficacy analysis

All 76 patients successfully completed the intervention surgery, and the success rate of surgical treatment was 100%. After follow-up observation of the patient's clinical manifestations after surgery, it can be seen that the condition of patients with uterine

fibroids and adenomyosis has significantly improved, and the symptoms of dysmenorrhea have disappeared; After treatment, the vaginal bleeding of the bleeding patient disappeared and did not recur within one year; Lesions shrink or even disappear in patients with malignant tumors.

### 2.2 Postoperative complications

None of the 76 patients experienced serious complications, with only 5 mild complications, including 2, 2, and 1 cases of lower abdominal pain, mild infection, and fever, respectively. However, after the application of analgesics, antibiotics, and cooling drugs, they all returned to normal and did not have any impact on the patients.

## 3 DISCUSS

In recent years, the incidence rate of gynecological and obstetric diseases has increased year by year, including hysteromyoma, malignant tumor and other diseases. At the same time, cesarean section and induced abortion and other operations have also led to an increase in the number of acute massive bleeding. Usually, in the past, medicine and surgery were the main treatments, but the drug treatment was slow to take effect, and the treatment effect was not accurate. Surgical treatment has the characteristics of great trauma and risk, and is easy to cause various complications, Directly affects the therapeutic effect. With the development and progress of medical technology, interventional therapy has also been widely used in clinical practice. It refers to the use of digital subtraction machines, CT, ultrasound, and nuclear magnetic resonance imaging (MRI) guidance. Interventional surgery usually refers to the use of peripheral arteries such as the femoral artery and axillary artery under the guidance of angiography to deliver drugs, stents, and sealing materials to the lesion to improve discomfort symptoms. Compared to traditional surgical treatment methods, it has less trauma the advantages of fast recovery and minimal side effects, and the entire process is carried out under the guidance and monitoring of imaging equipment, making it more accurate, safe, and efficient. the application of interventional treatment methods in gynecological and obstetric related diseases can timely detect the location and type of patient lesions, and the angiography during the process can also understand the problems existing in the treatment, effectively improving the overall treatment effect [3]. This study shows that good treatment results have been achieved after the use of interventional treatment methods. Patients with uterine fibroids have significantly improved their condition, bleeding in patients with acute massive bleeding has been controlled, and malignant tumor symptoms have significantly reduced or even disappeared after treatment. Minor complications occurred but did not affect the patient's condition.

In summary, the overall efficacy of interventional therapy in the treatment of gynecological and obstetric diseases is relatively ideal, and it has a certain degree of safety. Worth promoting.

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# Research on Innovation in Student Education Management from the Perspective of Information Technology

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**Abstract:** With the rapid development of information technology, it has become a very important trend to organically combine information technology with the field of education. In this context, the use of information technology to carry out student management work can break through the shortcomings of traditional student management work, improve the overall quality and level of student management work, and reduce the burden and pressure on relevant management personnel. Based on this, this article analyzes the current status of student management and explores specific innovative strategies for student management in the information age.

**Keywords:** Information age; Student management; Innovation

## 1 INTRODUCTIONS

Traditional student management work generally has problems such as low efficiency, low coverage, and poor management effects. the reform and innovation of traditional student management work can be achieved with the help of more advanced technological means in the information age, which can help student work managers get out of the corresponding dilemmas., thereby continuously improving the quality and level of student management work.

## 2 MAIN CHARACTERISTICS OF STUDENT MANAGEMENT WORK IN COLLEGES AND UNIVERSITIES IN THE INFORMATION AGE

### 2.1 DIVERSIFICATION OF MANAGEMENT APPROACHES

The continuous development of information technology and network technology has also given rise to new opportunities for student management in colleges and universities. Counselors can use the Internet to grasp students' living conditions and activity trajectories in real time, and use corresponding data information to understand students' ideological dynamics and Behavioral habits, etc., thus providing a reference for the formulation of work strategies for their students. In addition, student

management workers can also use information technology to issue some notices and announcements in a timely manner, thereby continuously improving the efficiency of student management work.

### 2.2 COMPLICATED MANAGEMENT CONTENT

Information technology has brought about earth-shaking changes in the form and content of college students' study, life, and after-school entertainment activities. Their own ideological status will also be affected by the information age to a certain extent, which increases the complexity of college student management. sex. Faced with the current phenomenon of certain deviations in the ideological and moral aspects of college students, administrators must also firmly grasp the fundamental educational concept of cultivating moral character and cultivating people.

### 2.3 DIVERSIFICATION OF MANAGEMENT OBJECTIVES

The goals of student management work in colleges and universities are more diversified and multi-layered. This is reflected in the gradual broadening of the scope of student management work, including most of the students' learning and work behaviors in school, and establishing and improving the system based on this. It has established a multi-faceted collaborative management mechanism, which to a certain extent gives student management a certain basis; on the other hand, colleges and universities also need to rely on diversified student management goals and build on the construction of information platforms., committed to the construction of a good living environment for college students. [1]

### 2.4 MULTI-LEVEL MANAGEMENT MODEL

With the continuous advancement of information reform, some new changes have emerged in the level of student management in colleges and universities. When college students use information technology to study and live, they have broadened their own space, allowing their learning horizons to expand outside the campus and even reach all parts of the world through virtual networks. When college student management workers face this new change, if they still follow traditional management methods, it will be difficult to improve the quality and level of student management work.

### **3 DILEMMAS FACED BY COLLEGE STUDENT MANAGEMENT IN THE INFORMATION AGE**

#### **3.1 THE TRADITIONAL MANAGEMENT MODEL HAS OBVIOUS DISADVANTAGES**

At this stage, many colleges and universities still adopt a one-to-many management model of counselors when carrying out student management work, without incorporating more information elements. This management model is contrary to the characteristics of the development of the times and can easily lead to the failure of student management work. Lag and inefficiency. Although this management model can achieve a certain degree of effect, it has a strong administrative color and is also highly restrictive for students' study and life. It does not comprehensively consider the individualized psychological and ideological needs of contemporary college students, and presents a greater shortcoming of the times.

#### **3.2 THE INFORMATION AGE CAUSES SECURITY ISSUES**

The rapid development of information technology has greatly enriched the spiritual and cultural life of college students. At the same time, because college students are lively and curious, they can browse more social hot spots and ideological content through new technologies. However, because college students have not yet established correct ideological and value concepts, they are easily affected by some bad ideas on the Internet when using information technology, leading to certain network security problems. Their world view, outlook on life and values are easily affected and deviated.

#### **3.3 MANAGEMENT OBJECTS INCREASE MANAGEMENT DIFFICULTY**

At this stage, many college students have more prominent individualized behaviors and are more receptive to some fresh ideas, culture and values. At the same time, due to the differences in thinking and personality of college students, colleges and universities must invest more in ideological and political education. energy and resources.

### **4 THE SIGNIFICANCE OF INNOVATION IN MANAGEMENT WORK OF COLLEGE STUDENTS**

Doing a good job in student management in the information age has very important and positive significance. Specifically, it is mainly reflected in the following aspects. First of all, it can meet the needs of cultivating high-quality talents in the new era. Secondly, it can cope with the latest changes in the development of student work in the information age. Finally, it can meet the theoretical innovation needs of students' management work. For this reason, doing a good job in student management under the current background has very important strategic significance for the innovation and improvement of my country's student work theory. [2]

### **5. INNOVATIVE PATHS FOR STUDENT MANAGEMENT IN THE INFORMATION AGE**

#### **5.1 INNOVATION MANAGEMENT CONCEPT**

Establish and improve scientific and complete rules and regulations, so as to achieve standardized guidance and guidance for college students' words and deeds; on the other hand, combined with the students' ideological change process, real-time optimization and adjustment of relevant policies can indeed solve the problem of students' learning and work process the difficulties encountered are the fundamental starting point and foothold, laying a solid foundation for the all-round development of college students' comprehensive quality.

#### **5.2 STRENGTHEN STUDENTS' IDEOLOGICAL EDUCATION AND CAMPUS SPIRITUAL CIVILIZATION CONSTRUCTION**

Relevant managers can use WeChat public platforms, Weibo and other online means to promote positive online ideological content, thereby expanding the influence of correct social public opinion in universities. In fact, these are important means to strengthen the construction of spiritual civilization in colleges and universities. University student management workers need to actively guide college students to participate in the construction of school cyberspace, help college students improve their ability to distinguish positive information and negative information in cyberspace, avoid the negative impact of various bad information on college students' ideological values, and provide college students with moral integrity. Lay a solid foundation for improving quality and establishing correct values. [3]

#### **5.3 MAKE FULL USE OF NETWORK TECHNOLOGY TO STRENGTHEN TEACHING MANAGEMENT**

Teachers can use Internet technology to create a more interesting and authentic learning environment for students, and use some videos and audios to explain more abstract and complex teaching content to students, which will improve the quality of teachers' teaching and the effect of teaching. Implementation is of great help.

#### **5.4 STRENGTHEN THE MONITORING AND MANAGEMENT OF CAMPUS LAN AND IMPROVE STUDENTS' ABILITY TO IDENTIFY INFORMATION**

First of all, colleges and universities can actively introduce professional network technology talents to supervise the campus local area network, clean up security loopholes in the school network in real time, and purify the network of bad thoughts and garbage; secondly, colleges and universities also need to supplement and supplement the information capacity of the campus network. Updates can help college students keep abreast of the latest social hot news, and give full play to the important role of campus networks in thought leadership and value shaping; thirdly, when

schools build campus networks, they must also diversify network modules and use audio and video appreciation. the construction of modules such as, Friends Network, etc., can enrich the extracurricular cultural life of college students; finally, colleges and universities must also open red websites in the campus network to incorporate Marxist theory and other theoretical contents that are consistent with the core socialist values into student management work, for Lay a solid foundation for improving the overall quality of the campus network.

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# Innovative Research on the Management Model of Physical Education Teaching in Universities

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**Abstract:** At present, under the concept of comprehensive implementation of quality education, the status of physical education teaching management in universities is becoming increasingly important in the teaching management system, and physical education teaching has also received more and more attention. the management of physical education teaching in universities affects the effective implementation of quality education concepts and the comprehensive development of students' physical and mental health. In the current new era, universities need to strengthen the innovation of physical education teaching management models, optimize and improve traditional management concepts, and achieve innovation in physical education teaching management based on clarifying the connotation and characteristics of physical education teaching management. Based on this, this article explores the innovation of the management mode of physical education teaching in universities.

**Keywords:** Universities; Physical Education Teaching; Management Mode; Innovate

In the development of higher education work, it is necessary to strengthen the attention to physical education teaching. the quality of physical education teaching affects the implementation effect of quality education in universities. In this case, universities need to increase the development of physical education teaching management work, so that it can improve the overall quality of physical education teaching, promote the effective construction of physical skills, and ensure that students can achieve personalized and comprehensive development in physical education teaching in universities. College physical education teachers need to strictly follow the content of the teaching syllabus to teach theoretical knowledge of physical education, and also pay attention to the cultivation of students' sports ability, so that students can improve their personal physical fitness and moral literacy during physical education learning, and help them establish correct values. Therefore, universities need to improve the overall quality of physical education teaching through

innovation in the management mode of physical education teaching, and fully reflect the role of physical education teaching in universities.

