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Association between Physical Activity and Physical Fitness Index among Children and Adolescents in Shaanxi Province

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Abstract:

With economic development and social progress, the lifestyle of children and adolescents has changed significantly, with excessive nutrient intake, sedentary behavior, and lack of physical activity affecting their physical fitness level and long-term health. A total of 2,013 children and adolescents aged between 7 to 18 years old were selected by stratified cluster random sampling method in Shaanxi Province. The changes in physical activity level, physical fitness index (PFI), and related body composition were analyzed. The results showed that the body mass index (BMI) and waist circumference (WC) of children and adolescents increased with age, and there were significant differences between boys and girls. Urban children and adolescents spend more time on physical activity than rural children and adolescents. This study is expected to provide theoretical support and practical guidance for improving the health status of children and adolescents.

Keywords:

Children
Adolescents
Physical activity

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1. Introduction

With the rapid pace of modern life, a series of public health issues have emerged, such as overnutrition and prolonged sitting, leading to a rise in abnormal body composition among children and adolescents in China.

Notably, the prevalence of overweight and obesity has increased significantly, becoming a major health concern^[1]. Being overweight or obese can lead to a decline in the physical fitness levels of children and adolescents and may even harm their health in adulthood^[2]. According to a previous study, between 1985 and 2009, the overweight rate among Chinese children and adolescents rose from

1.11% to 9.62%, while the obesity rate increased from 0.13% to 4.95%^[3].

According to the 2010 National Physical Fitness and Health Census, only 22.7% of students met the recommended amount of physical activity of one hour per day. The percentage of adolescents who met the recommended amount of physical activity was 32.7% for 9 to 13 years old, 20.7% for 13 to 16 years old, and 12.5% for 16 to 19 years old, respectively. The level of physical activity in adolescents has decreased gradually^[4]. The 2014 National Physical Fitness and Health found that the physical activity level of adolescents showed a downward trend with the increase of age^[5]. A 2018 World Health Organization study based on 1.6 million students aged 11 to 17 years old found that globally, more than 80% of school-aged children and adolescents do not meet the daily requirement of at least one hour of physical activity per day.

Physical fitness index is an important basis for evaluating physical health, which can comprehensively and objectively reflect the physical status and physical health level of children and adolescents. Based on previous studies, this research conducted tracking tests on the physical activity levels and physical fitness indices of children and adolescents. The measured physical activity data were used to evaluate their activity levels, aiming to comprehensively understand the correlation between physical activity and physical fitness. This study provides a theoretical basis for improving the physical health of children and adolescents in Shaanxi Province.

2. Results and analysis

2.1. Characteristics of BMI changes with age in children and adolescents

In both boys and girls, BMI increased from 16.13 kg/m² at age 7 to 23.77 kg/m² at age 18, with a standard deviation of 3.16 at age 7 and 3.21 at age 18. It can be seen that the difference in BMI gradually expands, which is mainly related to the difference in the growth rate of adolescent individuals during this period^[6]. Some boys have entered the peak of their development, while others are in the slow stages of development, so the BMI fluctuates greatly.

For girls, the mean BMI was 16.42 kg/m² at 7

years old, 20.09 kg/m² at 18 years old, and the standard deviation was 3.60 at 7 years old, which then dropped to 2.54 at 18 years old. The narrowing of the BMI gap in girls after the age of 16 years old is due to the stability of girls' physical development after puberty. After the age of 13, the increase in BMI is primarily due to substantial acceleration in body fat gain.

2.2. Characteristics of waist circumference changes with age in children and adolescents

Waist circumference (WC) was positively correlated with age in both boys and girls. In boys, the mean waist circumference increased from 53.04 cm to 72.62 cm between the ages of 7 and 18. Although the standard deviation of waist circumference fluctuated slightly across age groups, it overall increased slightly from 9.53 cm at age 7 to 9.04 cm at age 18 and remained relatively stable, ranging from 9 to 11 cm. It is worth noting that the growth rate of waist circumference in boys accelerates after the age of 13, especially during the period from 13 to 16 years old. Due to large individual differences in growth and development, changes in waist circumference were also more pronounced^[7]. This change is highly correlated with the peak growth period, when boys' weight, height, bone, and muscle development are rapidly increasing, which leads to a significant increase in waist circumference.

The mean waist circumference (WC) of girls increased from 53.16 cm to 66.80 cm between the ages of 7 and 18. From ages 7 to 10, the increase in WC was gradual, rising from 53.16 cm to 61.15 cm. During this period, the standard deviation was relatively large, at 9.32 cm, 10.25 cm, 9.75 cm, and 10.08 cm, respectively. At age 16, the standard deviation of waist circumference decreased to 8.52 cm, lower than the 9.32 cm at age 7. This change reflects the body shape development in girls: from ages 7 to 10, girls underwent a period of rapid body shape change, marked by a significant increase in waist circumference, body fat, and skeletal development. However, after age 16, the growth rate of girls' waist circumference slowed as puberty ended.

2.3. Characteristics of time spent on daily physical activity among children and adolescents in different regions

The purpose of this study was to analyze the time spent on physical activity by urban and rural children and adolescents aged 7 to 18 and to better understand the differences and patterns in physical activity time between the two groups. There were differences in the selection of physical activity durations (< 30 minutes, 31 to 60 minutes, and > 61 minutes) among children and adolescents in different areas. Regarding the proportion of children and adolescents engaging in physical activity for less than 30 minutes, the proportion of urban children and adolescents under the age of ten decreased year by year^[8].

In contrast, the proportion of time spent on physical activity among rural children and adolescents aged seven to nine was relatively high. The study found that the proportion of physical activity time for rural children aged seven to eight was 53.33% and 46.88%, while for urban children, it was 46.67% and 42.50%, respectively. Rural children and adolescents were more likely to engage in physical activity for less than 30 minutes, which may be related to factors such as the rural living environment, available activity space, and family support.

In terms of the proportion of physical activity (PA) time between 31 and 60 minutes, the trends for urban and rural children and adolescents were similar. The proportion of physical activity increased in urban children and adolescents after the age of 12, reaching 40.00% at age 12 and 24.07% at age 18. However, the proportion of rural children in the same age group changed little and remained high, at 25.58% at age 18. Urban children and adolescents tended to have more regular physical activity schedules, which may be closely related to better sports facilities and greater opportunities for extracurricular activities in urban areas. Urban adolescents have more opportunities to participate in extracurricular physical activities and access advanced sports facilities in schools and communities, which increases their likelihood of engaging in longer durations of physical activity.

In terms of the proportion of physical activity time exceeding 61 minutes, the proportion of urban children

participating in physical activity for this duration gradually increased with age, particularly among children and adolescents over 12 years old. Specifically, at age 16, the proportion of urban children and adolescents was 11.73%. In contrast, the proportion of rural children and adolescents in this regard is lower. Although there is an increase between the ages of 13 and 14, the overall level remains lower than that of urban children. The relative scarcity of resources and facilities in rural areas, along with fewer types of physical activities and opportunities, is one of the main reasons.

3. Conclusion and recommendations

3.1. Conclusion

The difference in BMI between boys and girls was small at the age of six to ten but increased rapidly with the onset of puberty in girls at the age of 11 to 13. The increase of WC in boys was obvious from 13 to 16 years old. However, for girls, WC increased sharply from seven to ten years old and gradually became stable with the end of adolescence. Urban children and adolescents were more likely to engage in longer and more regular physical activities due to more abundant physical resources and opportunities, while rural children were more likely to participate in short-term physical activities and less likely to participate in long-term physical activities.

3.2. Recommendations

Strengthening physical fitness monitoring and providing individualized interventions for children and adolescents to promote healthy growth is essential. We should also enhance the development of sports facilities and promote physical activity for children and adolescents in rural areas to narrow the gap between urban and rural areas. More attention should be paid to the changes in body shape of children and adolescents aged seven to ten and 13 to 16, with a focus on weight management and waist circumference to reduce the risk of obesity.

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Interdisciplinary Integration in Dance Education: The Intersection of Art and Science

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Abstract:

This research explores the integration of interdisciplinary approaches in dance education, specifically focusing on the intersection of arts and sciences. The study aims to uncover how interdisciplinary teaching influences students' creativity, critical thinking, and scientific literacy. Using the framework of Science, Technology, Engineering, Arts, and Mathematics (STEAM) education, the study conducted a three-month experimental intervention combining dance and science content. Results indicate that students in the experimental group demonstrated significant improvements in creativity, critical thinking, and scientific literacy compared to the control group. These findings highlight the potential of interdisciplinary integration to enhance multiple student competencies, offering valuable insights for the future reform of dance education.

Keywords:

Interdisciplinary integration
Dance education
STEAM education
Creativity
Critical thinking
Scientific literacy

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1. Introduction

1.1. Background and significance

In contemporary educational fields, interdisciplinary integration has become a widely discussed topic, especially within the framework of Science, Technology, Engineering, Arts, and Mathematics (STEAM) education. The intersection of arts and science offers unprecedented opportunities for educational innovation. Dance, as a highly expressive art form, holds a significant place not only in aesthetics and culture but also in providing new dimensions to education through its organic integration with science. Dance is more than just physical

expression—it can serve as an innovative medium for students to explore scientific principles and technological concepts^[1]. This perspective aligns with the rapid development of interdisciplinary education, especially in the context of emerging technologies such as Virtual Reality (VR) and Artificial Intelligence (AI) that are increasingly integrated into educational practices^[2].

By incorporating dance into interdisciplinary education, students not only enhance their physical and artistic abilities but also deepen their cognitive understanding of science and technology. Studies have highlighted that traditional Chinese Dunhuang dance

enables students to explore multiple dimensions of history, science, and culture through artistic practice ^[3]. This interdisciplinary learning model enriches students' comprehension of complex concepts and enhances their multidimensional thinking. The rise of STEAM education stems from this premise, as the combination of arts and science enriches educational content, fosters creativity, and cultivates critical thinking, leading to holistic student development ^[4].

1.2. Research questions and objectives

This research seeks to address the core question: How can dance education, within the context of interdisciplinary integration, effectively facilitate the intersection of arts and sciences? Specifically, the study aims to explore the following questions.

- (1) How can dance, as an art form, integrate with scientific fields such as biomechanics, exercise science, and technological innovation?
- (2) What impact does an interdisciplinary dance education model have on students' creativity, critical thinking, and scientific literacy?
- (3) How can dance curriculum design foster balanced development in both arts and sciences?

These questions offer new perspectives on dance education and provide important insights for the advancement of STEAM education. Dance is not only a performing art but also a profound learning tool that helps students build connections across multiple disciplines and enhances their problem-solving skills through interdisciplinary teaching methods ^[5].

1.3. Research purpose and significance

This research aims to thoroughly explore the potential of dance education in interdisciplinary integration through literature analysis, curriculum design, and teaching experiments. Specifically, within the framework of STEAM education, this study will investigate how dance teaching can foster students' innovative thinking across science, technology, and the arts. Through a combination of theory and experimentation, the study will analyze how dance curricula contribute to improving students' scientific understanding and artistic creativity. Educators of the future must continually explore the fusion of technology and the arts to enhance students' overall competencies

^[6]. Therefore, this research underscores its practical significance—promoting educational innovation through interdisciplinary integration and cultivating versatile talents capable of meeting future societal demands.

2. Literature review

2.1. Definition and background of interdisciplinary integration

In recent years, interdisciplinary education has gained significant attention, particularly within the STEAM framework. This approach seeks to dissolve the traditional boundaries between disciplines and foster a more holistic learning experience. Scholars emphasize that interdisciplinary integration involves merging multiple perspectives to create new knowledge systems ^[7]. Dance, with its creative and physical components, is uniquely suited for interdisciplinary exploration, particularly in combining the arts with science.

Within STEAM education, dance serves as a powerful medium for visualizing scientific principles. It enables students to connect artistic expression with scientific understanding, helping them form a comprehensive knowledge base ^[8]. Studies show that traditional Chinese Dunhuang dance, for example, preserves cultural heritage while also integrating science and technology into educational settings, allowing students to explore the fusion of these domains ^[9].

2.2. Integration of dance and technology

The intersection of dance education and technology has emerged as a vital aspect of interdisciplinary integration. Researchers have explored the use of VR in dance education, illustrating how VR can provide students with deeper insights into scientific principles such as biomechanics and kinesiology ^[10]. Similarly, advancements in digital tools allow students to analyze their movements in real-time, offering a scientific understanding of their actions ^[11].

Dance can also serve as a platform for scientific discovery. The cognitive benefits of dance can be attributed to the interaction between movement and neural processes, highlighting the importance of spatial awareness and coordination in both arts and science ^[12].

2.3. Application of interdisciplinary integration in dance education

The application of interdisciplinary approaches in dance education spans various fields, including science, technology, and the arts. Research shows that art-based projects foster both artistic creativity and scientific thinking ^[13]. By integrating disciplines, students not only improve their dance techniques but also gain an understanding of principles like gravity and inertia.

With the increasing role of digital technology, dance continues to evolve in form and function. It now serves as a tool for conveying information through visual and auditory media, expanding the scope of education through technologies like virtual reality ^[14].

2.4. Cultural and scientific fusion in dance education

The fusion of culture and science in dance education offers students a broader perspective. Integrating modern technology with traditional dance forms enriches students' cultural understanding while promoting scientific innovation. Such interdisciplinary integration equips future educators with innovative technologies, transforming teaching methods and fostering educational reform.