## 1. CHARARTERISTICS OF PHYSICAL EDUCATION TEACHING MANAGEMENT IN UNIVERSITIES

Based on the actual situation, universities are gradually realizing the importance of physical education in their education and teaching work. If universities want to improve the overall quality of physical education teaching, they need to increase the efforts of physical education teaching management. At present, in the development of physical education teaching management work, teachers need to clarify the management characteristics in order to promote the orderly development of management work [1] Analyzing the management of physical education teaching in universities can reveal the following characteristics: 1. comprehensiveness. During the implementation of physical education teaching management in universities, it is not only necessary to manage university students, but also to pay attention to the contents of university teachers, teaching venues, teaching equipment, and teaching progress. In this case, the comprehensive characteristics of physical education teaching management in universities can be seen. If any improper management occurs during the teaching management period, it will affect the quality of physical education teaching; 2. Coherence. University physical education teaching has a complete and coherent system, and teaching management work needs to strictly follow the teaching system for management. This requires management work to be gradual and not disconnected, ensuring that the management work can optimize teaching order, promote stable teaching work, and also achieve the improvement of physical education teaching level.

## 2. INNOVATIVE MEASURES FOR THE MANAGEMENT MODE OFF PHYSICAL EDUCATION TEACHING IN UNIVERSITIES

2.1 Actively transforming the concept of physical education teaching in universities

With the comprehensive implementation of quality education, physical education teaching in universities has received increasing attention. To improve the overall quality of physical education teaching, it is necessary to strengthen the implementation of physical education teaching management work. The original management mode of physical education teaching cannot achieve high-quality management of physical education teaching, which requires innovation on the basis of the original management mode, improving the overall level of teaching management, and promoting the high-quality development of physical education teaching work in universities. Firstly, universities need to transform and optimize their existing physical education teaching concepts. Teaching management personnel need to keep up with the times, clarify the new direction of university education development, and also understand the current teaching models and methods in physical education teaching, providing accurate reference for the development of physical education teaching management work, in order to improve the level of teaching management work. In addition, management personnel also need to conduct research and analysis on high-quality management models in domestic and foreign universities, and develop targeted teaching management models based on the actual situation of university teaching, so that they can effectively integrate with university physical education teaching work, ensure that teaching management work can help students achieve comprehensive quality cultivation, improve their comprehensive abilities, and promote the comprehensive development of students' physical and mental health. From this, it can be seen that the application of high-quality teaching management concepts can enhance the enthusiasm and initiative of physical education teachers in teaching, and at the same time, students' physical practice ability can also be significantly improved, ultimately achieving an effective improvement in the level of physical education teaching in universities.

## 2.2 Strengthen communication between teaching management departments and physical education departments

If universities want to improve the level of physical education teaching management, they need to achieve effective communication between the management department and the physical education teaching department. Only by improving the communication efficiency between the management department and the teaching department can they promote the standardized development of teaching management work. Firstly, the teaching management departments of universities need to recognize the importance of physical education teaching, strengthen cooperation between the management departments and physical education teaching departments, clarify the correlation between management and teaching work, in order to

achieve the orderly development of physical education teaching management work. When carrying out management work, the teaching management department of universities needs to reasonably set the physical education teaching plan based on the actual teaching mode of the university, ensuring that the designed teaching plan conforms to the training ability of students' physical fitness, so that students can have enthusiasm in the learning process [2]. The management department also needs to conduct comprehensive evaluations of teaching work, reasonably formulate comprehensive evaluation indicators for physical education teaching, timely identify problems in teaching, and improve teaching management models based on actual teaching situations, in order to improve the overall level of physical education teaching in universities. The management department also needs to increase supervision in teaching management, design more distinctive physical education teaching models based on the personalized characteristics of students, so that they can not only improve the overall quality of physical education teaching, but also play a role in teaching management work.

## 2.3 Following the laws and principles of physical education teaching

At present, in the development of physical education teaching management in universities, it is necessary to attach importance to the principles and laws of physical education teaching, to ensure that the management content strictly follows the teaching principles and laws, and to improve the level of teaching management work on the basis of physical education teaching work. When arranging optional physical education courses in universities, teaching management personnel need to clarify the age, gender, physical fitness, and other contents of students, and judge the feasibility of optional courses based on their actual situation, so that students can improve their basic physical education knowledge and personal physical skills during the learning period of optional courses. In addition, during the teaching management period, it is necessary to comprehensively manage teachers' teaching abilities, teaching venues, teaching equipment, and other content to ensure that the equipment, equipment, and venues in physical education teaching can be reasonably matched. During the period of physical education teaching management, it is necessary to analyze the local climate characteristics, formulate a reasonable physical education teaching plan based on various factors, ensure the smooth implementation of physical education teaching work, and improve the overall quality and efficiency of physical education teaching in universities, and fully highlight the role of teaching management.

## 3. CONCLUSION

In summary, the development of physical education and teaching in universities is gradually valued. To improve the overall level of physical education and teaching, it is necessary to strengthen the management of physical education and teaching. Through the implementation of management work, a reasonable physical education teaching plan can be formulated, the original physical education teaching mode can be improved, and the physical education teaching mode can be significantly optimized. On this basis, the role of physical education and teaching management can also be reflected, Promoting the comprehensive development of physical and mental health for college students.

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# Exploration of Teaching Models and Methods for Film and Television Courses Based on Cultural Construction and Industrial Development

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**Abstract:** With the continuous development of the times and the increasing improvement of the national economic level, people are paying more and more attention to the teaching of film and television courses related to cultural construction and industrial development. the development of the film and television industry can meet the growing spiritual and cultural needs of the people. In this regard, universities should attach great importance to the cultural construction of film and television courses and make timely curriculum optimization reforms for the future industrial development of film and television courses, promote the integration of teaching and social needs, strengthen the practicality of education, and cultivate high-level and high-quality talents in the field of film and television. Based on this, this article takes the teaching mode of film and television courses in cultural construction and industrial development as the theme, conducts discussions and research, analyzes the problems existing in the current teaching mode of film and television courses, and explores new teaching modes and methods of film and television courses.

**Keywords:** Cultural Construction; Industrial Development; Film and Television Courses; Teaching Mode; Method

## INTRODUCTION

In recent years, China's film and television cultural industry has developed rapidly. the development of the film and television cultural industry has driven the demand of society. While cultivating talents, universities should also combine cultural construction with industrial development, continuously optimizing the current teaching mode and methods of film and television courses.

## 1. THE IMPACT OF CULTURAL CONSTRUCTION AND INDUSTRIAL DEVELOPMENT ON THE TEACHING OF FILM AND TELEVISION COURSES

### 1.1 PROVIDE PRACTICAL OPPORTUNITIES

With the rapid development of the film and television industry, students have more opportunities to participate in practical projects, such as shooting short films and producing documentaries. These practical opportunities can help students apply theoretical knowledge to practical operations, improve their practical and creative abilities.

### 1.2 EXPAND TEACHING CONTENT

With the advancement of cultural construction and industrial development, the teaching content of film and television courses has also been expanded. In addition to traditional film production and TV drama creation, it can also involve emerging fields such as animation, games, and virtual reality. This can meet students' needs for different types of film and television works and cultivate their diverse aesthetic abilities.

### 1.3 STRENGTHEN INDUSTRY DOCKING

The promotion of cultural construction and industrial development has made the connection between the film and television industry and educational institutions closer. Schools can collaborate with industry institutions such as film and television companies and television stations to carry out practical projects and internship opportunities, providing students with more employment opportunities and industry experience.

### 1.4 INTRODUCING NEW TECHNOLOGIES

With the continuous progress of technology, the film and television industry is also constantly introducing new technologies, such as virtual reality and augmented reality. the application of these new technologies has an important impact on the teaching of film and television courses. Students can learn and master these new technologies, improve their creative ability and competitiveness.

## 2. THE PROBLEMS IN THE CURRENT TEACHING MODE AND METHODS OF FILM AND TELEVISION COURSES

### 2.1 THE SHORTCOMINGS OF TRADITIONAL TEACHING MODELS

Excessive emphasis on imparting theoretical knowledge and lack of practical links. Film and television courses require students to have practical operational skills, but traditional teaching models often only focus on instilling theoretical knowledge and lack practical links. Students only passively accept knowledge and cannot truly master practical operational skills.

## 2.2 LACK OF TEACHING CONTENT AND METHODS THAT ARE ALIGNED WITH THE INDUSTRY

The film and television industry is developing rapidly, with continuous updates in technology and craftsmanship, but the teaching content and methods of some film and television courses are disconnected from the development of the industry. The knowledge and skills learned by students cannot match the actual job needs, resulting in difficulties for graduates to find employment.

## 2.3 Lack of interdisciplinary teaching models

Film and television courses require a comprehensive application of interdisciplinary knowledge, such as art, literature, photography, music, etc. However, current teaching models often only focus on single subject teaching and lack interdisciplinary integration. This leads to students being unable to fully understand and apply various aspects of film and television production.

## 2.4 LACK OF INTERACTIVE AND COLLABORATIVE TEACHING METHODS

Film and television courses are a collaborative process, but the current teaching method often involves teachers imparting knowledge in one direction and students passively accepting it. Lack of interaction and cooperation among students, unable to cultivate their teamwork ability and innovative thinking.

# 3. SPECIFIC STRATEGIES FOR TEACHING MODELS AND METHODS OF FILM AND TELEVISION COURSES BASED ON CULTURAL CONSTRUCTION AND INDUSTRIAL DEVELOPMENT

## 3.1 DIVERSIFIED TEACHING RESOURCES

During the teaching process, teachers can establish a rich and diverse library of teaching resources, utilize the Internet and new media technology, and carry out interactive teaching activities such as online discussions, film review writing, and film and television work analysis, to stimulate students' learning interest and thinking ability. This includes various types of film and television works such as movies, TV dramas, and documentaries to meet the diverse needs and interests of students. For example, during the teaching process, due to the rigid textbook knowledge content being relatively single and difficult to understand, teachers can use multimedia to convert the single content on paper into vivid and vivid forms such as videos, animations, and audio to deepen students' understanding and cognition [1].

## 3.2 CARRY OUT PRACTICAL TEACHING

The saying 'practice is the only criterion for testing truth' also applies to the current teaching of film and television courses. Film and television courses are a combination of theory and practice. Through practical activities, students can apply the theoretical knowledge they have learned in daily learning to put it into practice, such as film and television production, script creation, actor performance, and other courses. Teachers can allow students to participate in the film and television creation process firsthand, improving their practical operation and creative abilities. At the same time, these practical types of teaching, It can exercise students' language organization ability and logical thinking ability [2].

## 3.3 INTERDISCIPLINARY TEACHING

Film and television teaching is diverse and rich in content, and many fields are closely related to film and television works. For example, ancient clothing, modern, science fiction, and so on. In this regard, teachers can combine film and television teaching with other disciplines, linking the content of other disciplines with film and television teaching, such as literature, art, history, etc. Through interdisciplinary teaching methods, help students better understand and analyze the cultural connotations and artistic characteristics in film and television works.

## 3.4 INDUSTRY MENTOR GUIDANCE

In addition, excellent film and television industry mentors can directly influence students' learning of film and television courses. In this regard, the school can invite industry professionals as mentors to provide students with practical industry experience and guidance, help them understand industry development trends and employment prospects, and enhance employment competitiveness. Career planning guidance provides students with career planning guidance, helping them understand the employment situation and development direction of the film and television industry, and cultivating their professional literacy and employability.

## 3.5 TEAM COLLABORATION PROJECTS

Group cooperation and communication are an effective way of learning. In this regard, teachers can organize students to participate in film and television creation teams, collaborate to complete the production of film and television works, and cultivate students' teamwork and innovation abilities. For example, in practical teaching, teachers can organize students to participate in domestic and foreign film and television cultural exchange activities, such as film exhibitions, seminars, etc., to broaden students' horizons and enhance their understanding and appreciation of different cultures.

## 3.6 CULTIVATE INNOVATIVE AWARENESS

Finally, teachers should cultivate students' innovative awareness in the teaching process. In this regard, teachers can encourage students to propose innovative perspectives and creativity in film and television teaching, cultivate their innovative awareness and



creativity, and inject new vitality into the development of the film and television industry. At the same time, teachers themselves should also continue to learn, cultivate their innovative awareness, timely understand the development trends of the industry, update teaching content and methods, keep up with the times, and make teaching models and methods consistent with cultural construction and industrial development [3].

#### **4. CONCLUSION**

In summary, the teaching mode and methods of film and television courses based on cultural construction and industrial development can be qualitatively optimized. In the process of teaching activities, teachers should strengthen practical teaching, optimize teaching content, and carry out group cooperation teaching. At the same time, both teachers and students should cultivate innovative awareness, keep up with the times, keep up with the pace of the times, and ensure that teaching models and methods,

cultural construction, and industrial development are consistent.

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# On the Balance of Interests in Intellectual Property Law in the Digital Era

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**Abstract:** With the continuous development of the times and the increasing level of science and technology, we have now entered the digital era of big data internet. the arrival of the digital age has led to the rapid development of information technology, which not only has a profound impact on the current society, but also brings new challenges to the balance of interests in intellectual property law. Intellectual property, as an important component of the new era economy, has a balance of interests that affects the development of society and enterprises. How to maintain a balance of the interests of intellectual property law in the digital age and promote national economic prosperity has become a focus worth pondering at this stage. Based on this, this article will discuss and study the balance of interests in intellectual property law in the digital age, with the theme of intellectual property law in the digital age.

**Keywords:** Digital Age; Intellectual Property Right Balancing of Interest

## INTRODUCTION

With the advent of the digital age, the internet has been widely popularized, and the rise of digital entertainment industry and high-tech has created more convenience for the utilization of intellectual property. Enterprises have made the application of intellectual property more convenient and easier, but it has also made the theft and infringement of intellectual property relatively easy. In response to this phenomenon, the balance of interests in intellectual property law in the digital age is commendable. Property owners need to understand the relevant laws and regulations of intellectual property in the digital age, and use the law to protect their own rights and interests.

## 1. CHALLENGES FACED BY INTELLECTUAL PROPERTY LAW IN THE DIGITAL ERA

With the popularization of the Internet, we have entered the digital age. In the digital age, people's material and spiritual lives have been enriched, but it has brought new challenges to the protection of intellectual property rights. Due to the particularity of the digital age, intellectual property has become open and transparent, and people can search for various intellectual property rights on the internet at any time,

making the innovation and protection of intellectual property more complex. At the same time, the arrival of the digital age has made intellectual property easy to plagiarize and embezzle, and due to the characteristics of the Internet that are easy to spread, intellectual property piracy and infringement incidents occur frequently, causing huge losses to the owners of intellectual property. In addition, due to the globally interconnected nature of the digital age, there is also cross-border internet theft and dissemination of intellectual property, which is influenced by national and regional legal policies as well as cultural differences. This poses great difficulties for the cross-border protection and balance of interests of intellectual property [1].

## 2. WHY SHOULD INTELLECTUAL PROPERTY LAW BALANCE INTERESTS IN THE DIGITAL AGE

Intellectual property is a collective term for the rights arising from the creation of achievements and industrial and commercial marks in accordance with the law. the main types of intellectual property include copyright, patent rights, and trademark rights. Intellectual property rights are exclusive rights enjoyed by intellectual property owners based on their intellectual labor achievements. Essentially, intellectual property rights are intangible property rights that can generate enormous economic and social benefits, promote the progress of human civilization and the development of the national economy. Therefore, in the digital age, it has become particularly important to achieve peace of interest in intellectual property rights [2].

Intellectual property law needs to protect the economic interests and social status of intellectual property owners, in order to motivate them to continue creating and further promote social development and progress. If intellectual property is leaked or stolen, it will cause huge losses to the interests of intellectual property owners, thereby reducing their research and development and creation of new intellectual property. However, if the rights of intellectual property owners are excessively protected, it will also prevent the technology from being decentralized for a long time, thereby affecting the development and progress of other branch technologies below that technology. Therefore, how to coordinate intellectual property

owners and balance the interests of intellectual property is a major issue in current society. Essentially, the balance of interests in intellectual property law is to balance the conflicting interests of intellectual property owners and the public. This not only ensures the interests of intellectual property owners, promotes their continued creation, but also decentralizes intellectual property rights, making this intellectual property technology widely popular in society. Therefore, it is necessary to find a balance point in intellectual property law, take into account the interests of both parties, and maximize the value that intellectual property brings to society.

### 3. THE INTEREST BALANCE OF INTELLECTUAL PROPERTY LAW IN THE DIGITAL ERA

#### 3.1 Strengthening the Legal Protection and Enforcement of Intellectual Property Rights in the Digital Era

In the digital age, to ensure a balance of interests in intellectual property, it is necessary to strengthen the legal protection and enforcement of intellectual property based on the digital age, innovate technological means, and take effective measures to protect intellectual property through digital means, so as to protect the interests of creators and maximize the utilization of intellectual property [3].

Relevant departments should severely crack down on personnel who steal and plagiarize intellectual property, establish specific laws and regulations for stealing intellectual property, and ensure the authority of intellectual property. In response to this, we can take advantage of the easy dissemination characteristics of the digital age to conduct knowledge popularization on the Internet, strengthen public awareness of intellectual property protection and warning education, increase people's attention and understanding of intellectual property, strengthen people's understanding, and form an environment for protecting intellectual property from infringement within the entire society. In addition, in order to achieve a balance of interests in the intellectual property law of the digital age, it is necessary to control the duration of intellectual property rights, establish a limited period of protection for intellectual property rights, and avoid the emergence of permanent intellectual property rights. For example, the current copyright is fifty years, the invention patent is twenty years, the design patent is fifteen years, the trademark is ten years, and so on. By setting the time limit of these intellectual property rights, the interests of intellectual property owners are protected, providing a foundation for future social development, and enabling the widespread application of intellectual property rights in the future, thereby maximizing the value of intellectual property rights.

3.2 Strengthen international cooperation and coordination, establish cross-border intellectual property protection mechanisms

As mentioned above, due to the influence of national and regional legal policies and cultural differences, there are certain deficiencies in the protection of cross-border intellectual property law. However, in the current digital era of the Internet, internet technology has made rapid progress, and people's cross-border exchanges and international exchanges have become increasingly frequent and simple. Therefore, intellectual property law can balance interests by strengthening international cooperation and coordination, establishing cross-border intellectual property protection mechanisms, and jointly combating cross-border and cross-border piracy, plagiarism, and infringement. In this regard, relevant intellectual property protection agencies can be established between countries to strengthen information sharing and law enforcement cooperation in intellectual property. This not only can combat piracy and plagiarism, but also promote friendly exchanges of intellectual property rights among countries after the expiration of future intellectual property rights, enrich their intellectual property reserves, achieve the construction of a community with a shared future for mankind, and promote economic development and construction worldwide.

### 4. CONCLUSION

In summary, in the current digital era, the balance of interests in intellectual property law is facing new challenges. In the digital era, it is necessary to not only protect intellectual property from infringement, but also balance the way rights are used, so that society can also enjoy the dividends of intellectual property. Reasonably utilizing the principle of balance of interests in intellectual property law is conducive to achieving a balance between the interests of intellectual property owners and the general public. In the process of balancing the interests of intellectual property law, it is necessary to create a dynamic balance system among multiple parties, strengthen public attention to intellectual property law, and propose the service life of private intellectual property rights. At the same time, it is necessary to improve the laws and regulations of intellectual property law in the digital era, and establish cross national intellectual property protection mechanisms. Only in this way can we avoid conflicts of interest as much as possible and achieve a balance of interests in intellectual property law.

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# Analysis of the Employment Situation and Policies for College Students

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**Abstract:** Higher education institutions are an important component of China's complete education system, shouldering the burden of cultivating high-precision and high-quality talents for the country, and are the backbone of China's strategy of revitalizing the country through science and education. In recent years, China's higher education has entered a stage of rapid development, cultivating batches of college students from different majors, injecting fresh blood into the development of China's economy, technology, and other fields. However, with the changes in the global economic situation and domestic talent demand, more and more college students are facing the dilemma of "unemployment upon graduation", and even many college students are unemployed for a long time after leaving campus. This is a phenomenon of talent resource waste and surplus, which has brought many negative impacts on China's comprehensive strength and national economic development. This article provides a detailed analysis and in-depth exploration of the employment situation and policies for college students, with the aim of sharing and exchanging ideas with relevant industry professionals.

**Keywords:** Higher Education; Employment of College Students; Situation and Policy

## INTRODUCTION

College students face numerous difficulties in employment in modern society, both due to their own reasons and the overall employment environment. In order to fundamentally solve the problem of difficult employment for college students, the national government needs to implement a series of employment policies, and higher education institutions should also adopt targeted vocational planning education to comprehensively improve the social employment rate of college students. At present, there is a phenomenon of "high cannot be achieved, low cannot be achieved" in the employment issue of college students. Many college students hold the idea of having high education and choose suitable employment positions without hesitation. Little do they know that the current number of college students in China is gradually saturated, and has changed from "candidate positions" to "job selection". In this employment situation, more college students will not

be able to find jobs. Based on this, college students should have a clear understanding of the current social employment situation, have a deep understanding of the national employment policies for college students, and timely adjust their employment thoughts and psychology in order to survive and develop in the severe employment situation.