2.5. Limitations of existing research and future directions

Despite the promise of interdisciplinary integration in dance education, some limitations persist. For example, the practical application of technology in classrooms and its long-term impact on students require further investigation. Challenges such as blurred disciplinary boundaries and insufficient resources may hinder the full realization of interdisciplinary integration ^[15].

Future research should explore how technologies like artificial intelligence and big data can be incorporated into dance curricula to enhance students' scientific

literacy and creative thinking.

3. Methodology

3.1. Research design

This study employs a mixed-methods approach, combining both qualitative and quantitative research methods to comprehensively explore the role of interdisciplinary integration in dance education and its impact on educational outcomes. The primary objective is to analyze the intersection of dance with arts and sciences in the context of STEAM education. It seeks to examine how these disciplines enhance each other within the educational process and contribute to students' creativity, critical thinking, and scientific literacy.

The qualitative component includes semi-structured interviews with dance education experts, science educators, and interdisciplinary practitioners to understand their perspectives on the role of interdisciplinary integration in education. The quantitative component, using survey data, captures feedback from a broad range of educators and students to assess the specific effects of integrating dance with other disciplines on learning outcomes.

3.2. Research subjects

The research subjects include 30 dance educators, 15 science educators, and 100 students who participated in interdisciplinary courses. These subjects are drawn from diverse educational backgrounds and teaching environments, ensuring a broad representation of the data. Their age, teaching experience, and academic disciplines vary, providing a wide array of perspectives for the study.

The educators were chosen from institutions where interdisciplinary integration is part of the curriculum, particularly where dance and science are used as teaching tools. The student group includes those involved in courses that merge dance with scientific disciplines.

Table 1. Demographics of the research subjects

Group	Number of participants	Education background
Dance educators	30	Universities, Art schools
Science educators	15	STEAM education programs
Students	100	High school, Universities

3.3. Data collection methods

Data collection involved both interviews and surveys.

- (1) Interviews: Semi-structured interviews focused on the practical applications, challenges, and educational outcomes of interdisciplinary integration in dance education. These interviews gathered in-depth insights from educators and experts on how dance is integrated with science and the arts.
- (2) Surveys: The study employed a Likert-scale survey to assess students' experiences and learning outcomes in interdisciplinary courses. The survey primarily covered students' experiences, knowledge acquisition, and perceived improvement in creativity ^[16].

3.4. Data analysis methods

Data analysis involved both qualitative and quantitative methods. The qualitative data were derived from semi-structured interviews with experts and educators and were analyzed using thematic analysis. NVivo software was employed to categorize and code the insights gained from the interviews to ensure the accuracy and consistency of the themes.

Quantitative data gathered from Likert-scale questionnaires were processed using Statistical Package for Social Sciences (SPSS) software. The focus was on students' satisfaction with interdisciplinary integration, the impact on their understanding of scientific concepts, and their creative and critical thinking skills ^[17]. The following table presents a summary of the data analysis methods.

Table 2. Data analysis methods

Feedback category	Mean	Standard deviation
Learning experience	4.2	0.6
Knowledge absorption	4.0	0.7
Innovation ability Enhancement	4.5	0.5

Descriptive statistics and correlation analyses were used to determine how the integration of dance and scientific knowledge affects students' learning outcomes. The study also highlights how interdisciplinary teaching promotes cognitive development, as evidenced in Cross and Ticini's research ^[11].

3.5. Ethical considerations

This study adhered to strict ethical standards, ensuring that all participants were fully informed and provided consent before participating. The privacy and personal information of the participants were rigorously protected, and no harm or unfair treatment occurred during the research.

4. Experimental design and results analysis

4.1. Experimental design

The purpose of this experiment is to explore how interdisciplinary integration in dance education affects students' creativity, critical thinking, and scientific literacy. Based on the principles of STEAM education, the experiment integrates dance as the core discipline with the application of science and technology, creating a learning environment that merges dance, arts, and science. The experiment includes two main components: an interdisciplinary curriculum intervention for the experimental group and traditional dance education for the control group.

4.1.1. Participants

A total of 100 university students participated in the study and were randomly assigned to either the experimental or control group. The experimental group consisted of 50 students who participated in the interdisciplinary curriculum, which integrated dance and science education with elements of technology, physics, and kinesiology. The control group, also comprising 50 students, only participated in traditional dance courses without any interdisciplinary integration.

Participants were aged between 16 and 22, and all were majoring in the arts. To prevent the influence of prior learning experiences on the results, students with previous interdisciplinary education were excluded from the study.

4.1.2. Curriculum design

The interdisciplinary curriculum was developed based on STEAM education theory, aiming to enhance students' creativity and critical thinking. The curriculum included the following modules.

- (1) Dance and kinesiology: Students learned the principles of human movement through dance,

focusing on the muscles, bones, and joints. This module helped students understand the scientific foundations of human movement through practical dance activities.

- (2) Dance and physics: This module explored physical phenomena in dance, such as gravity, force transfer, and momentum. Through experiments and practice, students understood the role of science in dance movements.
- (3) Dance and technological innovation: Students learned how to use VR and smart wearable devices, such as intelligent clothing, to record and analyze dance movements.

The control group followed a traditional dance curriculum, without any scientific integration. By comparing the performance of the experimental and control groups, the effects of interdisciplinary integration were analyzed.

4.2. Data collection

Data collection was conducted in three phases: pre-test, mid-test, and post-test. The following methods were used at each stage.

- (1) Creativity test: The Torrance Tests of Creative Thinking (TTCT) were used to assess students' creative performance, evaluating both graphic and verbal creativity.
- (2) Critical thinking test: The Watson-Glaser Critical Thinking Appraisal was used to assess students' logical reasoning, analytical skills, and evaluative abilities.

- (3) Scientific literacy test: A standardized scientific literacy test evaluates students' knowledge of basic sciences such as physics and kinesiology.

Data was collected through a combination of paper-based tests and online platforms to ensure the integrity and validity of the data.

4.3. Data analysis

SPSS software was used for data analysis, including descriptive statistics, correlation analysis, and independent sample *t*-tests to compare the differences between the experimental and control groups in creativity, critical thinking, and scientific literacy.

The data analysis was performed using SPSS software to compare the experimental group and the control group. Independent samples *t*-tests were applied to assess the differences between the two groups across three key variables: creativity, critical thinking, and scientific literacy. The results show statistically significant differences in all three areas. Specifically, the creativity scores (*t*-value = 2.96, *P*-value = 0.004), critical thinking scores (*t*-value = 2.45, *P*-value = 0.016), and scientific literacy scores (*t*-value = 3.12, *P*-value = 0.002) are significantly higher in the experimental group, confirming the positive impact of interdisciplinary integration in the dance curriculum.

4.4. Results analysis

The results indicated that the experimental group outperformed the control group in creativity, critical thinking, and scientific literacy.

Table 3. Group score comparison

Variable	Mean (experimental group)	Mean (control group)	<i>t</i> -value	<i>P</i> -value	Significance
Creativity score	87.5	75.2	2.96	0.004	Significant
Critical thinking score	80.1	71.2	2.45	0.016	Significant
Scientific literacy score	82.3	69.4	3.12	0.002	Significant

Table 4. Improvement percentage

Aspect	Improvement (%)	Significance (<i>P</i> -value)
Creativity enhancement	15.3%	0.01
Critical thinking boost	12.5%	0.05
Scientific literacy gain	18.7%	0.01

The results analysis reveals that the interdisciplinary approach in dance education led to significant improvements in students' creativity, critical thinking, and scientific literacy. Creativity showed the highest improvement (15.3%), with a P -value of 0.01, indicating strong statistical significance. Similarly, critical thinking increased by 12.5% (P -value = 0.05), and scientific literacy demonstrated an 18.7% increase (P -value = 0.01), suggesting that integrating scientific principles with dance education has a notable effect on students' performance across multiple dimensions. These findings support the hypothesis that interdisciplinary education fosters broader skill development in students.

4.5. Discussion of results

The findings of this study highlight the significant advantages of interdisciplinary integration in dance education. Students not only improved their artistic creativity but also strengthened their scientific literacy and critical thinking abilities.

4.6. Limitations of the study

Despite the positive results, several limitations exist. Firstly, the sample size was relatively small, and the participants did not represent a wide range of backgrounds. Secondly, the short duration of the experiment did not allow for the observation of the long-term effects of interdisciplinary integration on students' development. Future studies should expand the scope of research to include dance education practices in different cultural contexts to further verify the generalizability of these findings.

5. Conclusion and recommendations

5.1. Summary of findings

This study explored the interdisciplinary integration in dance education, particularly at the intersection of art and science, aiming to reveal how such teaching methods influence students' creativity, critical thinking, and scientific literacy. Throughout a three-month experiment, we found that the application of interdisciplinary integration in dance education had significant positive effects, especially within the framework of STEAM education. Students in the experimental group

demonstrated notable improvements in creativity, critical thinking, and scientific literacy, confirming that interdisciplinary teaching can foster the development of multiple competencies in students.

5.1.1. Development of creativity

The results revealed that students in the experimental group scored significantly higher in creativity assessments compared to the control group. Interdisciplinary teaching, by blending dance with scientific elements, created a richer and more diverse learning environment that stimulated students' creativity.

5.1.2. Enhancement of critical thinking

The enhancement of critical thinking was similarly significant. By integrating dance with scientific principles, students were required to analyze the relationships between movements and scientific theories, thereby improving their logical reasoning and analytical skills. The experimental group outperformed the control group in critical thinking assessments, indicating that interdisciplinary teaching effectively strengthens students' problem-solving and analytical abilities.

5.1.3. Improvement in scientific literacy

The study also demonstrated that interdisciplinary integration helps enhance students' scientific literacy. By combining physics and biology with dance education, students not only learned the technical aspects of dance movements but also understood the scientific principles behind them, such as biomechanics and physics. This integrated educational model enabled students to approach problems from multiple perspectives, further improving their understanding and application of scientific knowledge.

5.2. Contributions of the study

This research provides a new perspective on the interdisciplinary integration of dance education and science, highlighting the potential value of the STEAM educational model in dance. By introducing interdisciplinary course design, the study not only improved students' artistic expression but also strengthened their scientific knowledge and critical thinking skills. These findings offer important insights for

future reforms and innovations in dance education.

5.3. Practical recommendations

5.3.1. Recommendations for educational policy

Educational policymakers should consider incorporating more interdisciplinary courses in dance education, particularly those combining science and the arts. Promoting the STEAM educational model can help students develop comprehensively in both the arts and sciences, breaking down the traditional barriers between disciplines.

5.3.2. Teacher training

The interdisciplinary teaching abilities of educators are crucial. Schools and educational institutions should provide dance teachers with training in science and technology, enabling them to better integrate scientific principles into dance education and enhance students' interdisciplinary literacy.

5.3.3. Innovation in curriculum design

Schools should consider more opportunities for interdisciplinary integration when designing curricula. For example, incorporating biomechanics, physics, or computer technology into dance courses can create a more diverse learning experience, stimulating students' interest in learning and improving their creativity and scientific literacy.

5.4. Limitations and future directions

While this study produced valuable findings, some limitations remain. Firstly, the research sample was limited, focusing primarily on students from arts programs. Future research could expand to include students of different ages and backgrounds. Secondly, the short experimental period did not allow for observation of the long-term effects of interdisciplinary integration on student development. Future studies could extend the duration of experiments to further explore the long-term outcomes of interdisciplinary education.

Additionally, future research could investigate the application of more technological elements in dance education, such as the use of VR and wearable technology. The integration of these innovative technologies may further enhance students' learning outcomes, providing new opportunities and challenges for dance education.

6. Conclusion

The application of interdisciplinary integration in dance education has shown significant advantages. By combining dance with science and technology, not only are students' creativity and critical thinking enhanced, but their scientific literacy is also improved. This study provides important theoretical support and practical insights for future educational reforms, while also pointing the way forward for the future of dance education.

Disclosure statement

The authors declare no conflict of interest.

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Research on the Deep Integration of Chinese Excellent Traditional Culture and Ideological and Political Education in Colleges and Universities

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Abstract:

The excellent traditional Chinese culture, embodying the profound heritage accumulated by the Chinese nation throughout its long history, holds far-reaching significance that is self-evident. Integrating this culture into the ideological and political education of local colleges and universities can create a new approach to ideological and political education. Furthermore, it provides rich cultural resources that support the all-round development of students and offer significant research value. Therefore, this paper explores the mechanisms for innovation and the pathways for integrating traditional Chinese culture into ideological and political education in colleges and universities, serving as a reference for future studies.

Keywords:

Chinese excellent traditional culture
Colleges and universities
Ideological and political education
Mechanism innovation

Online publication: December 16, 2024

1. Introduction

The integration of excellent traditional Chinese culture into ideological and political education in colleges and universities can further enrich its educational forms, improve the timeliness of ideological and political education, enhance students' cultural confidence, and then generate national pride, and actively promote the inheritance and development of excellent traditional Chinese culture. Therefore, colleges and universities should pay full attention to the value of Chinese excellent

traditional culture in education, develop and utilize it as an important resource of ideological and political education, and contribute their strength to the cultivation of socialist builders who have an all-round development of morality, intelligence, physique, beauty, and labor.

2. Interpretation of the connotation of Chinese excellent traditional culture

In the whole system of excellent traditional culture, there

are many essences of the thought through recent time, which still exudes unique brilliance. Firstly, in these ideas, the concept of “the unity of man and nature” emphasizes the model of integration and symbiosis between human thought and natural laws, and advocates that human beings should respect and protect nature. Secondly, the idea of “peace is the most valuable” emphasizes that people should cooperate, secure their positions, and work together to build a stable social relationship, which fully reflects the Chinese nation’s yearning for peace. Thirdly, in the theory of “Yin and Yang and five elements,” the origin of all things is further discussed through the five basic elements of wood, water, earth, gold, and fire. Simultaneously, the relationship between them is also analyzed to show the profound and unique understanding of nature. The concept of “the mean of the mean,” which emphasizes that people should remain impartial, serves as an outstanding example of the wisdom inherent in Chinese culture ^[1].

These excellent traditional cultural thoughts have penetrated all levels of national development, deeply influence people’s lifestyles, behavior habits, thinking modes, and moral concepts, and have rich educational value. In the context of the new era, these thoughts are particularly significant for cultivating college students with noble moral character and a strong sense of social responsibility. However, integrating traditional Chinese culture and ideological and political education in colleges and universities is not simply about incorporating traditional words, art, or customs directly into teaching. Instead, it involves establishing a deep relationship between the national spirit embedded in traditional culture and the core concepts of ideological and political education. By inheriting the essence of traditional Chinese culture, students can develop cultural self-confidence and be guided to adopt a scientific worldview, along with a sound outlook on life and values.

3. The value of integrating excellent traditional culture into ideological and political education in colleges and universities

3.1. Guide students to establish cultural confidence

In the process of individual growth, the university stage

plays a pivotal role in shaping students’ worldviews, outlooks on life, and values. During this period, students often face ideological challenges from various sources, particularly the widespread influence of Western culture. This exposure can lead some students to feel confused about their value choices and even uncertain about how to proceed. In their pursuit of Western values, many students gradually neglect the study of traditional Chinese culture, with some even developing a negative attitude toward it ^[2].

In the face of ideological confusion among college students, it is crucial to deeply understand the historical significance of China’s excellent traditional culture and its unique value in shaping individuals’ spiritual worlds. This culture encompasses rich moral sentiments, value orientations, and profound patriotic feelings, all of which are vital resources for ideological and political education. Therefore, integrating these cultural elements into the daily educational activities of college students not only preserves and promotes traditional Chinese culture but also serves as an important means to guide students in establishing correct values and enhancing their cultural literacy. This integration helps students gain a deeper understanding of China’s cultural heritage, fostering a stronger sense of cultural identity ^[3,4].

3.2. Stimulate students’ patriotic feelings

On the fertile land of China, there exists a vibrant traditional culture that ultimately forms an all-encompassing treasure trove of patriotic education. Patriotism, as the essence of this culture, has continuously inspired generations of Chinese people with its unique appeal since ancient times. Throughout different historical stages, countless national heroes have emerged, and their glorious deeds have become powerful symbols of patriotism. In the context of the new era, these heroes continue to exemplify unwavering national integrity. The patriotic spirit embedded in China’s excellent traditional culture provides a strong foundation for the nation’s development. At its core lies loyalty to the country, which is fully expressed through deep affection for the people and a firm belief in the future of the nation.

In the ideological and political education of colleges and universities, it is essential to deeply explore the patriotic and people-loving ideals embedded in China’s excellent traditional culture and integrate them into the

educational process. This approach makes the cultivation of patriotism, as the core of the national spirit, more vivid and engaging. By sharing stories of heroic deeds, teachers can effectively inspire students' national consciousness and further strengthen their sense of national spirit ^[5].

3.3. Improve students' moral quality

China's excellent traditional culture plays a critical role in personal moral cultivation. Its profound wisdom offers rich resources for moral education, such as the "golden rule" of "Do not impose on others what you would not wish for yourself." This principle teaches empathy in daily interactions, emphasizing mutual respect and consideration for others' feelings. It guides individuals to avoid actions they would not want to experience themselves.

Similarly, ideas like "tranquility cultivates morality, and frugality cultivates virtue" stress the importance of living a modest and disciplined life. These teachings encourage harmony between mind and body through inner peace and external moderation, ultimately leading to moral elevation.

Additionally, the concept of self-discipline in "Do not ignore small evils, nor neglect small virtues" profoundly illustrates the moral standards individuals should uphold. It reminds people to avoid tolerating even minor wrongdoings and to value and practice even the smallest acts of goodness. This spirit of self-discipline forms a vital foundation for fostering a positive social atmosphere and improving the overall level of societal morality ^[6,7].

4. The mechanism innovation and path exploration of integrating Chinese traditional culture into ideological and political education in colleges and universities

4.1. Building a multi-dimensional integrated information-based ideological and political education mechanism

Currently, China's information education system has gradually developed and matured. Emerging education models, such as Small Private Online Courses (SPOC) and Massive Open Online Courses (MOOC), are

playing an increasingly significant role in the higher education system. Against this backdrop, the importance of integrating excellent traditional Chinese culture into the ideological and political education system becomes particularly evident. Leveraging information education platforms to promote deeper educational innovation practices should be a top priority.

Firstly, educators must make full use of the rich resources available on the Internet, incorporating them into the traditional culture and educational practices of ideological and political courses in colleges and universities. This approach will enhance the informational integration and coordination of ideological and political education.

At the same time, university administrators should rationally allocate information-based traditional cultural education resources in alignment with their institutions' specific educational needs. This ensures that the transformation process is both efficient and tailored to the unique goals of each university ^[8,9].

Secondly, colleges and universities can actively explore advanced teaching methods, such as distance learning, through modern online education platforms. By seamlessly integrating online traditional cultural learning with offline ideological and political education, they can create a comprehensive educational ecosystem. In this system, ideological and political education serves as the core link between online and offline components, continuously attracting new educational resources and fostering a virtuous cycle within the educational environment.

Thirdly, to continually inject vitality into traditional culture education in colleges and universities, educators must actively explore emerging educational resources on digital platforms. These resources should be consistently integrated into the ideological and political education process, ensuring the curriculum remains dynamic and relevant.

4.2. Carry out diversified practical activities

In today's society, promoting the in-depth development of traditional culture education and practical activities is key to stimulating college students' strong interest in learning about traditional culture. To achieve this, colleges and universities can organize a variety of engaging practical

activities that encourage students to take the initiative in learning about traditional culture. By creating an environment where students can actively participate and experience traditional culture firsthand, their understanding of it will be deepened. In this process, it is crucial to focus on enhancing students' cognitive ability regarding excellent traditional culture. This is an essential step in effectively integrating traditional culture into the ideological and political education system^[10].

Firstly, to achieve this goal, colleges and universities can actively organize traditional cultural practice activities with a competitive nature. When planning such activities, it is important to first understand students' interests in traditional culture. This ensures that the planned activities meet their needs and stimulate enthusiasm for participation. Secondly, based on a deep analysis of students' interests, the activity content can be divided into areas such as traditional culture and philosophy, traditional sports, and traditional literature. This allows each student to choose the most suitable project according to their personal interests. Thirdly, the role of teachers is crucial in the success of these activities. Teachers are responsible for imparting knowledge and guiding students throughout the learning process. To support this, teachers can offer personalized extracurricular guidance tailored to individual students. Through careful guidance, students will more easily integrate into the practical activity environment, fostering a deep and lasting connection to traditional culture. When students develop a genuine emotional connection to traditional culture through enjoyable and challenging activities, the integration of ideological and political education with traditional cultural education will yield a more significant educational impact^[11,12].

4.3. Improve the professionalism of traditional cultural education

Currently, the implementation of traditional cultural education in China's higher education system requires greater attention at the societal level. However, many university administrators still face challenges in educational practices, leading to several formalized problems. These include a lack of depth in educational content, a homogenization of curriculum choices, and an inability to fully showcase the unique charm and

rich connotation of traditional culture. As a result, the educational impact of traditional culture is weakened, and this creates obstacles to its effective integration with ideological and political education, preventing the two from forming a virtuous cycle of complementarity.

Firstly, to strengthen the effective integration of traditional cultural education with ideological and political education and improve overall educational quality, universities must engage in deeper exploration within their educational practices. When delivering traditional cultural content, special attention should be paid to diversity, while also emphasizing professionalism. Universities should aim to expand the scope of their efforts and broaden students' perspectives on traditional culture^[13].

Secondly, in implementing traditional cultural education, colleges and universities should focus on enhancing its practical effectiveness within ideological and political education. This does not mean simply integrating traditional cultural knowledge into ideological and political courses. Instead, innovative teaching methods should be employed to help students deeply understand the spiritual essence of traditional culture through personal experience and perception. Only by doing so can we establish a solid foundation for ideological and political education, enabling college students to uphold correct values when facing increasingly complex social realities.

Thirdly, with traditional cultural learning at the center, colleges and universities can continually explore innovative educational methods. For instance, experiential activities such as calligraphy, tea art, and Peking Opera allow students to personally engage with and appreciate the unique charm of traditional culture. Additionally, specialized research courses on traditional culture can guide students in exploring its historical origins, further deepening their understanding.

Finally, modern information technology, such as virtual reality and online courses, can provide students with more accessible and diverse traditional cultural learning resources. In promoting the integration of traditional cultural education with ideological and political education, colleges and universities should also prioritize cultivating students' critical thinking skills. This ensures that students can absorb the essence of traditional

culture while examining it rationally, giving it new vitality in the context of contemporary society. By fostering this ability, students will develop a stronger sense of cultural identity and gain a broader cultural perspective that can support their future career development^[14,15].

4.4. Do a good job in cultural education practice and innovation

Educational innovation is the driving force behind the continuous progress of education, making it a crucial task to effectively integrate excellent traditional culture into ideological and political education in colleges and universities. To achieve this goal, it is essential to align with the pace of educational innovation and continuously improve the content of education.

In this process, the careful selection of excellent traditional cultural content is particularly important. Colleges and universities should thoroughly explore the cultural essence that aligns with the needs of contemporary ideological and political education and integrate it into relevant courses. By refining the core elements of traditional culture, unnecessary teaching content can be simplified, ensuring efficient and impactful teaching outcomes.

When exploring innovative educational methods, ideological and political education should embrace an experimental spirit and boldly break free from the limitations of traditional frameworks. Educators must continuously practice, explore, and adopt diverse teaching

strategies, adjusting them flexibly based on course feedback. This adaptability allows traditional cultural elements to be seamlessly embedded into every aspect of ideological and political education.

Such integration promotes a complementary relationship between ideological and political education and traditional culture, leveraging the strengths of both. By doing so, colleges and universities can work towards the comprehensive development of students, ensuring that traditional culture enriches their educational experience while fostering a deeper connection to cultural heritage^[16].

5. Conclusion

Integrating excellent traditional Chinese culture into ideological and political education in colleges and universities is an innovative measure of far-reaching significance. This approach not only points to a new direction for enhancing the quality of ideological and political education but also injects fresh vitality into the improvement of the education system. In the future, colleges and universities should deepen this integration by continuously exploring the valuable resources inherent in traditional Chinese culture. By doing so, they can make significant contributions to cultivating a new generation of talent with noble moral character, aligned with the needs of the modern era.

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A Study on the Influence of Peer Evaluation on the Accuracy of English Writing Grammar

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Abstract:

In English writing, students' grammar proficiency is a critical factor influencing their writing quality. However, due to the complexity of grammar, many students frequently make grammatical errors during the writing process and struggle to identify them accurately on their own. Peer evaluation, as an innovative learning method, allows students to identify grammar errors through mutual assessment, thereby improving their grammatical accuracy. This article examines the concept of peer evaluation and explores how to implement it effectively through three key strategies: establishing clear standards, providing training and guidance, and ensuring structured feedback. The goal is to help students develop a stronger grasp of grammar rules in English writing, enhance their grammatical accuracy, and ultimately improve their overall writing skills.

Keywords:

Peer evaluation
English
Writing grammar
Accuracy

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1. Introduction

In English writing instruction, grammar accuracy is a key indicator of students' writing ability. However, traditional teacher-led evaluation methods often fall short of addressing every student's writing challenges comprehensively. In recent years, peer evaluation has emerged as a promising alternative and has garnered increasing attention in the education sector. By encouraging students to evaluate each other's work, teachers can boost student engagement and heighten their focus on grammar. Fully analyzing the characteristics of peer evaluation and exploring its practical value in enhancing grammar accuracy in English writing is crucial

for optimizing students' writing skills. This approach holds significant potential for improving the effectiveness of grammar instruction and fostering greater writing proficiency among students.

2. The concept of peer evaluation

Peer evaluation is an important assessment method that allows students to evaluate their assignments or performance among themselves, to promote learning and improve assessment abilities. In this method, students are not only recipients of learning but also active participants in the evaluation process. Through

peer evaluation, students can view their works from the perspective of their peers and receive diverse feedback. This feedback often contains different perspectives and suggestions, helping students identify their shortcomings in writing, especially grammar errors. Peer evaluation also encourages students to think deeply and analyze the works of others, and this process itself is a learning opportunity. By examining others' writing, students can gain a clearer understanding of grammar rules and writing techniques, and apply this knowledge in their writing ^[1].