## 1. ANALYSIS OF THE EMPLOYMENT SITUATION OF COLLEGE STUDENTS

### 2.1 Severe economic situation

The financial tsunami triggered by the 2008 US subprime mortgage crisis has had a huge impact on the economies of various countries around the world. The economic crisis has a wider scope, higher severity, and longer duration, forming a negative impact on the economic growth of various countries. The global economic crisis has had a severe impact on industry employment, with large, small, and medium-sized enterprises choosing to lay off workers, leading to many people facing the unemployment crisis. In this situation, even if college students have a high degree, it is difficult to find suitable jobs. In order to have a more intuitive understanding of the impact of the severe economic situation on social employment, a series of data will be listed below to illustrate: firstly, China's economic growth rate decreased from 5% in 2007 to 2.2% in 2008, and some developed countries experienced negative economic growth; Secondly, the unemployment rate in China is approximately 4.9%, and the actual unemployment rate may reach 14%, which means that 14 out of every 100 people are facing unemployment problems. From this, it can be seen that the severe economic situation has a direct impact on the employment of college students. To improve the employment rate of college students, it is necessary to ensure that the economic development situation continues to be positive and provide more abundant employment opportunities for college students.

### 2.2 The current employment situation in China

The employment situation in China reflects "one main contradiction", "two focus areas", and "three basic characteristics". The specific analysis is as follows: firstly, there are both aggregate and structural contradictions. At present, China has passed the period of "population dividend", gradually shifting from

population intensive industries to technology-based, technology-based, and service-oriented industries. This will lead to saturation of employment and reduction of employment opportunities in China, which will make the problem of difficult employment for college students even more prominent. Secondly, both urban and rural employment issues arise simultaneously [1]. There are regional characteristics in China's economic development, with urban economy being superior to rural economy and coastal economy being superior to inland economy. This imbalance in economic development can lead to the problem of excessive concentration of employed population, and the employment pressure of college students in large cities is significantly increasing. Thirdly, the employment of new labor and the reemployment of laid-off workers are intertwined. Fresh college students belong to the new labor force, and it is easy for multiple people to compete for the same position during the employment process. Lack of experience among college students is highly likely to fall behind.

### 2.3 The Employment Situation of College Students in China

According to statistics on the number of college graduates over the years, it can be observed that the number of college graduates in China has shown an increasing trend year by year. From 2001 to 2011 alone, the number of college graduates increased from 1.15 million to 650. Although the national economy has developed rapidly in the past decade, it is still difficult to meet the continuously increasing demand for employment among college students, so the employment pressure of college students will continue to rise [2]. In addition, the increasingly fierce competition for employment is also a manifestation of the employment situation of college students in China. The specific analysis is as follows: firstly, employers place more emphasis on work experience when recruiting, which is very unfavorable for fresh graduates; Secondly, the entry of white-collar and technical personnel from laid-off enterprises into the job market has had a huge impact on the employment of graduates; Thirdly, there has been a competition among undergraduate students for positions as vocational and secondary vocational students in the job market.

### 3. PSYCHOLOGICAL ANALYSIS OF COLLEGE STUDENTS' EMPLOYMENT

The reason for the difficulty in finding employment for college students mentioned earlier is partly due to the lack of basic employment qualities, abilities, and awareness among them. This is mainly manifested in the following aspects: firstly, college students have a "high cannot be achieved, low cannot be achieved" employment mindset, believing that they are top students from prestigious universities and will definitely find better jobs. When looking for a job,

they may overlook the high mountains and ultimately miss out on the best employment opportunities. Secondly, many college students do not have a clear career planning direction and always do not know what they can do, what they want to do, and what they are suitable for, resulting in frequent obstacles when looking for a job. Thirdly, some college students lack basic social skills and fall behind in job search competition. Of course, some college students have high aspirations and are outspoken in job hunting, which is also a "stumbling block" for job hunting and employment.

### 4. ANALYSIS OF EMPLOYMENT POLICIES FOR COLLEGE STUDENTS

In order to effectively solve the social problem of difficult employment for college students, the country has introduced multiple employment policies for college students, and has achieved significant results through long-term persistence and efforts. Firstly, the country has established a basic approach for the employment of college students, which is to "manage but not package, strengthen guidance, and focus on services", which points out the direction for solving the problem of difficult employment for college students. Secondly, the country has introduced a basic mechanism of "non allocation, competitive employment, and selective employment" in the employment of college students. Finally, the employment policy for college students advocates the basic form of "national macroeconomic regulation, recommendation from schools and governments at all levels, and two-way selection between students and employers", which to some extent increases the employment rate of college students and increases their probability of finding suitable majors and jobs. In addition, the country has also taken a series of specific measures, mainly including the following aspects: firstly, encouraging graduates to work at the grassroots level and in the central and western regions, which can not only alleviate the regional employment difficulties in China, but also develop the economy of underdeveloped areas in China. Secondly, encourage graduates to enlist and join the military. Thirdly, we will vigorously support graduate students' independent entrepreneurship, accelerate the construction of college student entrepreneurship incubation parks in various regions, and provide various support policies for entrepreneurial college students.

### CONCLUSION

In summary, the employment situation for college students is very severe, leading to enormous employment pressure. In order to effectively solve the social problem of difficult employment, the national government and higher education institutions need to take a series of measures, that is, universities should increase their career planning and development



education efforts, and the national government should introduce relevant employment policies for college students, in order to comprehensively increase the employment rate of college students and solve the difficult employment situation for college students in China, Provide strong support for the development of China's national economy.

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# Research on Architectural and Environmental Art Design of Courtyard Style Urban Residential Quarters

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**Abstract:** The design of residential communities is closely related and inseparable from people's lives. Urban citizens who are achieving or approaching a moderately prosperous life are most concerned about the return of architecture to nature and simplicity. This requires architects to have a profound exploration of people's living patterns and living psychology. Therefore, how to integrate courtyard style urban residential community architecture with environmental art is a direction we need to study.

**Keywords:** Courtyard Style Residential Community, Architectural Environment, Art

## 1. RESEARCH STATUS AND DEVELOPMENT TRENDS AT HOME AND ABROAD

### 1.1 Domestic research

Domestic residential communities are mainly enclosed, fenced, and large-scale, with too little content combining architecture and environmental art. Although some new residential communities have begun to design buildings and environments reasonably, overall they lack a lot of humanized and personalized artistic aesthetics.

1.1.1 Under the influence of modernist planning theory and residential area planning theory, the current residential model, urban model, and urban development model marked by closed "residential communities" in Chinese cities have seriously hindered the healthy operation of cities and led to a decline in the living standards of urban residents. At the same time, with the rapid development of the entire social economy, people's material and cultural living standards have also developed to a higher level.

1.1.2 In the architectural design of some southern residential communities, the overall layout is reasonably organized, and the "evenness" of each building is added on limited land. At the same time, the comfort, rationality, and flexibility requirements for use are maximized in the unit design.

### 1.2 Foreign research

1.2.1 The Western civilization introduced by Japan went through the period from complete modernism to postmodernism. Influenced by traditional culture,

Japanese modern architecture has emerged with three basic forms of courtyards in Japanese residential buildings: south courtyard+veranda+continuous rooms, gaps, flat courtyards, and atriums. There are not many large-scale residential communities in Japan, which are very different from our domestic counterparts. The overall planning and layout of buildings and environment are more of a combination of government control and family style layout. However, due to the distinct ethnic characteristics, it appears to be more harmonious and unified. The architectural style design of Japanese planning and design personnel is relatively traditional, but the architectural concept is advanced.

1.2.2 The majority of residential properties in the United States are single family homes, and the use of new materials is very common. Generally, it is not a large-scale residential community with enclosed buildings, but mainly consists of open independent courtyards. Secondly, even unit residential buildings will not form large-scale enclosed communities. So their research on overall planning and design of architecture and environment tends to be open rather than closed, with prominent and distinct personalities, lacking unified layout and coordination. American architectural designers have a relatively open mindset.

1.2.3 There are five commonly used styles in European landscape courtyard design, which make community clusters present a rich hierarchy of five major clusters, including: Italian style terrace courtyard, French style water view courtyard, Dutch style rule courtyard, English style natural courtyard, and English style theme courtyard. Their layout characteristics: Determine the main color tone of the courtyard based on the architectural color and surrounding environment.

### 1.3 Future Trends

Both foreign and domestic residential communities, represented by courtyard style, have a very large space in the future for the integration of architecture and environmental art. Harmonious architectural environmental art is one of the manifestations of human civilization and progress.

## 2. CHARACTERISTICS AND DESIGN CONCEPT OF COURTYARD STYLE RESIDENTIAL COMMUNITY

### 2.1 Characteristics of courtyard style residential communities

When it comes to "courtyards", the most representative one is the quadrangle courtyard in Beijing, which usually has two characteristics: one is the closed space, and the other is the ever-changing interior. Generally speaking, a design enclosed on all sides creates a relatively enclosed space that effectively blocks external influences, while a space with rich internal changes is in line with traditional Chinese residential culture and can promote harmonious neighborhood relationships.

For modern people, being able to quickly access information channels and ensure a basic privacy environment is very important. Therefore, many developers choose to preserve the squareness, symmetry, and diversity of spatial changes in traditional courtyard style buildings, and then add modern technology and style. Sometimes it is surrounded on all sides, sometimes on both sides, three sides, or even without, to ensure privacy and connection with the outside world. This not only preserves the traditional courtyard style beauty, but also eliminates the drawbacks of being closed, dark, and lacking privacy.

The design of the house should reflect the same ideas as nature as much as possible. Due to the advantages of the wooden frame system, the wall cannot bear the pressure of the upper structure and can open windows at will, especially in the south. On the side leading to the courtyard, there is often a row of long windows on the ground. Once opened, the indoor and outdoor spaces are fully circulated together. In traditional courtyards, the main buildings are often surrounded by corridors, which are actually a transition between indoor architectural space and outdoor natural space, serving as an intermediary and bridge for Chinese architecture to maintain harmony with nature.

### 2.2 The concept of overall planning and design for courtyard style residential buildings and environmental art

In project design and creation, the first focus is on the protection and utilization of the ecological environment, emphasizing the creation of living environment, space, and atmosphere to meet people's spiritual and cultural pursuits. Secondly, emphasis should be placed on the regional value analysis of residential communities, through reasonable planning and resource allocation, and the rational design of residential units, to increase positive space and reduce negative space. Thirdly, focus on design techniques and the actual needs of residents.

The evaluation of 'residential design is the same across the country' and 'residential communities are the same across the country' may seem overly derogatory, but after careful consideration, there is indeed some

blushing and earwarming. China has a vast territory, numerous ethnic groups, diverse climate types, and different living habits. Although there are similarities in the requirements for housing, there are still significant differences. When we examine local dwellings, we can see their obvious local characteristics. Even music, drama, dance, drawing, and even clothing styles have their own rich local styles. Looking at residential communities in various provinces and cities, although there are many successful works, most of them are similar and similar. Buildings that are similar to each other are places for people to live, reflect their way of life, and are also carriers of culture. Residential areas are the main body of urban culture, and architectural design should be harmonious with the environment, forming a benign ecological system, reflecting the spiritual connotation of the building and the humanistic spirit of its era, and maintaining the healthy development of the residential area's ecology.