3. The application value of peer evaluation in enhancing grammar accuracy in English writing

3.1. Improving feedback quality

Peer evaluation greatly improves the quality of feedback in English writing teaching and has become an effective learning tool. Through this approach, students can not only benefit from teacher evaluations but also receive diverse feedback from peers. This feedback comes from different perspectives, allowing students to examine their work in a broader context. Each student has a different writing style and way of thinking, so when evaluating their peers' works, they will pay attention to different details and potential grammar errors. For example, one student may notice an unreasonable sentence structure, while another student may find inappropriate vocabulary or tense errors. This diversity allows students to have a comprehensive understanding of various possible grammar issues during the peer evaluation process.

Peer evaluation is not limited to pointing out mistakes, it also encourages students to provide specific improvement suggestions. This interactive feedback approach promotes deep learning, as students are also re-examining and reflecting on their writing while considering how to help others. Research has shown that students can better understand grammar rules and improve their writing accuracy by receiving diverse feedback. Getting feedback from peers makes students realize that they are not learning in isolation, but growing up in a collaborative environment. This collaborative learning atmosphere can motivate students to learn from each other and make progress together. Peer evaluation also cultivates students' critical thinking skills. When

evaluating peers' works, students need to analyze and judge, rather than simply point out errors. This process has deepened their understanding of grammar, thereby enhancing their overall language proficiency. Through repeated practice, students gradually learn how to apply this feedback in writing, which not only improves their grammar accuracy but also enhances their writing confidence ^[2].

3.2. Enhancing learning motivation

Peer evaluation, as a participatory assessment method, significantly enhances students' learning motivation and makes them pay more attention to grammar details in the process of English writing. When students are given the responsibility of evaluating their peers' work, they feel a unique sense of participation. This sense of participation not only sparked their interest but also motivated them to actively engage in writing and evaluation. During the evaluation process, students must carefully read and analyze their peers' works, and this focused process deepens their understanding of language, especially in terms of grammar. They not only need to identify errors in their work but also need to think about how to provide constructive feedback to improve their peers' writing skills. This sense of responsibility further enhances students' attention to their writing. When students realize that their evaluations may affect their peers' learning, they naturally become stricter with their writing. This intrinsic motivation prompts students to actively consult grammar rules, use reference materials, and engage in self-revision when writing assignments. Research has shown that students who participate in evaluations typically exhibit higher writing quality because they unintentionally improve their writing skills while evaluating others.

Peer evaluation also cultivates students' ability for self-reflection. In the process of giving feedback to peers, students are forced to think about potential problems they may encounter in their writing. This self-reflection can help them identify their shortcomings and take corresponding improvement measures. Over time, this reflection not only improved their grammar accuracy but also enhanced their confidence. Students gradually realize that assessment is not just a one-way process, but a two-way learning experience where everyone progresses together through mutual assistance. More importantly, this

positive learning atmosphere helps to enhance students' classroom participation. With the increase in participation and responsibility, students are more willing to share their opinions, participate in discussions, and form a good learning community. In such an environment, students not only improve their writing skills but also develop skills in collaboration and communication, laying a solid foundation for future learning.

3.3. Cultivating critical thinking

Peer evaluation, as a highly interactive assessment method, encourages students to deeply analyze and evaluate the works of others, thereby effectively cultivating their critical thinking abilities. In this process, students not only need to identify the strengths and weaknesses of their peers' writing but also must conduct a comprehensive analysis of their work and propose specific suggestions and improvement measures. The cultivation of this analytical ability enables students to think from multiple perspectives and understand different writing styles and expressions when facing the works of others. This process not only enhances their understanding of others' work but also prompts them to be more cautious in their writing, especially in the use of grammar.

Through critical thinking training, students gradually develop a systematic thinking framework when evaluating peer works. They will pay attention to the accuracy of grammar structure, the fluency of sentences, and the coherence of overall logic. This kind of training not only improves their language ability but also enhances their awareness of grammar rules, enabling them to apply these rules more consciously when writing. Additionally, the cultivation of critical thinking also enables students to analyze problems more effectively and find solutions when encountering writing difficulties, thereby enhancing their confidence and writing ability. The process of participating in peer evaluations is itself an opportunity for self-reflection. When students give feedback, they are not only evaluating others' work but also subtly examining their writing. This kind of self-reflection can help them identify their grammar blind spots and writing habits, to make more targeted improvements in their future writing.

Meanwhile, students often gain new inspiration

and ideas through discussion and feedback exchange, which further enhances their grammar awareness and writing skills through interactive learning. Ultimately, the cultivation of critical thinking is not limited to the improvement of writing skills but also lays the foundation for students' comprehensive development. In a collaborative and supportive learning environment, students not only learn how to provide and receive feedback but also learn how to appreciate and respect different perspectives and expressions. The cultivation of this ability will greatly benefit them in their future learning and life, enabling them to express their thoughts more confidently and engage in effective communication and cooperation ^[3].

4. Application strategies of peer evaluation to enhance grammar accuracy in English writing

4.1. Develop clear evaluation criteria

Developing clear evaluation criteria is a crucial part of peer evaluation, as it can effectively help students focus on grammar accuracy and writing quality when reviewing others' work. Clear evaluation criteria not only provide students with an evaluation framework but also clarify the specific grammar points they need to pay attention to during the peer evaluation process. When students know which aspects they need to focus on, they will be more targeted when reading and analyzing their peers' work, thereby enhancing the effectiveness of the evaluation.

For example, specific grammar points can be listed, such as the correct use of tense, subject-verb agreement, and the rationality of sentence structure. Such refined standards enable students to provide feedback more accurately and avoid vague subjective evaluations. Setting clear standards can also enhance students' confidence and sense of responsibility. When students understand the specific content they should focus on during the evaluation process, they will feel more at ease and know that they can provide valuable feedback.

This confidence is enhanced in the process of evaluating others' work and it also prompts them to more consciously follow these standards in their writing. This mutually reinforcing relationship makes peer evaluation not only a one-way evaluation process but also an

opportunity for comprehensive improvement. Clear evaluation criteria can also help teachers better monitor and guide students' learning progress. Teachers can collect feedback based on these standards to understand common issues in students' grammar and writing abilities and provide targeted supplements and reinforcement in classroom teaching. This bidirectional feedback mechanism helps teachers adjust teaching strategies promptly and improve the effectiveness of teaching ^[4].

4.2. Enhancing student training and guidance

Training and guidance play a crucial role in peer evaluation, effectively teaching students how to provide constructive feedback and ensuring they can identify and correct grammar errors. Firstly, teachers should receive systematic training before peer evaluation activities, introducing students to the purpose and significance of peer evaluation. By demonstrating how to conduct effective evaluations, teachers can help students understand that feedback is not just about pointing out mistakes, but also about providing specific improvement suggestions. Such demonstrations can set an example for students, giving them more confidence and direction in practical operations. Teachers can provide specific assessment frameworks and feedback templates to help students structure their assessment process. Through these tools, students can systematically check multiple aspects such as grammar, sentence structure, and logical coherence when evaluating others' work. This framework not only makes student assessments more systematic but also makes their feedback more specific and effective.

For example, students can use the format of "strengths, weaknesses, suggestions" by first pointing out the highlights of the work, then identifying areas that need improvement, and finally providing specific improvement suggestions. This approach can cultivate their thinking ability and make them pay more attention to details when evaluating others. Teachers can also use group discussions and peer exercises to help students learn how to provide feedback in practice. In the group, students can communicate with each other and share their evaluation experiences and insights, which not only enhances the interactivity of learning but also improves their cooperation ability. In such an environment, students can gain diverse perspectives from peers, further

deepening their understanding of feedback content and methods.

Continuous guidance and feedback are equally important. Teachers should regularly check the quality of students' peer evaluations and provide timely feedback and suggestions to help them continuously improve their assessment abilities. This process enables students to gradually master how to effectively identify and correct grammar errors through repeated practice, while also improving their self-reflection ability. Through this approach, students not only grow through peer evaluation but also consciously apply the knowledge they have learned in their daily writing, improving their grammar accuracy.

4.3. Encouraging students to use structured feedback

Structured feedback plays an important role in peer evaluation, encouraging students to use feedback forms to systematically record grammar issues and improvement suggestions, thereby enhancing the effectiveness and targeting of feedback ^[5]. By providing structured feedback templates, students can systematically list various grammar errors such as tense errors, subject-verb agreement issues, and inappropriate sentence structures when evaluating peer works. This formal recording method enables students to focus their attention on specific grammar points, avoiding arbitrariness and ambiguity, and improving the quality and depth of evaluation.

Using structured feedback forms can also help students express their views clearly. When feedback has a clear framework, students can better organize their thinking and provide feedback logically and systematically. This not only makes the feedback content clearer and easier to understand but also allows the reviewer to intuitively understand the problems in their work, making it easier to make targeted modifications and improvements. During the process of filling out feedback forms, students will also enhance their ability to reflect. They need to carefully consider the strengths and weaknesses of their peers' work and provide constructive suggestions based on this. This process not only enhances their analytical skills but also cultivates their critical thinking.

Structured feedback also helps teachers monitor the evaluation process of students. Teachers can collect feedback forms to timely understand common problems encountered by students in writing, and then adjust teaching strategies to meet students' learning needs. This feedback mechanism creates a good interaction between teachers and students, enhancing the effectiveness of classroom teaching. Similarly, structured feedback can also enhance students' sense of responsibility. When students realize that their feedback is targeted and can help their peers improve their work, they will take the evaluation process more seriously. This sense of responsibility promotes positive interaction among students and creates a learning atmosphere of mutual

support and common progress.

5. Conclusion

In summary, peer evaluation has a significant positive impact on grammar accuracy in English writing. By clarifying evaluation criteria, providing training and guidance, and adopting structured feedback, teachers can effectively guide students to participate in this evaluation process, thereby improving their writing abilities. Future research can further explore the applicability of peer evaluation in different learning environments and cultural backgrounds, in order to better achieve the goals of grammar teaching.

Disclosure statement

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Strategies for the Deep Integration of Psychological Health Education and Ideological and Political Education for College Students

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Abstract:

College students are the future talents of society and play an important role in social development. However, in the new era, college students face more complex environments and tempting factors in their lives, which affect their mental health status and impact their worldview, outlook on life, and values. This can also affect their attitudes and life choices. Therefore, universities should prioritize integrating psychological health with ideological and political education, innovate teaching methods, enhance students' psychological and ideological growth, and promote their overall well-being and development. This article summarizes the importance of integrating psychological health education with ideological and political education for college students, analyzes the problems in its deep integration, and proposes targeted optimization strategies, hoping to provide an effective reference for college students.

Keywords:

Psychological health
Ideological and political education
Deep integration

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1. The importance of deep integration of psychological health, ideological, and political education for college students

1.1. Definition of psychological health, ideological, and political education

1.1.1. Definition of psychological health

Psychological health education involves using scientific methods to understand students' psychological development, enhance their psychological qualities,

address issues, and promote overall mental well-being. It aims to cultivate students' awareness of mental health. Teachers provide effective psychological counseling and guidance, organize diverse psychological health education activities, address students' psychological health issues, enhance their psychological qualities, and help them cope with life's challenges and pressures.

1.1.2. Definition of ideological and political education

Ideological and political education refers to the educational process guided by the Marxist theory, through systematic theoretical education and ideological guidance, to help students establish correct worldviews, outlooks on life, and values, and cultivate students' patriotism and sense of social responsibility. The goal of ideological and political education is to improve students' political literacy, enhance their sense of social responsibility and mission, and cultivate their good moral qualities and behavioral habits. Through systematic theoretical education and ideological guidance, ideological and political education can help students establish correct worldviews, outlooks on life, and values, cultivate patriotism and social responsibility, and actively contribute to social progress and national development.

1.2. The importance of integrating psychological health education with ideological and political education

1.2.1. Promote the comprehensive development of students

The integration of psychological health education with ideological and political education can focus on students' psychological health, attach importance to the cultivation of ideological and political qualities, make up for the shortcomings of a single education model, and promote students' comprehensive development.

1.2.2. Improve the effectiveness of teacher education

Integrating the content of psychological health education into ideological and political courses, combined with relevant knowledge of psychology can help students better understand and cope with psychological confusion and challenges in daily life, and enhance the effectiveness of ideological and political education.

1.2.3. Enhance social responsibility

Incorporating elements of ideological and political education into psychological health courses can guide students to think and discuss current social issues, enhance their political awareness and sense of social responsibility, and contribute to the future development of the country.

1.2.4. Cultivate a sound personality

The integration of psychological health education and ideological and political education helps cultivate students' sound personalities, enabling them to have healthy physical and mental development and good moral qualities and contribute to the harmony and stability of society.

2. Problems in the deep integration of psychological health education with ideological and political education for college students

2.1. Gap between educational teaching content and students' practical life

There is a problem of inconsistency between teaching content and students' practical life in current ideological and political education in universities. Teachers' educational content is far from students' actual lives, which leads to students' difficulty in understanding and mastering abstract knowledge. From the perspective of teaching content, traditional ideological and political education in universities mainly combines political theory literacy, behavioral norms, and many more which is not in line with the requirements of the current times and is far from the actual life of college students. From the perspective of educational philosophy, university teaching focuses on the transmission of political theoretical knowledge, emphasizes the policy guidelines of the Communist Party of China and the government, and instills Marxist principles.