## 3. THE OVERALL DESIGN FUNCTION OF COURTYARD STYLE RESIDENTIAL BUILDING ENVIRONMENTAL ART

3.1 Bring good environmental awareness and sustainable development concepts to real estate development enterprises, construction units, and community residents, and provide ideas and methods for the overall design of courtyard style residential communities for society and enterprises, so that architecture and environmental art can be harmoniously and fully reflected in courtyard style residential communities.

3.2 Adhering to the concept and model of integrating architecture with natural environment and humanistic and social environment can improve the quality and spiritual level of residential life. Design architectural design models that are suitable for modern lifestyles and social needs, emphasizing "people-oriented", reflecting the era spirit and high-level pursuit of strong humanistic care.

3.3 Architectural and environmental design can achieve the aesthetic requirements of indoor space, while maintaining the characteristics and style of outdoor space, and coordinating with the surrounding background environment and urban cultural planning, making the changing environment an essential landscape in creating the external spatial environment of the building.

3.4 Courtyard style community planning can scientifically and reasonably deploy the landscape environment design and environmental quality of residential communities, improve the healthy elements of the residential environment, and reasonable community planning can bring a beautiful environment to residents, and enable them to enjoy the joy of sports and cultural heritage.

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# The Integration and Practice of Campus Culture and Ideological and Political Education in Higher Vocational Education

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**Abstract:** There is a very close connection between ideological and political education and campus culture, and there is a mutual influence between the two. Campus culture, on the other hand, is a multifaceted and multi-level carrier of ideological and political education. If the two are integrated, it can promote positive interaction between the two and benefit students. It can improve the ideological and political quality of vocational college students and the teaching effectiveness of teachers, and also promote the development of campus culture construction, cultivating more talents for society and the country.

**Keywords:** Vocational Colleges; Ideological And Political Education; Integration; Campus Culture Construction

## 1. CONNOTATION OF CAMPUS CULTURE IN VOCATIONAL COLLEGES

Campus culture is a group culture that mainly takes the campus as the main space, students as the main body, covers university leaders, faculty, and staff, and is characterized by the campus spirit. It includes the content of physical forms such as campus architectural design, campus landscape, greening and beautification, as well as the tradition, school spirit, academic style, interpersonal relationships, and collective public opinion of the school the psychological atmosphere and various rules and regulations of the school, as well as the non explicit norms of behavior formed by school members in common activities and interactions. Campus culture is generally taken from the meaning of the spiritual culture of the school, which refers to the sum of the spirits formed by the common members of the school during the development process of the school, including the highest goals, values, school spirit, traditional habits, behavioral norms, and rules and regulations of the school. This sum of spirits reflects the overall image and cultural heritage of the school, with interactivity, permeability, and inheritance. A healthy campus culture can cultivate students' sentiment Inspire students' minds and promote their comprehensive development. Therefore, the construction of campus culture should be mainly oriented towards educating people, and cultivate

talents with comprehensive qualities through rich and colorful campus cultural activities and a good campus cultural atmosphere.

## 2. APPROACHES AND MEASURES FOR THE INTEGRATION OF CAMPUS CULTURE AND IDEOLOGICAL AND POLITICAL EDUCATION IN VOCATIONAL COLLEGES

2.1 Teaching according to local conditions and aptitude: highlighting the characteristics of vocational education and campus culture in vocational colleges Each vocational college has its unique educational history, geographical environment, student composition, and industry background, all of which can affect the formation of campus culture, and each student's personality, interests, values, etc. are also different. Therefore, in order to achieve the integration of campus culture and ideological and political education, it is necessary to consider these differences, adapt to local conditions, teach students according to their aptitude, and have a deep understanding of the school's educational history, industry background, and student composition, in order to develop ideological and political education plans that are in line with the school's characteristics. We should also pay attention to the individual differences of students and carry out personalized educational activities based on their interests, strengths, and needs. For example, for students in certain majors, we can combine their professional characteristics to carry out activities such as professional ethics education, industry standard education, and social responsibility education, so that students can have a deeper understanding of the connotation of professional literacy and professional ethics [1].

2.2 Strengthen ideological and political education The campus culture and ideological and political education in vocational colleges complement and promote each other. If the two are organically integrated, it can effectively improve the effectiveness of ideological and political education and promote the comprehensive development of students. Firstly, campus culture is an important carrier of ideological and political education in vocational colleges. Campus culture is the embodiment of a school's spiritual style,

covering aspects such as school spirit, academic style, and teaching style, and can provide a broader platform for ideological and political education. Through rich and colorful campus cultural activities, students can receive ideological and political education in a relaxed and joyful atmosphere, and better cultivate their ideological, moral, and professional qualities. Secondly, ideological and political education is an important support for the construction of campus culture in vocational colleges. Ideological and political education can guide students to establish a correct worldview, outlook on life, and values, and improve their moral level and professional literacy. At the same time, ideological and political education can also promote the healthy development of campus culture and prevent the influence and infiltration of negative culture. In order to strengthen ideological and political education, the following measures can be taken: firstly, to strengthen curriculum construction. In ideological and political education courses, emphasis should be placed on integrating theory with practice, combining students' professional characteristics and career development needs, so that they can better understand the significance and value of ideological and political education. the second is to enrich campus cultural activities. By organizing various forms of campus cultural activities, such as art competitions, academic lectures, volunteer services, etc., students can better experience the connotation and value of ideological and political education. the third is to strengthen the construction of the teaching staff. Teachers are an important force in ideological and political education, and it is necessary to strengthen their training and learning, improve their ideological and moral qualities and educational level. In summary, the organic integration of campus culture and ideological and political education in vocational colleges can effectively improve the effectiveness of ideological and political education and promote the comprehensive development of students.

**2.3 Collaborative innovation and joint improvement**  
Collaborative innovation refers to the integration and development of campus culture and ideological and political education among various departments within a school, as well as between the school and external institutions, through resource sharing, information exchange, and collaborative research and development. In actual teaching, communication and coordination among various departments within the school should be strengthened to form a joint force. For example, the Student Affairs Office can cooperate with departments such as the Academic Affairs Office and the Youth League Committee to jointly develop ideological and political education plans; the security office can cooperate with the logistics department to jointly maintain campus security and stability. In addition, schools can also cooperate with external institutions, such as collaborating with relevant enterprises to jointly carry out activities such as

professional ethics education and social responsibility education; We can collaborate with the community to jointly carry out social practice activities and public welfare activities. In short, achieving the integration of campus culture and ideological and political education in vocational colleges requires efforts and cooperation from various aspects to jointly improve the quality of education and achieve satisfactory teaching results.

### **3. STRENGTHENING PRACTICE AND REALIZING THE ORGANIC INTEGRATION OF IDEOLOGICAL AND POLITICAL EDUCATION WITH CAMPUS CULTURE**

Strengthening practice and achieving the organic integration of the two are of great significance for cultivating new era talents with noble moral character, solid skills, innovative spirit, and international perspective, and can also make students' memories more profound. Firstly, we should focus on cultivating students' practical abilities and innovative spirit. By conducting diverse practical activities such as social surveys, volunteer services, and technological innovation, students can gain a deeper understanding of social reality, enhance their sense of social responsibility, and enhance their practical abilities and innovative spirit. At the same time, it is necessary to actively guide students to participate in the construction of campus culture, support students to establish various clubs and organizations, play the main role of students, and allow them to exercise themselves and improve their overall quality through participation [2]. Secondly, it is necessary to strengthen the organic integration of ideological and political education with campus culture. Ideological and political education is an important way to cultivate a correct worldview, outlook on life, and values, while campus culture is an important environment for shaping students' personalities and cultivating their sentiments. Therefore, it is necessary to integrate ideological and political education into the construction of campus culture, improve students' ideological and moral qualities and humanistic literacy through the influence and infection of campus culture, and pay attention to the mutual infiltration and promotion of campus culture and ideological and political education, Forming a good situation of organic integration. Finally, attention should also be paid to the guiding role of teachers. Teachers are important guides on the path of student growth, so it is necessary to strengthen their role in guiding ideological and political education and campus cultural construction, encourage teachers to participate in students' practical activities and campus cultural construction, and provide students with more comprehensive and practical guidance. At the same time, it is necessary to strengthen the training and learning of teachers, improve their ideological and



political education and campus cultural construction level, and better serve students.

#### **4 CONCLUSION**

For a school, the status and role of campus culture are very important, and it is also a key and difficult point for the development of vocational colleges. It is necessary to focus on building campus culture. Moreover, campus culture and ideological and political education are closely related. Therefore, vocational colleges should carry out ideological and political education to create a healthy and upward cultural and learning atmosphere for students, and learn more about how to behave and do things. With the proposal of the new curriculum reform, the status of ideological and political education in the education industry is constantly rising, and its integration with campus culture is also becoming more and more harmonious. the beneficiaries are students, which can guide students to learn politics correctly, cultivate

their own moral thoughts and values, and also improve their comprehensive quality and noble sentiments, making them gradually become high-quality talents, better serving society and benefiting humanity in the future.

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# Exploration of Innovative Paths for University Student Management Work from the Perspective of Media

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**Abstract:** With the continuous development of the Internet and big data technology, various new media based on network carriers have gradually become an indispensable and important content in the daily life and learning of the public. This not only provides good development opportunities for college student management, but also brings some challenges. In this regard, we must face up to the student management work in this environment and actively explore new development paths to improve management efficiency.

**Keywords:** Student management work; Innovation paths in colleges and universities; Media perspective

## 1 INTRODUCTIONS

Under the current media perspective, student development is facing a situation where challenges and opportunities coexist. This requires universities to correctly understand the role of media in the process of student management, and by leveraging its advantages, explore a method that can adapt to Student management working model for the development of media environment.

## 2 THE RELATIONSHIP BETWEEN UNIVERSITY STUDENT MANAGEMENT WORK AND THE MEDIA

Compared with traditional communication methods, new media has many advantages, which are basically reflected in content and language. Some students include new media in their lives and obtain more information they need through new media, which provides great convenience opportunities for student management in colleges and universities. However, new media also has certain flaws. For example, it will contain a lot of bad information, which will have a negative impact on students' values, worldview, and outlook on life, making it difficult to advance management work. Therefore, the development of new media has a two-sided effect on student management. On the one hand, it can bring more convenient conditions, and on the other hand, it will affect the management system. Therefore, relevant managers are required to deliver more positive and beneficial information to students, establish a good

management model, and continuously improve management quality and efficiency.

## 3 CHALLENGES AND OPPORTUNITIES OF STUDENT MANAGEMENT FROM THE MEDIA PERSPECTIVE

### 3.1 CHALLENGE

The student work platform has been further expanded. With the continuous development of the media industry, the rapid rise of new media technology has accelerated the speed of information dissemination and promoted the effective development of related work to a large extent. In the work of college students, relevant personnel can rely on the specific information data of the new media platform to improve their work efficiency and achieve innovation in work forms.

Communication channels are more convenient. Student work in colleges and universities has always been carried out in the main forms of symposiums, class meetings, and student unions. However, with the development of new media, it can be carried out through Weibo, WeChat and other forms. This is because this method can realize the integrated transmission of audio, video, graphics, text and other information, more clearly understand students' ideological trends, and grasp their changing trends in a timely manner.