It lacks integration with social hot issues and topics of concern to students, neglects students' specific life practices, and is not conducive to students' scientific positioning of their social roles. The problem of teaching content in universities being far away from students' practical lives is mainly due to the outdated teaching content. Firstly, most ideological and political teachers in universities simply copy textbook knowledge, resulting in weak interest in course teaching and outdated teaching content, which makes it difficult to stimulate students' interest and enthusiasm for learning. Secondly, the single teaching method of teachers is also an important factor affecting their teaching. In the process of integrating psychological health education with ideological and

political education in universities, teachers mostly use traditional indoctrination teaching methods. As the main body of the classroom, teachers transmit knowledge to students in a one-way manner, resulting in a lack of effective interaction between teachers and students. Teachers cannot fully understand students' psychological development and ideological status, and cannot meet the personalized psychological needs of college students, which is not conducive to improving teaching effectiveness.

2.2. Poor effectiveness of psychological health education

With the continuous improvement of intelligence levels, the pace of life of college students is accelerating, the material living standards are greatly improved, and entertainment activities are increasing. College students can obtain various information in the online environment and be influenced by different ideas. Some students may have problems such as improper learning attitudes and impetuous mentality, which affects the effectiveness of psychological health education.

Simultaneously, universities lack specificity in the teaching process and cannot provide personalized counseling based on students' actual situations and psychological needs, resulting in poor educational outcomes. Unified psychological counseling cannot accurately solve students' differentiated psychological problems, which affects the establishment of harmonious relationships between teachers and students, leads to a lack of willingness for students to seek help from teachers when encountering psychological problems, and affects students' personal development.

Additionally, the insufficient teaching staff in universities is also an important factor affecting the integration of psychological health education with ideological and political education. The shortage of teaching staff for psychological health education in universities and the difficulty in meeting the actual needs in terms of the quantity and quality of professional teachers have led to a scarcity of resources for ideological and political education and psychological health education courses, low frequency of classes, and a large gap in the number of students and teachers. Teachers find it difficult to observe and understand the psychological

state and ideological development of each student, which is not conducive to solving students' psychological problems and affects the effectiveness of psychological health education ^[1].

2.3. The integration mechanism is not perfect

In traditional university teaching, psychological health education with ideological and political education has always been carried out in two different forms of courses, lacking a sound curriculum integration mechanism and experience. Firstly, there is a lack of collaborative mechanisms for courses, and the leaders of relevant departments in higher education lack the establishment of collaborative mechanisms during the integration process. There is no clear division of functions and responsibilities among various departments, and there is a lack of process organization for course integration.

Secondly, there is a problem of insufficient resource integration in the process of curriculum integration in universities. The education management departments of universities have weak resource integration and have not formulated a sound resource integration mechanism, resulting in difficulties in the smooth flow of information and resources between different departments, which cannot provide comprehensive resource support for teachers to carry out courses and affect the effectiveness of integrated education ^[2].

2.4. Lack of a comprehensive evaluation system

In traditional psychological health education with ideological and political education in universities, teachers often neglect the evaluation process of students, resulting in teachers being unable to grasp the psychological and ideological development of students, and unable to adjust teaching plans according to their actual situation and needs. In the existing evaluation system for the psychological health with ideological and political education of college students, the evaluation of students is often completed by teachers, and there are limitations to the evaluation from a single perspective of teachers, which cannot comprehensively understand and grasp the learning situation of students. In many higher education processes, due to the unequal status between teachers and students, a good communication relationship has not been established between the two

parties. Students' performance in front of teachers differs from their performance in daily life, which also affects the comprehensiveness and authenticity of teachers' evaluations of students.

3. Optimization strategies for the deep integration of psychological health education with ideological and political education for college students

3.1. Strengthen the connection between teaching content and practical life

To enhance the effectiveness of ideological and political education, universities should strengthen the connection between teaching content and students' practical lives, making ideological and political education more closely related to student's actual needs and life experiences. Firstly, universities need to update their teaching content, timely understand the changes in the development of the times, analyze the requirements of the times for talents, and continuously update the teaching content of ideological and political education. Universities should build a content library of teaching resources, integrate current social issues and topics of concern to students into ideological and political education and psychological health education classrooms, stimulate students' interest and enthusiasm for learning, enhance the applicability of students' learning content, and provide effective guidance for students to solve problems encountered in life and study.

Secondly, teachers should innovate their teaching methods, and universities should actively carry out training by inviting experts in the field of education, enriching teachers' teaching methods, and improving their teaching level. Concurrently, teachers should also utilize online and offline educational resources to continuously improve their teaching level, adopt diverse teaching methods in the teaching process, and enhance students' interest in learning. Teachers can use case analysis teaching methods in the classroom, introduce social hot topics, and combine psychological and ideological education content for classroom teaching, guiding students to express their opinions and viewpoints on case events, enhancing interaction between teachers and students, and improving the fun and effectiveness of teaching.

3.2. Enhancing the pertinence and effectiveness of psychological health education

Enhancing the understanding of students is the foundation for improving the pertinence and effectiveness of psychological health education with ideological and political education. Therefore, teachers should have a deep understanding of students' actual situations and psychological needs during the teaching process, conduct comprehensive and scientific evaluations of their development, and develop personalized counseling plans for students. Firstly, teachers should strengthen communication with students and enhance their understanding of them. Good communication can improve the relationship between teachers and students, help students establish trust in teachers, and increase their willingness to share with teachers.

Secondly, improving the teaching abilities of teachers in psychological health with ideological and political education is also an important way to enhance teaching effectiveness. Universities should attach importance to the training of teachers in psychological health education with ideological and political education, regularly invite local and international experts in the field of education to give lectures to teachers, update the educational concepts of university teachers, and improve their abilities in psychological health with ideological and political education^[3].

Simultaneously, schools should establish internal teacher exchange meetings and regularly organize teachers to share and exchange teaching experiences within the school. Through the case sharing of teachers in the teaching process, it is beneficial for teachers to enhance their understanding of students and carry out psychological health education with ideological and political education based on their characteristics.

Moreover, universities should actively introduce external talents and enrich the construction of their teaching staff. Universities can hire psychological experts and private education experts with rich practical experience and profound theoretical foundations as part-time teachers. Through the cutting-edge academic perspectives and rich practical cases of these teachers, students' horizons can be expanded, and guidance can be provided for optimizing teaching plans for full-time teachers.

Finally, with the continuous development of the Internet, college students have access to global information and are affected by various international ideas. To improve the quality of psychological health education with ideological and political education, and ensure that the education meets the needs of college students, colleges and universities should introduce international resources and actively carry out international exchanges. Through deep cooperation with internationally renowned universities and research institutions, universities can access advanced concepts and models of psychological health education with ideological and political education, draw on international advanced theories and practices, and combine them with the actual situation of the university to build a psychological health education with ideological and political education system together with Chinese characteristics.

3.3. Improve the mechanism of curriculum integration

To improve the teaching effectiveness of psychological health education with ideological and political education, universities should improve the integration mechanism, construct a sound integration process, clarify the responsibilities and rights of each department, ensure that all departments can cooperate in the integration process, and promote deep integration.

Firstly, universities should improve the mechanism for the comprehensive integration of psychological health education with ideological and political education, and communicate this mechanism to various departments to ensure that they can clearly define their roles and responsibilities in the integration process, and ensure the smoothness of the integration mechanism. Universities should establish a dedicated working group responsible for promoting the integration of psychological health education with ideological and political education and regularly organize meetings to strengthen communication and collaboration between departments, clarify the focus of work at each stage, encourage departments to share and exchange ideas on the problems encountered during the integration process, jointly optimize the process, and improve integration efficiency.

Simultaneously, universities should organize the establishment of an educational resource library, integrate

psychological health, ideological, and political education resources, and provide resource support for teachers to integrate them through the construction of a unified resource management platform, improve the pertinence and practicality of integrated education, and provide students with rich learning resources.

Secondly, teachers need to innovate educational integration models and constantly explore diverse educational paths. Teachers can introduce psychological health education content into ideological and political education courses, helping students understand their psychological development through psychological testing. Teachers can also integrate elements of ideological and political education into the process of psychological health education, introduce social hot issues and cases in the classroom, and encourage students to share their views and understand their ideological development^[4].

3.4. Improve the teaching evaluation system

A comprehensive evaluation system can reflect students' development, which is beneficial for teachers to design teaching and improve teaching effectiveness. Firstly, teachers need to improve the teaching evaluation system, evaluate students' psychological and ideological development from multiple aspects and perspectives, observe their state in classroom learning, and pay attention to their psychological growth. Teachers can also organize peer and self-evaluation among students, improve the student evaluation system, and enhance their understanding of students. Through various evaluations, teachers can establish personalized psychological health records for students, record their psychological health status and mental state, update the content of the records promptly based on changes in students' psychological state and ideological growth, and through in-depth analysis of the content of the records, discover possible psychological and ideological problems of students on time, develop personalized psychological health counseling plans for students, help students establish good mental and ideological states, and promote their comprehensive development.

Secondly, teachers should introduce diverse evaluation methods and enrich their perspectives on student evaluation. Teachers can encourage students to engage in peer and self-evaluation. Student peer

evaluation can enhance students' sense of participation and responsibility. In the process of evaluating others, students will also reflect on their behavior, recognize their strengths and weaknesses, stimulate their learning enthusiasm, learn from others' strengths and weaknesses, and promote their self-improvement. Through students' self-evaluation, they can reflect on their performance, stimulate their awareness of self-improvement, and think about how to improve and enhance themselves. Encouraging students to engage in peer and self-evaluation can improve the accuracy and comprehensiveness of student evaluations, enhance teachers' comprehensive understanding of students, strengthen communication between teachers and students, and build a harmonious teacher-student relationship.

4. Summary

The deep integration of psychological health education with ideological and political education for college students is an important issue in the new era of higher education. It is an important way to meet the requirements of modern college students' psychological health and ideological development and can guide them to establish a correct worldview, values, and outlook on life. However, there are still many problems in the deep integration of mental health education and ideological and political education for college students, which affect the effectiveness of mental health education and ideological and political education. Universities need to improve the integration mechanism of mental health education and ideological and political education, strengthen teacher training, enhance the efficiency of the integration of mental health education and ideological and political education, and promote the comprehensive development of students.

Disclosure statement

The authors declare no conflict of interest.

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Research on Collaborative Education between Ideological and Political Education with Student Management

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Abstract:

The management of college students is a crucial aspect of ideological and political education in colleges and universities. These two areas share common educational goals, maintain consistency in working concepts, and complement each other in their academic functions. Strengthening the collaborative relationship between ideological and political education and student management can create a synergy between the two, integrate educational and management resources, enable resource redistribution, and reduce college education and management costs. This paper explores practical strategies for integrating ideological and political education with student management, focusing on constructing a comprehensive management system, building practical platforms, and enhancing linkage functions.

Keywords:

Ideological and political education
Student management
Collaborative education

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1. Introduction

General Secretary of China pointed out at the National Conference on Ideological and Political Work in Colleges and Universities, “we should adhere to the moral education as the central link, ideological and political work throughout the whole process of education and teaching, to realize the whole process and all-round education”^[1]. “Cultivating people by virtue” is the basic task of developing China’s education, and also an important guarantee for realizing socialist modernization.

Ideological and political education and student management in colleges and universities are essential

components of college education. These two areas support and influence each other, working together to promote mutual development. This collaboration not only enhances the effectiveness of ideological and political education and student management but also facilitates the coordinated development of educational subjects, objectives, content, and methods. Ultimately, this integration helps achieve the goal of talent cultivation in colleges and universities^[2].

In recent years, in the practice of ideological and political education and student management, some achievements have been made in the aspects of talent

training target to the construction of collaborative education mechanisms but there are still some problems in its execution. Therefore, based on the internal connection and necessity of collaborative education, combined with the actual situation of ideological and political education and student management in colleges and universities, this paper puts forward the corresponding countermeasures of collaborative education, aiming to further implement the role of “cultivating moral education” of ideological and political education in colleges and universities.

2. The internal connection between ideological and political education in colleges and universities with student management and collaborative education

2.1. Synchronization of educational goals

The cooperation of ideological and political education and student management in colleges and universities can effectively implement the goal of “cultivating people by virtue” into students’ daily lives and studies. The content of ideological and political education can improve students’ cognition and understanding of the theoretical system of socialism with Chinese characteristics, enhance students’ ideological and moral quality and political consciousness, and promote ideological and political education in colleges and universities to achieve ideal results.

Simultaneously, student management involves the management of students’ studies, lives, interpersonal communications, and other aspects, which can also provide educational resources for ideological and political education to a certain extent. Based on this, colleges and universities should synchronize student management with ideological and political education to comprehensively improve the quality of college students and promote the healthy and sustainable development of college education.

2.2. Maintain unity in working philosophy

Student management works with ideological and political education to maintain unity, which is mainly reflected in the “people-oriented” concept. This concept is an important thought put forward after society reaches a certain stage. It emphasizes the importance of people and

regards people as one of the most important resources in social development. In the management of college students, we should adhere to the concept of people-oriented and integrate ideological and political education into it.

School ideological and political work is fundamentally about “people,” focusing on a comprehensive understanding and respect for students’ behavior, ideology, and moral character. It involves scientifically integrating various educational resources and using diverse teaching methods to update educational concepts promptly. Guided by the principle of promoting students’ holistic development, it aligns with their practical developmental needs to ensure the overall quality of ideological and political education in colleges and universities.

2.3. Complementary nature in educational functions

The ideological and political education with the student management in colleges and universities are highly complementary and there is a close relationship between them. The main task of student management is to restrain students’ social behavior and provide targeted services for their development and growth. In this process, it is very important to strengthen students’ ideological systems and political acuity.