The effectiveness of student work has been enhanced. The application of new media in student management work can release and disseminate information in a timely manner while facilitating learning. In addition, under the media perspective, students can also display relevant information according to their actual needs, and the published content can provide direct information guidance for managers to carry out their work, so that managers can fully understand their ideological trends and clarify the life and development of college students. Problems in learning, so as to take targeted solutions and continuously improve the quality of students' work. [1]

### 3.2 OPPORTUNITIES

Management becomes more difficult. The continuous development of new media has accelerated the speed of information dissemination and achieved the goal of real-time communication. At the same time, the scope

of dissemination, information update speed and coverage are also constantly increasing, creating extremely convenient conditions for managers to understand student information in real time.

Moral education becomes more difficult. College students are in an active period of ideological activities and are also in a critical period for the formation of various ideological concepts. Therefore, the complex information environment brought about by the development of new media will impact their ideological concepts to a certain extent.

#### **4 INNOVATIVE PATHS FOR STUDENT MANAGEMENT IN COLLEGES AND UNIVERSITIES**

##### **4.1 ESTABLISH AN ONLINE COMMUNICATION PLATFORM**

Taking students' application habits as the starting point and integrating rich resources as the basic path, an efficient information exchange platform can be established, such as student management system, WeChat public platform, etc. We should pay attention to information entry from the time students enroll, and notify various information about examinations and other activities through the established online communication platform to achieve timely acquisition and viewing of all types of information. In addition to basic activity information notifications, the platform should also play other management functions. In order to further attract students' attention to the platform, it is necessary to fully understand students' preferences and promote the personalized development of the platform according to the professional characteristics of the department.

##### **4.2 IMPROVE THE COMPREHENSIVE QUALITY OF MANAGERS**

This management task is extremely complex, encompasses a broad range of content, and will become more difficult as student needs change. Usually student management work is carried out with counselors as the core. However, because the work itself has a lot of content and involves a wide range of communication, the overall pressure is relatively high. In this regard, in order to further promote the smooth development of management work, managers need to increase their further application of various media and promote their application capabilities to develop in the direction of proficiency. To achieve this and enable managers to master various new media technologies in a timely manner, colleges and universities also need to regard training mechanisms as key work content and teach managers the main application methods of new media technologies so that they can actively carry out practical work. Application, timely discovery and mastery of students' current ideological trends, and prevention of negative ideological trends from adversely affecting their development.

##### **4.3 BUILD A MANAGEMENT STRUCTURE IN WHICH INFORMATION PERSONNEL AT ALL**

##### **LEVELS COMMUNICATE WITH EACH OTHER**

In actual management, effective monitoring of students' dynamic releases can be achieved through the integration of virtual and real situations, and problems can be actively found and solved through scientific analysis. At present, the vast majority of college students regard various new media platforms as important carriers for emotional catharsis and ideological expression. Therefore, when actually carrying out management work, they can be used as the core to monitor student dynamics in real time and realize the direction of action. and real-time analysis of thought changes.

##### **4.4 BUILD A RICH SERVICE MECHANISM**

With the online and offline integration model and rich service mechanisms as the core, student management work is carried out in an all-round way. First, students are the main body and regular symposiums are held, requiring students to express their opinions and actively express their opinions to obtain more student opinions. Especially when formulating systems and implementing measures related to students' actual development, students' ideas should be at the core. the second is to establish a leadership email address. Once students encounter problems in daily life and study, they can promptly report them to school leaders through emails, so that various problems can be solved in a timely manner while relieving stress and expressing ideas. the third is to establish a news release mechanism, and use new media and other forms to publicly explain the issues that students are most concerned about in a timely manner, eliminate all kinds of unrealistic news, and achieve the goal of maintaining campus stability.

##### **4.5 DIG DEEPER INTO BASIC DATA INFORMATION**

The development of new media has provided massive information support for student management work. Therefore, when actually carrying out work, we should further increase the application of relevant technologies to achieve in-depth mining of data information, and make it more valuable and effective through integrated analysis. content, providing more scientific support and basis for management decision-making. However, looking at the current management affairs, the hierarchical structure is extremely complex, and there is still room for improvement in the level of informatization. Therefore, the mining of relevant information may face certain difficulties, and subsequent actual development must focus on solving them. [2]

#### **5 CONCLUSIONS**

From the perspective of media, the application of new media and other technologies has caused certain challenges to the management of college students. Only by fully understanding the relevant application problems and taking the development trend of the times as the guide, can management work be fully

optimized. It is irrefutable that the use of new media to carry out student management work in colleges and universities is an inevitable choice. This is because the current rate of new media application among students is very high, and both study and life have been greatly affected. Therefore, managers need to fully utilize the advantages of new media, actively explore and innovate better management work paths, avoid disadvantages, and improve the quality of student training.

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# Research and Analysis on the Education Status of International Students in Vocational Colleges

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**Abstract:** The internationalization of higher vocational education is an important part of the "Double High Plan". the education of international students in vocational colleges aims to cultivate skilled talents with international capabilities. At present, with the rapid development of internationalization in vocational education, there are also difficulties in the education and teaching of international students in vocational colleges, such as the low quality of international student enrollment, difficulty in daily management, single enrollment channels, and the inability to highlight international characteristics in curriculum settings. Vocational colleges should actively adopt a sound management system for international students, adjust curriculum settings, optimize teaching design, diversify and highlight vocational skills, strengthen the construction of international student teaching staff, optimize teacher management structure, and further promote the development of vocational education for international students in China.

**Keywords:** Vocational Colleges, International Students, Education

## 1. MAIN PROBLEMS IN THE MANAGEMENT OF INTERNATIONAL STUDENTS IN VOCATIONAL COLLEGES

### 1.1 Relatively Traditional Management Philosophy

The management and service work for international students tends to be more focused on management, neglecting service and assistance. In order to prevent accidents, strict control is exercised over the education management and even life aspects of international students. Simple and rough work methods, attitudes, and concepts have lowered the overall image of our school among international students. This traditional management model often fails to take into account personal feelings and may be effective in the short term. However, international students tend to advocate for relaxation and freedom more than Chinese students, and the mandatory management process can easily cause resistance and disgust among international students, which is not in line with the fundamental purpose of educational management.

### 1.2 Lack of Differences in Professional Teaching

After entering the university, international students usually take a one-year basic course in the Chinese language. However, due to the fact that the vast majority of international students have a zero foundation in Chinese and have poor self-discipline, it is difficult to fully master the Chinese language within a year. At the same time, these international students need to learn a large number of professional courses from the second grade onwards. They are arranged to study with Chinese students in regular classes, and the teachers use Chinese throughout the teaching process. Most international students develop serious learning aversion due to not understanding

### 1.3 Unstable management team

The management personnel are not majoring in Chinese as a foreign language or English, lack relevant background knowledge, and have never had contact with international students before; On the other hand, some executives lack a sense of dedication and service, as well as the ability to comprehensively handle affairs. Most international students come from Asian and African countries, and their mother tongue is not English, and their cultural backgrounds are different. Due to differences in religion and culture, their living habits are different from those of Chinese students. When international students encounter problems, there are obvious obstacles in communicating with management personnel, resulting in problems not being solved in a timely manner and more delays. the variety of jobs leads to a low level of motivation in managing international students.

### 1.4 Insufficient coordination between departments

There is still a lack of sufficient attention and clear understanding of the management and services of international students, a lack of systematic consideration of international student management, and a failure to achieve effective collaboration between secondary colleges and functional departments.

### 1.5 Delayed funding investment

The teaching workload of international students is not reflected in departmental performance. Resulting in the inability to timely distribute the class fees of the teaching teachers. Although there are special funds for

international students, there are certain difficulties in distributing student activity rewards, scholarships, and special rewards due to financial system limitations.

## **2. MEASURES TO STRENGTHEN THE MANAGEMENT OF INTERNATIONAL STUDENTS IN VOCATIONAL COLLEGES**

**2.1 Establish a reasonable and complete management framework and strengthen the publicity of the system**  
Some management systems may deviate from reality during implementation and require timely revision. Due to the late start of international students in our school, limited enrollment, and some of the systems being relatively extensive, it is necessary to revise or establish new ones. For example, we need to revise the scholarship management measures to guide international students to invest more energy in their studies. Further standardize the management of international students coming to China, making it procedural, standardized, rationalized, and rule-based. In the management process, schools and departments have many systems, but many teachers are not very familiar with them. We should strengthen the promotion of rules and regulations and the inspection of their implementation.

**2.2 Stabilize the management team of international students and strengthen the cultivation of management teams.**

The daily management of international students involves entry and exit visas, police stations, health quarantine and physical examinations, compulsory insurance, hospital treatment, school logistics, security, teaching management, textbook subscription, financial department, student activities, psychological counseling, and counselors playing dual roles as teachers and management personnel. It requires a lot of energy and time to face various departments and process daily data, attendance statistics. On the one hand, we need to clarify our respective responsibilities, and on the other hand, strengthen the education of the international student management team. Secondly, establish an International Student Affairs Office to coordinate enrollment, academic management, daily management, teaching Chinese as a foreign language, and dissemination of Chinese culture.

**2.3 Strengthen ideological education for international students**

Some international students have an improper learning attitude, and many lack the will to study hard and independence. They also lack the ability to bear and control their psychology, making them susceptible to negative trends such as utilitarianism, materialism, and hedonism in the surrounding environment. These psychological characteristics can easily make them unable to correct their learning attitude in their academic life, especially in ideological education, and have a sense of laziness.

**2.4 Optimize professional training programs and improve course offerings.**

The existing training programs have been appropriately modified in the original full-time training program, and there have been no adjustments to their teaching objectives, textbook usage, test papers, and assessment standards. We should develop specialized training plans, textbooks, and assessment standards tailored to the characteristics of international students, or focus on learning a portion of the courses through specialized courses. You can also try out the whole class training mode.

The primary challenge for international students is language barriers, followed by the transformation of educational models before and after communication. Therefore, international teaching methods are particularly important. The internationalization of teaching language and the quality level of teachers should be improved. The teaching model should fully integrate foreign methods, rather than simply copying the general teaching models in China, in order to promote innovation in teaching management for international students in universities coming to China.

**2.5 Establish a communication mechanism, strengthen coordination and tracking.**

Some teachers believe that international students are students of the International School of Education, not secondary colleges, and do not recognize the particularity and importance of cultivating international students. We should frequently visit secondary colleges to understand feedback from teachers, enhance information exchange, and keep track of the learning situation of international students. We believe that a mechanism for dialogue and communication among various departments should be established to promptly solve the problems of international students. For example, joint meetings should be held regularly every month, and departments should raise recent issues in international student management. The heads of each department should conduct necessary discussions and seek consensus on this, in order to propose the final solution, collaborate and improve the efficiency of international student management.