They need to learn how to face difficulties and challenges, and then develop indomitable will and noble moral sentiment. There is a certain intersection between ideological and political education with student management, including the moral rule of law, ideals, and beliefs, moral norms, patriotism, and other levels of education^[3]. The school should also carry out various management activities on this basis so that students can change their thoughts for the better and improve their abilities.

3. The necessity of coordinating ideological and political education with student management

3.1. Realize the linkage between ideological and political education with student management

In the new era, ideological and political education

and student management in colleges and universities are closely interconnected, each playing a vital role. Integrating educational concepts with student management practices enhances the efficiency of ideological and political education while allowing educators to better understand students' needs and provide targeted guidance. This integration improves both the effectiveness and the methods of education, offering college students comprehensive support in their studies and personal development.

3.2. Integrate educational and management resources and realize redistribution

The ideological and political education of colleges and universities is closely linked to student management. Ideological and political education primarily involves managing students and utilizing corresponding management resources to achieve educational goals. The allocation and redistribution of these resources play a crucial role in this process. In the collaborative education model that integrates ideological and political education with student management, resources can be redistributed based on student's learning needs at different stages. This ensures the rational use of educational and management resources while minimizing resource waste through effective sharing. By integrating and redistributing these resources, colleges and universities can significantly enhance the quality and effectiveness of their ideological and political education.

3.3. Reducing costs in college education and management

In traditional college education and management, teachers and students often operate independently, with minimal communication and interaction. This lack of engagement leads to misunderstandings and mistrust, which hinder the development of effective education and management practices. Additionally, head teachers and counselors, who are responsible for student management, often lack the time and energy to focus on students' thoughts and learning progress. As a result, timely communication and mutual understanding between teachers and students are limited, making it challenging for educators to conduct in-depth research into student education and management. Collaborative education addresses these shortcomings by

fostering greater understanding and interaction between teachers and students. This approach significantly enhances communication, builds trust, and reduces the overall costs of college education and management by improving efficiency and effectiveness.

4. The implementation path of ideological and political education with student management

4.1. Building a management system and integrating ideological and political education with student management

Ideological and political education is not only about imparting knowledge and values but also focuses on guiding students to establish the correct world outlook, outlook on life, and values through various educational activities, while student management focuses on ensuring the realization of these goals so that every student can grow up in a safe and harmonious environment. The two promote each other and jointly promote the healthy development of higher education. Therefore, in the practical work, the advantages of the two should be combined and organically integrated to realize the mutual promotion between the two.

Firstly, in student management, the primary goal should be the holistic development of students in higher education institutions. Schools must continuously enhance their ability to cultivate talent by leveraging their management functions and strengths to establish a scientific and efficient student management system. Such a system not only helps students better adapt to the challenges of future society but also fosters their growth and development in their professional fields. In talent training, colleges and universities should implement comprehensive service and tracking mechanisms to stay informed about students' thoughts and development. This includes understanding their practical challenges in both learning and life and maintaining effective communication with them. Whether addressing ideological concerns or real-world problems, students should receive timely assistance and guidance from the school.

Secondly, the functions of various departments in colleges and universities should be clearly defined. This means that the existing teaching resources should

be carefully allocated to maximize their usage. The integration of various elements of ideological and political education into students' daily study and life is not only reflected in the curriculum setting but also fully implemented in extracurricular activities, community organizations, and students' autonomy. In this way, it expands the breadth and depth of students' education, to provide them with a more comprehensive educational environment. Simultaneously, it is also crucial to ensure the effective coordination between ideological and political education and student management. Only when the two complement each other and jointly promote the all-round development of students, can the educational goals of colleges and universities be truly realized.

Finally, in the process of ideological and political education, it is essential to deeply understand students' living environments and social backgrounds. This approach not only helps in developing a more appropriate and effective education model but also ensures the relevance and effectiveness of educational efforts, thereby promoting students' comprehensive and healthy growth. Similarly, in student management, considering the social context of students is crucial for better understanding their needs and challenges. This enables the provision of more personalized and empathetic guidance and support. For example, integrating topics such as orientation guidance, community building, online behavior, and career development planning into the framework of ideological and political education can enrich its content. By offering targeted services through specialized training, individual counseling, and social practice, schools can inject new vitality into student management efforts and enhance their overall effectiveness.

4.2. Build a practical platform to enrich the means of ideological and political education in colleges and universities

Colleges and universities have a close connection and interaction between student management and ideological and political education. We should realize that these two aspects are inseparable, they interweave and promote each other, and constitute an important part of colleges and universities. Therefore, in the actual work, we should take student management as the foundation, ideological and political education as a bridge and expansion, through

systematic management measures to build a practice platform, guide and standardize students' behavior, enhance students' ideological consciousness, realize the organic combination and synchronous development of the two.

Firstly, the school should attach importance to improving the teachers' information service consciousness, setting up the network environment of new education and teaching concepts, new ideas, and new ways of thinking to deal with the traditional teaching problem, play its advantages in the new media environment, to meet the ideological and political universities in the new period and the new demand of the harmonious development of student work.

Secondly, with the help of new information and communication technologies, universities should build various management and educational platforms that leverage the interactive capabilities of new media. This approach can break through traditional teaching methods, overcome the fixed roles of educators and students, and enable more direct, one-on-one communication between student administrators and students.

Finally, in the context of new media, colleges and universities should adjust their operations to timely update their educational logic and concepts. They should continuously guide and standardize students' behavior in the digital environment, ensuring that ideological and political education, as well as student management, involve more extensive and in-depth communication.

4.3. Give full play to the linkage function and build an operational guarantee mechanism for coordinated development

The operation of the collaborative education model between ideological and political education and student management is a dynamic process. In this process, different staff members must collaborate effectively to achieve a synergistic effect through continuous adaptation. This requires that ideological and political educators, in the management process, prioritize students, respect their central role, and continuously adjust management methods and working approaches. Establishing a robust collaborative education and management mechanism is essential for success.

Firstly, we should establish an operational

mechanism that ensures effectiveness and creates a corresponding system for its implementation. Colleges and universities need to approach this from a developmental perspective, accelerating the reform of the cooperative development system and designing it scientifically and systematically. The specific implementation of this operational mechanism must be carried out to ensure the smooth progress of coordinated ideological and political education and student management. Both systems should align with their educational goals and cover all students in the institution. With students at the center, two mutually reinforcing organizational structures should be built, with each defining its educational responsibilities according to the specific roles and tasks involved.

Secondly, to adapt to the changing needs of the times, we must thoroughly innovate and upgrade the existing working model. By conducting an in-depth analysis of the unique lifestyles, thought processes, and various social phenomena faced by contemporary college students, educators can identify the root causes of issues through careful observation and deep understanding. This enables more precise implementation of ideological and political education. This process requires educators not only to have keen insight but also to maintain close communication with students to understand and address their real needs. This approach will enhance the relevance and effectiveness of the education. Only in this way can our ideological and political education truly be targeted, helping college students develop correct values and promoting their comprehensive and healthy development.

Finally, all departments of colleges and universities should work closely together. By building an efficient and seamless platform for interaction and cooperation,

the information and data across multiple departments can be integrated, allowing key elements of education to be effectively connected. This will ensure the smooth implementation of the “three comprehensive education” model. By focusing on three levels—system norms, operational structure, and feedback and evaluation—the school’s student management system can ensure that both ideological and political education and student management achieve practical results, ultimately promoting the all-round development of students.

5. Conclusion

The construction of a cooperative education mechanism between ideological and political education and student management in colleges and universities is crucial for achieving the goal of talent training. It is also an internal requirement for both ideological and political education and student management, as well as an essential step in fulfilling the fundamental task of moral education. However, several issues remain in the current mechanism, such as unclear coordination between the two, vague coordination goals, and an imperfect coordination model. Therefore, in the current context, it is essential to adopt a problem-oriented approach. Based on clearly defined collaborative education goals, efforts should focus on further improving the construction of the collaborative education mechanism, innovating collaborative education methods, and optimizing the mechanisms that support collaboration. This will strengthen the synergy between the two areas and promote the sustainable development of ideological and political education and student management in colleges and universities.

Disclosure statement

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Exploring the Cognitive Obstacles in High School Students' Learning of Physics and Mechanics

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Abstract:

Physical mechanics, as an important part of high school physics, requires high demands on students' logical thinking and analytical abilities. However, in practical learning, high school students often encounter many difficulties in the mechanics section. There are various thinking barriers behind this, which hinder their in-depth understanding and effective application of mechanics knowledge. This article explores the thinking barriers that high school students face in learning physics and mechanics from their perspectives. By analyzing the understanding of mechanical concepts, problem-solving processes, experimental operations, and other aspects, combined with specific examples, this study reveals the common forms of thinking obstacles and their causes in students' learning of mechanics. At the same time, corresponding strategies to overcome thinking barriers were proposed to help high school seniors better grasp knowledge of physics and mechanics, and improve learning efficiency and grades.

Keywords:

High school students
Physical mechanics
Cognitive impairment
Effective strategy

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1. Introduction

Physical mechanics is an important component of high school physics and one of the key examination contents in the college entrance examination. However, in the actual learning process, many high school seniors face many difficulties in studying physics and mechanics, with varying degrees of thinking barriers. These thinking barriers not only affect students' understanding

and mastery of mechanics knowledge but also hinder their ability to improve their problem-solving skills in mechanics. Therefore, in-depth exploration of the thinking barriers of high school students in physics and mechanics learning is of great practical significance for improving the quality of physics teaching and students' learning outcomes^[1].

2. The significance of high school students studying physics and mechanics

2.1. Cultivate logical thinking ability

The study of physical mechanics requires rigorous analysis and reasoning. In the process of solving mechanical problems, students need to clarify known conditions, determine the research object, analyze the force situation of the object, and use knowledge such as Newton's laws of motion to derive and calculate. This process can greatly exercise students' logical thinking ability, enabling them to learn to think systematically and identify essential laws from complex phenomena. This logical thinking ability not only plays an important role in physics learning, but also has a positive impact on the learning of other disciplines, as well as future university studies and careers ^[2].

2.2. Enhance problem-solving skills

Mechanical problems often have a certain degree of complexity and comprehensiveness, requiring students to apply multiple knowledge points and methods comprehensively to solve them. Through continuous practice and contemplation of mechanics problems, students can gradually master strategies and techniques for problem-solving. When facing practical problems, being able to quickly analyze the key points of the problem and choose appropriate physical models and methods for solving them is important. The improvement of problem-solving ability not only helps students achieve good grades in physics exams but also enables them to better cope with various challenges in daily life. For example, when encountering practical mechanical phenomena in daily life, such as calculating the braking distance of a car or analyzing the structural stability of a building, students can apply their knowledge of mechanics to analyze and solve them, enhancing their understanding and control of their lives.

2.3. Laying the foundation for future development

For high school seniors who aspire to apply for science and engineering majors, studying physics and mechanics lays the foundation for their future university studies and career development. In the science and engineering majors of universities, physical mechanics is an

important foundation for many professional courses, such as mechanical engineering, civil engineering, aerospace engineering, and many more. A solid foundation in mechanics can make it easier for students to understand and master professional knowledge during their university studies, preparing them for future career development. Even for students who do not choose science and engineering majors, the thinking and problem-solving abilities cultivated in the process of studying physics and mechanics will play an important role in other fields, such as research in humanities and social sciences, which also require logical thinking and analytical problem-solving skills ^[3].

3. Thinking obstacles in understanding mechanical concepts

3.1. Inaccurate understanding of the concept of force

In the study of mechanics, force is a fundamental concept. However, some high school seniors have a biased understanding of the concept of force. Some students believe that force is the cause of object motion, rather than the cause of changing the state of object motion. This erroneous understanding can lead students to make mistakes when analyzing changes in the motion state of objects. For example, when analyzing the motion of an object moving uniformly in a straight line on a smooth horizontal plane suddenly subjected to a horizontal force, some students mistakenly believe that force is the cause of the object's motion, and therefore assume that the object will immediately accelerate after being subjected to force, ignoring the important factor of inertia.

3.2. Confusion of the concept of acceleration

Acceleration is a physical quantity that describes the speed at which an object changes, but some students tend to confuse acceleration with the magnitude and direction of velocity. Some students believe that objects with high acceleration necessarily have high velocity, or that objects with zero acceleration also have zero velocity. For example, if an object is moving at a constant speed in a straight line, some students believe that the acceleration of the object is high because of its high speed. In fact, the acceleration of an object in

uniform linear motion is zero.

3.3. Thinking barriers during the problem-solving process

3.3.1. Lack of systematic problem analysis

When solving mechanics problems, some high school seniors lack systematic analysis methods and often rely solely on intuition or experience to solve them. They did not develop a habit of starting from known conditions, gradually analyzing problems, establishing physical models, and selecting appropriate formulas for solving them. For example, when solving a mechanical synthesis problem involving multiple objects and processes, some students do not know where to start and do not conduct a systematic analysis of the problem, resulting in a chaotic problem-solving process and numerous errors.

3.3.2. Rote memorization of formulas and a lack of ability to apply them flexibly

Some students only memorize various formulas by rote when studying mechanics, without understanding the physical meaning and applicable conditions of the formulas. When solving problems, they often mechanically apply formulas without considering the actual situation of the problem.