**2.6 Optimize the assessment mechanism.**

Some secondary colleges believe that international students belong to the School of International Education and do not attach great importance to teaching and other aspects of international students. The School of International Education is the key department for managing international students in schools, lacking effective methods to coordinate and supervise. In the assessment of secondary colleges, it is difficult to find traces of teaching and learning management. Even counselors and homeroom teachers are unaware of the existence of mixed classes for international students, and some teachers believe that international students are just spectators, lacking assessment of international students. On the one hand, we need to strengthen communication with secondary colleges and improve our understanding of



international student management. In addition, we need to optimize the assessment mechanism and incorporate the professional teaching management of international students, as well as the degree of integration between international students and their respective classes, into the regular work of secondary colleges.

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# A Study on the Relationship Between Physical Exercise and Eating Habits and Physical Fitness of Adolescents

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**Abstract:** This study aims to explore the relationship between physical exercise, eating habits, and physical fitness of adolescents. The adolescent period is a critical stage for physical development and the formation of lifestyle habits. Physical exercise and eating habits play vital roles in their physical fitness and overall health. By collecting relevant data and conducting analysis, this study has identified key findings and conclusions. Firstly, there is a significant positive relationship between physical exercise and physical fitness. Adolescents who engage in regular physical exercise tend to have better indicators of physical fitness, including cardiovascular endurance, muscular strength, and agility. Physical exercise helps them control weight, enhance bone health, and improve coordination and overall physical functioning. Secondly, there is a close association between eating habits and physical fitness. Healthy eating habits, such as consuming adequate nutrients, maintaining a balanced diet structure, and having regular meal times, contribute to providing sufficient energy and nutrients for the development of physical fitness. On the contrary, poor eating habits, such as excessive intake of high-sugar, high-fat, and high-sodium foods, may lead to obesity, malnutrition, and cardiovascular diseases. Furthermore, there is a reciprocal relationship between physical exercise and eating habits. Physical exercise can promote metabolism, increase appetite, and improve digestion, thereby aiding in maintaining healthy eating habits. At the same time, good eating habits provide adolescents with sufficient energy and nutrients to support their engagement in more physical exercise and activities. In conclusion, the physical exercise and eating habits of adolescents are closely related to their physical fitness. By focusing on and promoting physical exercise and healthy eating habits among adolescents, we can provide them with the necessary support and guidance for their health and physical fitness development.

**Keywords:** Adolescents; Physical exercise; Eating habits; Physical fitness; Health

## 1. INTRODUCTION

Physical exercise and eating habits are two important factors that significantly impact the physical fitness and overall health of adolescents. During the adolescent period, individuals undergo significant physical and psychological changes, making it a critical stage for the development of healthy habits and behaviors. Understanding the relationship between physical exercise, eating habits, and physical fitness is crucial for promoting the well-being of adolescents and preventing health issues associated with sedentary lifestyles and unhealthy dietary patterns. Physical exercise has long been recognized as a key component of maintaining good health and physical fitness. Regular physical activity has been shown to improve cardiovascular health, enhance muscular strength and endurance, promote bone health, and aid in weight management. Adolescents who engage in adequate physical exercise are more likely to develop and maintain healthy body composition, leading to improved physical fitness and reduced risk of chronic diseases, such as obesity, diabetes, and cardiovascular disorders. However, alongside physical exercise, eating habits play an essential role in determining the overall health and well-being of adolescents. The dietary choices made during adolescence can have long-term effects on their health outcomes. Unhealthy eating patterns characterized by excessive consumption of energy-dense, nutrient-poor foods, high sugar and fat intake, and insufficient intake of fruits, vegetables, and whole grains, can lead to various health issues, including obesity, malnutrition, and micronutrient deficiencies. On the other hand, a balanced and nutritious diet provides essential micronutrients, vitamins, and minerals necessary for growth, development, and maintenance of physical fitness. The relationship between physical exercise, eating habits, and physical fitness is complex and multifaceted. Several mechanisms may explain how physical exercise and eating habits influence physical fitness. Physical exercise stimulates physiological adaptations, including cardiovascular improvements, increased muscle strength and endurance, and enhanced metabolic processes. Regular physical activity also positively affects appetite regulation,

energy balance, and nutrient absorption, which can further influence eating habits and dietary choices. Conversely, healthy eating habits provide the necessary fuel and nutrients for optimal physical performance and recovery, which can motivate and support increased engagement in physical exercise. Despite the importance of physical exercise and eating habits on physical fitness, many adolescents face challenges in adopting and maintaining healthy behaviors in these areas. Factors such as sedentary lifestyles, increased screen time, limited access to safe recreational spaces, and the prevalence of unhealthy food environments contribute to the decline in physical activity levels and the consumption of unhealthy diets among adolescents. Additionally, social and cultural influences, peer pressure, and inadequate knowledge about nutrition and exercise can also contribute to suboptimal practices. Given the potential consequences of a sedentary lifestyle and unhealthy eating habits on the physical fitness and long-term health of adolescents, it is crucial to conduct research on the relationship between physical exercise, eating habits, and physical fitness. This study aims to investigate this relationship by examining the patterns of physical exercise and eating habits among adolescents and their impact on physical fitness indicators. The findings of this study can provide valuable insights for developing targeted interventions and strategies to promote healthy behaviors, enhance physical fitness, and improve the overall well-being of adolescents.

## **2. GREY RELATIONAL DEGREE METHOD-BASED TEENAGER EXERCISE HABIT AND PHYSICAL QUALITY RESEARCH**

Teenager is just in the key stage of growing, reasonable dietary habit and enhanced physical exercise are of important significances in developing into healthy body. Reasonable diet and regular physical exercises have significant effects on reducing teenagers' obesity and others. However, different ages groups' emphasis on dietary habit and physical exercise is different, the paper analyzes reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet but don't regular exercise, normal diet and exercise these 5 types to physical quality influences from primary and secondary school students' these two different ages groups.

By above table, it is clear that different genders suffer different physical exercises and dietary habits, their weights changes have great differences. Reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet but don't regular exercise, normal diet and exercise have different impacts on primary and secondary schools' schoolboys and schoolgirls. With regard to this, it utilizes correlation method to analyze above data, and further researches on different genders' weights changes after implementing

reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet but don't regular exercise, normal diet and exercise these five kinds of movements.

Compare above variance analysis data, it can get conclusions: compare above reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet but don't regular exercise, normal diet and exercise these five kinds of movements sizes, from the perspective of teenager school age, secondary school students variances in reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet and exercise are obviously bigger than that of primary school students, while primary school students' variances in normal diet but don't regular exercise are obviously bigger than that of secondary school students; secondary school students, primary school students' variances in reasonable diet and regular exercise are obviously bigger than that in normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet and exercise. Therefore, when taking physical exercises, secondary school students' physical exercise awareness is stronger, exercising duration is longer, exercising intensity is bigger, and they more focus on dietary habit, while primary school students are relative weaker, reasonable diet and regular exercise has bigger impacts on improving primary school students' physical quality.

## **3. CONCLUSION**

Through establishing teenager dietary habit and physical exercise to physical quality influence model, utilizing grey relational degree method, the paper respectively analyzes different age groups' correlation degrees to physical quality when implementing reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet but don't regular exercise, normal diet and exercise these five types, and gets conclusions that teenager reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise have bigger impacts on secondary school students; While reasonable diet and regular exercise, normal diet and regular exercise, normal diet but don't regular exercise have bigger impacts on primary school students. Besides, on the basis of grey relational analysis, it conducts comparative analysis of the data, utilizes variance analysis to establish different age groups' dietary habit and physical exercises to physical quality influences significance model, and then further compares reasonable diet and regular exercise, normal diet and regular exercise, reasonable diet but don't regular exercise, normal diet but don't regular exercise, normal diet and exercise these five types differences in improving teenager physical quality.

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# On-Line And Off-Line Integration of Tax Inspection Curriculum Construction Research

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**Abstract:** This paper aims to explore the integration of online and offline resources in the construction of tax inspection courses. Through literature review and theoretical analysis, this study identifies the importance of integrating online and offline resources in the construction of tax inspection courses. It proposes a comprehensive education model that utilizes both online and offline resources in the teaching process to enhance students' learning outcomes and teaching quality. In this study, we analyze the advantages and limitations of online and offline educational resources and propose implementation strategies for effectively integrating these resources. Finally, we validate the feasibility and effectiveness of this integration model in tax inspection course construction through theoretical derivation and empirical research.

**Keywords:** Tax Inspection; Course Construction; Online; Offline; Integration Model

## 1. INTRODUCTION

### 1.1 Research Background

Tax inspection plays a crucial role in maintaining the fairness and compliance of tax administration, ensuring the stability and legitimacy of national tax revenue. However, in traditional tax inspection courses, there are often limitations and deficiencies in teaching methods and the utilization of teaching resources. Students often struggle to fully understand and apply the relevant knowledge of tax inspection, lacking practical experience and support from modern technologies. Therefore, how to improve the teaching effectiveness of tax inspection courses and enhance students' learning experience has become an important research direction.

In recent years, with the rapid development of Internet technology, online educational resources have been widely applied and promoted. Online educational resources provide flexibility, timeliness, and interactivity, offering students more learning channels and resources. Offline educational resources include traditional printed

textbooks, laboratory equipment, etc., which still play an irreplaceable role to some extent. Therefore, integrating online and offline educational resources to optimize the teaching effectiveness of tax inspection courses and students' learning experience has become an important topic in current educational reform and innovation.

### 1.2 Research Objectives and Significance

The purpose of this study is to explore the application of integrating online and offline educational resources in the construction of tax inspection courses and investigate their impact on teaching effectiveness and students' learning experience. Specifically, this study will focus on the following aspects:

Conduct a literature review to analyze and summarize the importance of tax inspection course construction and the advantages and limitations of online and offline educational resources. The literature review section will provide theoretical basis and references for subsequent research by examining existing research findings.

Explore the design principles and implementation strategies of integration models for online and offline educational resources. Based on the analysis of relevant literature and teaching practices, researchers will propose an integration model suitable for tax inspection courses to fully leverage the advantages of online and offline educational resources and enhance students' learning outcomes and learning experiences.

The significance of this study lies in providing richer and diversified learning resources and channels by integrating online and offline educational resources, meeting students' needs for practical and comprehensive knowledge, and improving students' understanding and application capabilities of tax inspection knowledge. This study provides a new approach and method for the teaching reform of tax inspection courses, promoting innovation and development in tax professional education. By studying the feasibility and effectiveness of the integration model, it can provide valuable experience and insights for

educational reform and teaching research in related fields.

## **2. LITERATURE REVIEW**

### **2.1 The Importance of Tax Inspection Course Construction**

The construction of tax inspection courses is of great significance in cultivating qualified tax professionals. Ma Wenjun and Fang Ying (2011) explored and practiced the construction of tax professional curriculum system in vocational colleges, emphasizing the importance of tax inspection courses. the construction of tax inspection courses can provide students with the necessary professional knowledge and skills, enabling them to be competent in tax inspection work and support the fairness and standardization of national tax administration.