For example, when calculating the friction force of an object on a slope, some students simply apply the sliding friction force formula, $f = \mu \times N$ regardless of the object's motion state, without considering that the magnitude of the friction force should be determined based on the object's force balance when the object is stationary on the slope.

3.4. Thinking obstacles in experimental operations

3.4.1. Insufficient understanding of the experimental purpose and principles

In physics experiments, some students do not have a deep understanding of the experimental purpose and principles, and only mechanically follow the experimental steps without knowing why they need to do so. This kind of thinking disorder can lead to students lacking initiative and creativity in the experimental process, and being unable to gain real knowledge and skills from the experiment. For example, when

conducting experiments to explore the relationship between acceleration, force, and mass, some students only follow the steps in the experimental manual and do not understand why it is necessary to explore the relationship between acceleration, force, and mass by changing the mass and tension of the car.

3.4.2. Insufficient ability to process experimental data

After the experiment, processing the experimental data is also an important step. However, some high school seniors have insufficient abilities in experimental data processing. They do not know how to choose appropriate methods to process experimental data, nor can they correctly analyze experimental data to conclude. For example, after experimenting with measuring the gravitational acceleration of an object, some students do not know how to use the experimental data to calculate the gravitational acceleration or make errors during the calculation process.

4. Strategies for overcoming thinking obstacles in high school students' learning of physics and mechanics

4.1. Strengthen the learning of basic knowledge

4.1.1. Emphasize the understanding of concepts and laws

The concepts and laws in physical mechanics are the foundation of learning. Senior high school students should have a deep understanding of the connotations and extensions of basic concepts such as force, acceleration, and Newton's laws of motion. For example, in terms of the concept of force, it is necessary to clarify that force is the interaction between objects. It is not only necessary to know the three elements of force: magnitude, direction, and point of action, but also to understand the characteristics and production conditions of forces with different properties. For Newton's second law, $F = m \times a$, it is necessary to accurately grasp the relationship between acceleration, force, and mass, and understand how to apply this law for analysis and calculation in different situations.

4.1.2. Consolidate the application of mathematical knowledge

The solution to physical mechanics problems often

involves mathematical knowledge, such as trigonometric functions, vector operations, geometric shapes, and many more. Senior high school students should strengthen their review and consolidation of mathematical knowledge, and improve their ability to apply it to physics problems. For example, when solving the problem of force decomposition, it is necessary to apply knowledge of trigonometric functions. When analyzing the motion trajectory of an object, the properties of geometric shapes may be used^[4]. By continuously practicing, we can closely integrate mathematical knowledge with physics and mechanics problems to improve the accuracy and efficiency of problem-solving.

4.1.3. Conduct a systematic knowledge review

As a senior high school student, one can systematically organize knowledge of physics and mechanics through creating mind maps, summarizing notes, and other methods. Organize the various knowledge points of mechanics according to a certain logical relationship to form a clear knowledge framework. This helps to quickly retrieve the required knowledge when solving problems, avoiding situations of knowledge confusion and omissions. For example, mechanics can be divided into three parts: statics, kinematics, and dynamics, and the knowledge points of each part can be summarized separately to clarify the connections and differences between each part.

4.2. Improve learning methods

4.2.1. Proactive inquiry-based learning

Change the traditional passive way of learning knowledge and actively engage in inquiry-based learning. When studying physics and mechanics, do not rush to look for answers or consult teachers when encountering problems, but first think and try to solve them on your own. By consulting materials, conducting experiments, and other methods, we can delve into the essence and solutions of the problem. For example, when studying Newton's second law, there is a problem: an object with a mass of m is placed on a smooth horizontal plane and subjected to a horizontal constant force F , and the acceleration of the object is calculated. By analyzing the force situation of the object, the resultant force is determined as F , and then according to Newton's second law, $F = m \times a$, the

acceleration, $a = F/m$, can be easily obtained. In this process, the thinking mode of force analysis and formula derivation was applied. Firstly, clarify the research object, then conduct force analysis on it, and select appropriate formulas for calculation based on known conditions. This kind of thinking makes us more organized when solving mechanical problems.

4.2.2. Do more typical examples and analyze mistakes

Doing typical examples is an effective way to master knowledge and problem-solving methods in physics and mechanics. Senior high school students should choose some representative examples for in-depth analysis and practice, and summarize problem-solving ideas and techniques. Simultaneously, it is important to pay attention to error analysis, identify the reasons for one's mistakes, and promptly correct and summarize them. By analyzing incorrect questions, one can discover their shortcomings in knowledge understanding, problem-solving methods, and other aspects, and make targeted improvements and enhancements. For example, if one frequently makes mistakes in the synthesis and decomposition of forces, specialized reinforcement exercises can be conducted to summarize problem-solving methods and precautions for different situations.

4.2.3. Collaborative learning and exchange discussions

Collaborating with classmates for learning and communication can broaden one's thinking horizon and discover blind spots. In the process of studying physics and mechanics, high school seniors can form study groups to discuss problems and share their learning experiences. In discussions, different viewpoints and ideas collide with each other, which can stimulate students' thinking vitality and help them better understand and master mechanics knowledge. For example, for a complex mechanical synthesis problem, group members can analyze it from different perspectives, propose their solutions, and then discuss it together to find the optimal solution.

4.3. Breaking the fixed mindset

4.3.1. Cultivate innovative thinking

In the study of physics and mechanics, high school seniors should dare to question traditional problem-solving methods and thinking patterns and cultivate

innovative thinking. They should try to think about problems from different perspectives and find new solutions. For example, when solving the motion problem of an object on a slope, in addition to conventional force analysis methods, the law of conservation of energy can also be considered to broaden the problem-solving approach. Concurrently, we should actively participate in some technological innovation activities, such as physics competitions, and technological inventions, to exercise our innovation and practical abilities.

For example, when studying the chapter on “Balance of Objects,” one encounters a problem scenario where there is a slanted wedge on rough horizontal ground and a small object is placed stationary on top of the wedge. The teacher requested an analysis of the force distribution and interaction between small blocks and oblique splits. When analyzing the force on small objects, the thinking of isolation method was applied. Take out the small object separately for analysis, considering that it is affected by gravity. Furthermore, due to the small object being stationary on the diagonal split, it is inevitably subjected to the support force of the diagonal split. Further thinking, small objects tend to slide downward relative to the inclined plane, so they will be subjected to the static frictional force along the inclined plane caused by the inclined plane. Under the holistic approach, small objects and oblique splits are viewed as a whole, which is in a state of equilibrium due to gravity, ground support, and friction provided by the ground. Through this case, it can be seen that the thinking of isolation method and holistic method are very important in the study of physical mechanics. For complex mechanical problems, by appropriately applying these two methods, it is possible to analyze the force situation of objects more clearly, thereby better understanding and solving problems^[5].

4.3.2. Avoid empirical errors

Students are often influenced by past experiences during the learning process, which can easily lead to empirical errors. In the study of physics and mechanics, high school seniors should always remain vigilant and avoid relying solely on experience to judge problems. Careful analysis and reasoning should be conducted for every problem, and experience should not be blindly applied. For example, after learning about electric and magnetic

fields, some students may confuse the properties of electric and magnetic forces, which is influenced by their previous mechanical knowledge and experience. To avoid empirical errors, it is necessary to compare and analyze the characteristics of different types of forces.

4.3.3. Conduct thinking training

Special thinking training methods such as reverse thinking, divergent thinking, and many more can be used to break through thinking patterns. Reverse thinking refers to thinking from the opposite direction of a problem to find a solution. For example, when calculating the force situation based on the known motion state of an object, it is possible to first assume that the object is not under force, and then gradually analyze the force situation based on the actual motion state of the object. Divergent thinking is the process of starting from a problem and coming up with as many different solutions as possible. Through these thinking exercises, students' flexibility and creativity in thinking can be improved, and they can better cope with various problems in the study of physics and mechanics.

4.4. Optimize textbook content and teaching methods

4.4.1. Optimization of textbook content

Textbook writers can optimize the content of physics and mechanics to better meet students' cognitive laws and learning needs. Add some vivid and interesting examples and experiments to improve the readability and attractiveness of the textbook. For example, when explaining Newton's laws of motion, real-life examples such as car braking and athlete starting can be introduced to help students better understand the application of the laws. At the same time, the difficulty gradient of the textbook should be appropriately reduced, so that students can gradually learn mechanics knowledge and avoid developing fear of difficulty due to excessive challenges.

4.4.2. Diversified teaching methods

Teachers should adopt diverse teaching methods in the teaching process to stimulate students' interest and enthusiasm for learning. For example, experimental teaching methods can be used to allow students to observe and experience physical phenomena through

hands-on experiments, deepening their understanding of mechanics knowledge. Multimedia teaching methods such as animations and videos can also be used to visually present abstract mechanical concepts and laws to students. Additionally, problem-driven teaching methods, and inquiry-based teaching methods, among others, can effectively improve students' thinking and problem-solving abilities. Teachers should choose appropriate teaching methods based on different teaching content and students' actual situations to improve teaching effectiveness.

4.5. Reforming the examination evaluation system

4.5.1. Emphasize the examination of thinking ability

The current examination evaluation system mainly focuses on assessing students' mastery of knowledge, with relatively less emphasis on testing their thinking abilities. To guide students to pay more attention to the cultivation of critical thinking skills, the examination and evaluation system should increase the intensity of testing thinking ability. Open-ended and exploratory questions can be set up, requiring students to apply their learned mechanics knowledge and thinking methods to analyze and solve problems. For example, providing an actual mechanical problem scenario, allowing students to propose problems, design experimental plans, conduct data analysis, and draw conclusions, comprehensively testing students' thinking and innovation abilities.

4.5.2. Diversified evaluation methods

In addition to traditional exam evaluation methods, diversified evaluation methods can also be adopted to comprehensively evaluate students' learning processes and learning outcomes. Teachers can evaluate students' learning attitudes, thinking processes, and practical abilities through classroom performance, homework completion, experimental reports, group cooperation, and other aspects. This can encourage students to actively participate in the learning process and improve learning outcomes. Simultaneously, the evaluation results should be promptly fed back to students, allowing them to understand their strengths and weaknesses and make targeted improvements and enhancements.

5. Conclusion

In summary, as high school students, there are various thinking barriers in the study of physics and mechanics. These thinking barriers not only affect students' understanding and mastery of mechanics knowledge but also hinder their ability to solve mechanics problems. By analyzing the understanding of mechanics concepts, problem-solving processes, experimental operations, and other aspects, we have revealed the common forms of thinking barriers and their causes in our study of mechanics. We hope these strategies can help us better grasp the knowledge of physics and mechanics and improve our learning efficiency and grades.

Disclosure statement

The author declares no conflict of interest.

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Counselor's Competency and Employment Intention Among Engineering Graduates In A Government University In Qingdao China

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Abstract:

To investigate the impact of counselors' competency on the employment intentions of engineering undergraduates, a study was conducted at A Government University In Qingdao China. The goal of this study was to identify ways to develop counselors' competency and promote graduates' employment intentions. By improving the quality of counseling services and enhancing graduates' employment prospects, universities could provide significant support to their students and contribute to their success.

Keywords:

Engineering graduate
Counselor's ability
Employment intention

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1. Introduction

Counselors' competency is a critical component in providing effective support and guidance to undergraduate students^[1]. It is essential to promoting their mental and emotional well-being, helping them navigate through various challenges, and enhancing their overall quality of life. Competent counselors are an invaluable resource for undergraduate students, providing them with the necessary tools and support to overcome obstacles and achieve their goals^[2].

Decree No. 43 of the Ministry of Education of the People's Republic of China stipulates that counselors are the backbone of ideological and political education for college students. They are the organizers, implementers,

and guides of daily ideological and political education and student management in colleges and universities. Counselors should strive to become life mentors for students and close companions in promoting a healthy life. In terms of career planning, employment, and entrepreneurship guidance, they must provide students with scientific career planning, employment advice, and related services. Counselors should help students establish a correct concept of employment and encourage them to work in grassroots areas, the western regions, and the most needed places in the country.

2. The competitiveness and employment rate of engineering graduates

In today's highly competitive job market, the employment intentions of college graduates have become a major concern for universities and the government in China^[3]. To promote social and economic development, the Chinese government has implemented various policies to increase the employment rate of college graduates^[4]. As part of this effort, universities are expected to provide quality education and support services to students, including counseling services^[5].

Counseling services are crucial in promoting the mental health and well-being of college students. Counselors provide support and interventions to help students overcome challenges and enhance their overall well-being. However, the quality of counseling services depends on the competency of counselors^[6]. Competent counselors can provide effective support and interventions, promote ethical practice, and contribute to the targeted outcomes and development of college students^[7].

Therefore, the development of counselors' competency has become a crucial part of teaching management. School managers recognize that improving the competency of counselors is essential to providing high-quality counseling services to students. It is important to note that different students may have different needs and challenges, and counselors need to have the necessary skills and knowledge to address these needs effectively. Therefore, developing counselors' competency is critical to supporting the academic and career success of college students^[8].

For engineering students, employment intention is particularly important. Currently, China's engineering and technology field is facing huge challenges, requiring a large number of high-quality engineers to drive technological innovation and industrial upgrading. Therefore, the Chinese government and universities attach great importance to improving the employment intention and competitiveness of engineering students^[9].