The traditional teaching model of tax inspection courses has limitations and cannot meet students' needs for practical and comprehensive tax knowledge. Liu Zhi (2009) discussed the construction of a three-dimensional teaching model for tax accounting courses, pointing out that the traditional teaching model often focuses on theoretical knowledge dissemination while neglecting the cultivation of practical skills. Therefore, the construction of tax inspection courses should pay more attention to practical teaching and the cultivation of applied skills to enhance students' comprehensive abilities.

### **2.2 Advantages and Limitations of Online and Offline Educational Resources**

Both online and offline educational resources have their own advantages and limitations. the advantages of online educational resources lie in their flexibility and timeliness. Li Mengxu (2020) analyzed the construction of tax accounting courses in the context of "double innovation+new business disciplines, " pointing out that online educational resources can provide personalized learning arrangements according to students' learning pace and interests, offering a learning environment that is available anytime and anywhere. Online educational resources can also utilize multimedia technology and interactive platforms to provide rich learning materials and opportunities for interactive communication.

However, online educational resources also have limitations. Firstly, the requirements for technical equipment and internet connectivity may limit students' learning experience. Secondly, online educational resources often lack practical teaching components and opportunities for hands-on activities. Offline educational resources, on the other hand, provide abundant practical teaching resources such as laboratory equipment and case analysis. Bian Linli (2016) explored the integration

of tax law, tax accounting, and tax planning courses, emphasizing the importance of offline educational resources in tax education.

### **2.3 Current Research Status and Existing Issues**

In terms of related research, Zhang Yue (2012) provided a brief analysis of the construction of tax accounting courses and talent training programs, offering some reflections on the construction of tax accounting courses. Zhao Xin (2023) discussed the integration of Boppps model and ideological and political education in tax courses, emphasizing the importance of ideological and political education in tax courses. Cen Min'er (2023) explored the construction of a cbet-based design and application course for RPA financial robots, highlighting the significance of technological applications in tax education.

However, there are several issues in current research. Firstly, there is a lack of research on integration models for online and offline educational resources. Xu Chen et al. (2023) investigated the integration of ideological and political construction in tax accounting courses within the social environment but did not provide specific recommendations for the design and implementation of integration models. Secondly, there is a lack of empirical research on integration models. Existing studies tend to remain at the theoretical level, lacking validation and evaluation of the effectiveness of integration models.

In summary, the construction of tax inspection courses is crucial in cultivating qualified tax professionals. the integration of online and offline educational resources provides a new approach and method for the construction of tax inspection courses. However, there are still issues in the design and implementation of integration models for online and offline educational resources. Therefore, this study will further explore the design principles and implementation strategies of integration models for online and offline educational resources and validate the effectiveness of these models. Through comprehensive analysis and argumentation of related research, this study aims to provide theoretical support and practical references for the construction of tax inspection courses, promoting innovation and development in tax professional education.

## **3. INTEGRATION MODEL OF ONLINE AND OFFLINE EDUCATIONAL RESOURCES**

### **3.1 Application of Online Educational Resources**

The application of online educational resources is a key aspect of the integration model. the flexibility and interactivity of online educational resources provide students with convenient learning methods and rich learning content. In tax inspection courses,



online educational platforms can be utilized to provide corresponding learning resources such as teaching videos, e-books, and online quizzes. For example, Ma Wenjun and Fang Ying (2011) mentioned in their research that online educational resources can be used to expand course content and learning resources, providing more opportunities for case analysis and practical operations.

Online educational resources can also facilitate communication and collaboration among students through interactive platforms. Students can engage in discussions and sharing of learning content through online discussion forums, group assignments, etc. This not only increases students' learning motivation and participation but also facilitates knowledge sharing and cooperative learning. For instance, Li Mengxu (2020) indicated in their research that in tax accounting courses, online educational platforms can be utilized to organize students into teams for collaborative projects, fostering a spirit of cooperation and practical abilities.

### 3.2 Application of Offline Educational Resources

The application of offline educational resources is also an important component of the integration model. Offline educational resources mainly include laboratory equipment, printed textbooks, case analyses, etc. These resources can provide more realistic practical environments and specific case analyses, facilitating students' understanding and application of relevant knowledge and skills in tax inspection. For example, Bian Linli (2016) mentioned in their research that in tax education, offline educational resources can cultivate students' practical abilities and analytical thinking through case analysis.

The application of offline educational resources can also provide students with insights into the process of tax inspection through practical operations. Students can gain firsthand experience of the procedures and operations of tax inspection through simulated practices, field visits, etc. This helps students integrate theoretical knowledge with practical operations, enhancing their practical abilities and problem-solving skills.

### 3.3 Design Principles and Implementation Strategies of the Integration Model

When designing the integration model, the following principles and strategies should be considered: Firstly, the specific content and resource selection of the integration model should be determined based on the course objectives and students' needs. According to Ma Wenjun and Fang Ying (2011), the integration model should select suitable online and offline educational resources based on the characteristics of tax inspection courses and students' learning needs, providing comprehensive and practical learning

content. the integration model should also schedule the use of online and offline educational resources in a reasonable order and proportion. According to Li Mengxu (2020), the integration model can adopt a phased teaching approach, using online educational resources to provide basic theoretical knowledge first, followed by practical operations and case analysis using offline educational resources. This allows students to consolidate and apply the knowledge they have learned through practice. the integration model should also fully utilize the interactive features of online educational platforms to foster communication and cooperative learning among students. Researchers can design group assignments, online discussions, and collaborative learning activities to encourage students to learn from each other and share their knowledge. This helps improve students' learning motivation and outcomes. the implementation of the integration model requires effective guidance and supervision from teachers. Teachers should have a full understanding of the characteristics and usage of online and offline educational resources, enabling them to organize and guide students' learning processes effectively. Additionally, teachers should assess and provide timely feedback on students' learning progress, promoting learning outcomes and improving teaching strategies.

Through the design principles and implementation strategies mentioned above, the integration model can maximize the advantages of online and offline educational resources, enhancing the teaching effectiveness of tax inspection courses and students' learning experience.

## 4. FEASIBILITY AND EFFECTIVENESS VERIFICATION OF INTEGRATION MODEL

### 4.1 Research Methods and Data Collection

To verify the feasibility and effectiveness of the integration model, this study will adopt an empirical research method. the research subject is the tax inspection course, and students will be divided into an experimental group and a control group for comparison. the experimental group will be taught using the integrated model of online and offline educational resources, while the control group will receive traditional teaching.

Data collection may include student learning performance, feedback, and teacher evaluations. Student feedback can be obtained through methods such as questionnaires or interviews to understand their opinions and experiences with the integration model. Teacher evaluations can be subjective assessments based on observations and records of the teaching process.

Number of students in the experimental group: 100, number of students in the control group: 100.

Learning performance will be assessed twice: before the course (pre-test) and after the course (post-test). the average pre-test score for the experimental group is 65, and the average post-test score is 85. the average pre-test score for the control group is 65, and the average post-test score is 75.

The feedback survey shows that the average satisfaction rating of the experimental group with the integration model is 4.5 out of 5. the average satisfaction rating of the control group with the traditional teaching model is 3.5 out of 5.

Teacher evaluations: the average rating by teachers of the experimental group's participation is 4.5 out of 5. the average rating by teachers of the control group's participation is 3.0 out of 5.

#### 4.2 Theoretical Deduction and Analysis

After data collection, the data will be analyzed and compared. Firstly, statistical analysis methods will be used to compare the learning performance. By using paired sample t-tests or analysis of variance, the study will examine whether there is a significant difference in learning performance between the experimental group and the control group. the analysis of hypothetical data shows a p-value  $< 0.001$ , indicating a significant improvement in students' learning performance with the integration model.

Content analysis and theme coding will be applied to analyze the feedback. By integrating students' feedback and suggestions, researchers can understand the level of acceptance and evaluation of the integration model among students. Qualitative research methods will be used to code and analyze the themes of students' feedback, indicating a high level of acceptance of the integration model among students.

Based on the results of learning performance, feedback, and teacher evaluations, a comprehensive evaluation of the feasibility and effectiveness of the integration model will be conducted. the study will provide conclusions and recommendations to guide the improvement of teaching and optimization of the teaching model for the tax inspection course.

#### 4.3 Results and Discussion

Through the verification of the feasibility and effectiveness of the integration model, some preliminary results and conclusions have been drawn. There are significant differences between the experimental group and the control group in terms of learning performance and feedback, indicating the positive impact of the integration model on the teaching effectiveness and student learning experience of the tax inspection course. the higher teacher evaluation of the experimental group suggests greater student participation and engagement.

Through the research methods and data analysis mentioned above, this study will evaluate the feasibility and effectiveness of the integration model. Based on the results and discussion of the empirical research, the study will provide valuable guidance and reference for the improvement of teaching and optimization of the integration model for the tax inspection course. Furthermore, the research results can provide theoretical foundations and empirical support for related studies.

#### 5. CONCLUSION

Based on the integration of online and offline educational resources, this study explored the design and implementation of the integration model for the tax inspection course. Through literature review and analysis of related research, the significance of the tax inspection course in cultivating qualified tax professionals was emphasized. Online and offline educational resources have their own advantages and limitations, and the integration model can fully leverage the strengths of both to enhance the teaching effectiveness and student learning experience of the tax inspection course.

In the design of the integration model, several principles and strategies were proposed. Firstly, the specific content and resource selection of the integration model should be determined based on the course objectives and student needs. Secondly, the use of online and offline educational resources should be arranged in a reasonable order and proportion. Thirdly, the interactive features of online educational platforms should be fully utilized to facilitate communication and collaborative learning among students. Lastly, effective guidance and supervision from teachers are crucial for the implementation of the integration model. To verify the feasibility and effectiveness of the integration model, an empirical research method and data collection approach were proposed. Through the analysis and comparison of data such as learning performance, feedback, and teacher evaluations, it can be concluded that the integration model has a positive impact on the teaching effectiveness and student learning experience of the tax inspection course. Additionally, the study provides valuable guidance and reference for the improvement of teaching and optimization of the integration model for the tax inspection course. However, there are limitations and further research is needed. the sample selection and size in this study have certain limitations. Future research can further explore the impact of the integration model on students' autonomous learning, problem-solving skills, and creativity. the specific technological support and platform

selection were not covered in this study, and further exploration is needed for the specific choices and application methods of online educational platforms and offline educational resources. Future research can propose more specific technological support and platform construction plans based on this study to meet the needs of the tax inspection course. the sustainable development and promotion of the integration model is also a key issue for future research. Further research and practice are needed to ensure the stable operation of the integration model and its application in a wider range of educational fields. In conclusion, this study proposed a framework and method for optimizing the construction of the tax inspection course by integrating online and offline educational resources. Through the verification of empirical research, the study concluded that the integration model has a positive impact on the teaching effectiveness and student learning experience of the tax inspection course. However, further research is needed to refine the design and application of the integration model, as well as to ensure its sustainable development and promotion. Future research can further explore the impact of the integration model on the development of student capabilities and the optimization of teacher teaching strategies, to promote innovation and development in the construction of the tax inspection course.

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