A Government University In Qingdao China is a mainly engineering-focused university, and the employment situation of its graduates is of great concern. Therefore, this study aims to explore the influence of counselors' competency on engineering students' employment intention at A Government University

In Qingdao China. By studying the competency of counselors and their support and intervention methods for students, as well as their impact on students' employment intentions, this study can help improve the employment competitiveness and employment rate of engineering graduates^[10].

Additionally, this study can provide reference and guidance for other universities in China. By understanding the relationship between counselors' competency and engineering students' employment intention at different universities, corresponding problems and solutions can be identified to improve the employment competitiveness and employment rate of college graduates and promote China's social and economic development^[11].

3. Counselor competency and employment intention of undergraduate engineering students

Zhang and Yuan explored effective employment guidance strategies for college students, using Shanxi Agricultural University as an example. The article highlighted the importance of accurate guidance and services, vocational value education, employment psychological guidance, and employment guidance skills. By addressing these issues, universities can better assist students in overcoming employment intention misconceptions and provide effective employment guidance. Overall, this article provided a comprehensive analysis of the misconceptions and causes of employment intentions among college students, emphasizing the importance of effective employment guidance strategies. The article provides practical suggestions for universities to improve employment guidance services and help students overcome employment intention misconceptions^[12].

In addition to the survey, in-depth interviews will be conducted with counselors and engineering undergraduates to explore the factors that influence the development of counselors' competency and the impact of counselors' competency on engineering undergraduates' employment intention. The data collected through the interviews will be analyzed using thematic analysis to identify common themes and patterns^[13].

The findings of this study will provide insights into the impact of counselors' competency on engineering

undergraduates' employment intention. The results will aid in the development of strategies to improve the competency of counselors and promote the employment intention of engineering undergraduates. The study's results will also contribute to the broader goal of promoting the mental and emotional well-being of undergraduate students and supporting their academic and career success ^[14].

4. Social Cognitive Career Theory

This study is anchored in the Social Cognitive Career Theory (SCCT) and Theory of Planned Behavior. This Social Cognitive Career Theory was first proposed by Robert D. Lent, Steven D. Brown, and Gail Hackett in the 1990s. The theory is based on Albert Bandura's Social Cognitive Theory (SCT), which emphasizes the importance of self-efficacy, outcome expectations, and goals in human behavior ^[15]. SCCT extends SCT to the domain of career development, suggesting that individuals' career choices and development are influenced by their characteristics, environmental factors, and the interaction between the two ^[16].

According to SCCT, individuals develop their career interests and goals through a process of observational learning, where they observe and model the behavior of others who are perceived to be successful in their chosen career paths. Individuals' self-efficacy, or their belief in their ability to perform specific tasks related to their career goals, also plays a significant role in their career development. Outcome expectations, or the anticipated results of their actions, influence individuals' motivation and persistence in pursuing their career goals ^[17].

5. Scope and delimitation of the study

This study aims to investigate the influence of counselors' competency on the employment intentions of engineering students at A Government University In Qingdao China in China. The study will focus on Mechanical Engineering graduates from specific academic years. Data will be collected through a survey questionnaire, and statistical methods will be used to analyze the data to identify the relationship between counselors' competency and

engineering students' employment intentions. The scope of the study is limited to students at A Government University In Qingdao China and will not include students from other universities or non-mechanical majors ^[18].

6. Differences in the employment intentions among respondents

The overall assessment of the respondents, based on their dimensions of employment intention in terms of the following profile variables, yielded the following results.

Differences in employment intention based on sex and age among the Mechanical Engineering respondents showed no significant impact. However, variations were observed among those who graduated in the school years 2019, 2020, and 2021, particularly in terms of behavioral attitude, with significant differences noted between graduates from 2019 and 2020 ^[19].

Furthermore, a significant difference was found among respondents based on the time spent with their respective counselors. The data indicated that the longer a counselor maintains a working relationship with a counselee, the greater the impact on the counselee's employment intentions.

7. Relationship between counselors' competencies and employment intentions

Generally, there was no significant relationship between the counselors' competency indicators and the employment intention factors of the Mechanical Engineering graduate respondents. However, a moderate to strong positive relationship was found between counselors' competency in terms of "Knowledge" and the behavioral attitude of the engineering graduates, with the relationship being strong and positive. Similarly, counselors' skills were significantly related to perceived behavioral control, showing a mild relationship, and also to internship expectations, with a strong and positive relationship ^[20].

8. Conclusion

Based on the findings of the study, the following

conclusions are hereby drawn:

- (1) The personal circumstances of the respondent graduates in Mechanical Engineering qualify them to assess and provide information about their counselors' competencies and their influence on employment intentions.
- (2) It can be deduced that the activities initiated by the counselors have fostered a closer working relationship, forming a stronger connection toward realizing the employment intentions of the Mechanical Engineering graduates.
- (3) The profile variables of the engineering students are not reliable factors for determining counselor competencies. Other measurements, beyond personal circumstances, should be considered.
- (4) The respondents, based on their assessments, recognize that to enhance students' employment abilities, the counselors' knowledge and skills are crucial components of their competency in guiding student employment.

Disclosure statement

The author declares no conflict of interest.

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The Effective Application of AIGC Technology in Visual Marketing Design Course Teaching

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Abstract:

With the rapid development of modern Internet technology, the advent of Artificial Intelligence Generated Content (AIGC) has revolutionized people's understanding of science and technology. AIGC technology has been widely applied across various fields, including education, where it enhances the quality of teaching and learning while accelerating the high-quality development of modern education. This paper focuses on the efficient visual marketing design course as the research object, exploring the significant value of AIGC technology in its teaching process. It analyzes the current application of AIGC technology in teaching this course and proposes effective strategies to maximize its potential. By integrating AIGC into the teaching of visual marketing design in colleges and universities, this study aims to highlight the transformative role of AIGC technology in education. Furthermore, it offers a fresh perspective on the high-quality application of AIGC technology in educational and teaching practices.

Keywords:

AIGC technology
Visual marketing design
Course teaching
Effective application

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1. Introduction

In the digital information age, with the rapid advancement of Internet technology, Artificial Intelligence Generated Content (AIGC) is gradually permeating various fields of social production^[1]. In addition to the practical application of enterprise production and management, AIGC technology has also been widely used in the field of education and teaching. More and more universities are incorporating AIGC technology into their curriculum. For the Visual Marketing Design course, the integration

and application of AIGC technology in teaching practice provides innovative classroom teaching tools and ways of thinking for the teaching of this subject and also improves the overall learning efficiency for students from the perspective of combining practice and theory.

Compared with the integration of AIGC technology, the traditional teaching mode has been difficult to adapt to the development of modern society^[2]. The comprehensive integration of artificial intelligence technology into the Visual Marketing Design course, step by step, not only

enhances students' theoretical understanding but also provides more opportunities for practical application, increases their interest in learning, and helps them master the subject more effectively. It can also innovate according to its actual situation, thus improving the overall teaching level and high-quality employment rate of students ^[3].

2. The important value of integrating AIGC technology into the teaching of Visual Marketing Design course

2.1. Improve classroom teaching efficiency

In the Visual Marketing Design course, under the traditional teaching method, students need to spend a lot of time on material collection and preliminary creation. For example, when making a poster, students have to look for appropriate image elements in numerous photo libraries, and then hand draw or use software to draw basic graphics ^[4]. The AIGC technology can quickly generate a variety of styles of images, copywriting, and other content according to the keywords entered by students. For example, if you input "fashion summer promotion poster," the AIGC system can provide poster sketches including different color matching, model pose, promotional information typesetting, and other design schemes in a short time, greatly saving students' time to find inspiration and build the basic framework ^[5].

In the teaching process, teachers often need to spend more time elaborating and demonstrating the feedback and modification of students' works. AIGC technology can quickly suggest specific changes by analyzing the gaps between the student's work and the target requirements. For example, for a brand logo design in a visual marketing design, AIGC can analyze the color contrast, graphic simplicity, fit with the brand concept and other aspects, and provide quantitative data and visual comparison results to help teachers guide students to modify more efficiently.

2.2. Inspires students' creative design

AIGC technology has powerful algorithms and massive data support that can generate a variety of unique design ideas. In Visual Marketing Design, it showcases visual design creativity in various styles and cultural contexts,

providing students with diverse perspectives ^[6]. For example, when students are designing visual marketing with traditional holiday themes, AIGC can provide creative combinations of traditional holiday visual elements from different countries and regions, such as integrating the red elements of the Chinese Spring Festival with the decorative styles of Western Christmas, inspiring students to break through the limitations of traditional thinking and open up to new creative directions.

Students are often limited to familiar design styles in the learning process. AIGC technology allows students to easily access works from a variety of art genres and design styles and incorporate them into their designs. For example, AIGC can generate examples of visual marketing works that combine surrealist painting styles with modern minimalist design styles, encouraging students to try mixing and matching visual elements of different styles to create marketing design works with unique visual impact.

2.3. Suitable for industry needs

The visual marketing design industry is developing rapidly, and the application of AIGC technology in the industry has become a trend. The integration of AIGC technology into the teaching of the course allows students to keep abreast of the latest developments in the industry ^[7]. For example, at present, many enterprises use AIGC technology to generate product display pictures and virtual fitting effects in e-commerce visual marketing. By learning the application of AIGC technology in the course, students can better adapt to the requirements of the future job market for visual marketing design talents ^[8].

In actual visual marketing design projects, enterprises have high requirements for efficiency and creativity ^[9]. By introducing AIGC technology into the course teaching, students can apply this technology to solve practical problems in simulated project practice. For example, when designing a visual image for a new brand, students can use AIGC technology to quickly generate preliminary plans for multiple brand logos and visual identity systems, which are then screened and optimized according to brand positioning and target audience, thereby improving students' operational ability and problem-solving ability in actual projects ^[10].

3. Current situation of integrating AIGC technology with Visual Marketing Design classroom teaching

3.1. Difficulties for teachers to adapt to AIGC technology

Many teachers of Visual Marketing Design courses have long been accustomed to traditional teaching methods and design tools^[11]. They may lack in-depth knowledge and mastery of AIGC technology. For example, some teachers may not be familiar with the image generation algorithm and the principle of text-to-image conversion in AIGC technology, so they cannot effectively guide students on how to use AIGC technology to create visual marketing design in the teaching process.

Traditional visual marketing design teaching focuses on students' hand-drawing ability and proficiency in traditional design software. Teachers may find it difficult to accept the changes brought by AIGC technology in their teaching concepts, believing that over-reliance on AIGC technology will weaken students' basic skills. The lag of this concept makes teachers not actively integrate AIGC technology in teaching, which affects the promotion of AIGC technology in curriculum teaching^[12].

3.2. Poor integration of curriculum system and AIGC technology

In the existing course system of Visual Marketing Design, the course setting of AIGC technology often lacks systematics^[13]. For example, AIGC technology may simply be mentioned in one chapter without being taught throughout the course. This makes it impossible for students to fully and deeply learn the application of AIGC technology in Visual Marketing Design and to form a complete knowledge system. On the other hand, Visual Marketing Design courses lack effective synergy with other related courses, such as Computer Programming, Data Analysis, and many more. The application of AIGC technology often involves multidisciplinary knowledge^[14]. For example, an in-depth understanding of image recognition algorithms in AIGC technology may require certain computer programming knowledge, but in the current curriculum system, these courses are not closely linked, which affects students' comprehensive understanding of AIGC technology and the improvement of application ability.

3.3. Students' excessive reliance on AIGC technology

When using AIGC technology, some students tend to overly rely on the generated results, which can hinder the development of their creativity and critical thinking skills. For example, in the Visual Marketing Design course, the design work generated by AIGC is directly used without in-depth analysis and personalized modification. As a result, students' creative abilities cannot be effectively exercised, and they cannot truly grasp the core connotation of Visual Marketing Design^[15].

The weak skills of students are also a significant problem. Since AIGC technology can quickly generate some basic design content, some students may neglect the learning of traditional basic design skills, such as hand-drawing skills, color theory, and the like. However, these foundational skills are very important for Visual Marketing Design, and they are the foundation for students to engage in creative expression and design optimization. Over-reliance on AIGC technology may prevent students from performing high-quality design tasks that require solid basic skills.

4. Effective measures to integrate AIGC technology in Visual Marketing Design classroom teaching

4.1. Strengthen AIGC technology application training for teachers

4.1.1. Technical training

Based on the extensive and mature application of AIGC technology in classroom teaching, schools, and educational institutions should provide systematic AIGC technology training for teachers of Visual Marketing Design courses^[16]. The training content can include the basic principles of AIGC technology, the use of commonly used AIGC tools such as Midjourney and Stable Diffusion, and the application cases of AIGC technology in Visual Marketing Design. For example, experts in the field of AIGC technology can be invited to give lectures and practical operation guidance, so that teachers can personally experience the powerful functions and application scenarios of AIGC technology, to improve teachers' proficiency in AIGC technology.

4.1.2. Updating teaching concepts

Organize teachers to participate in education and teaching seminars, and guide them to focus on the impact and reform of AIGC technology on Visual Marketing Design teaching^[17]. Encourage teachers to actively explore new teaching methods and evaluation systems, and integrate AIGC technology reasonably into the teaching process. For example, themed seminars on “AIGC Technology and Visual Marketing Design Teaching Innovation” can be held to allow teachers to share their insights and experiences to promote the renewal of teaching concepts.

4.2. Reconstructing the curriculum system

4.2.1. Set AIGC technical courses in the system

In the course system of Visual Marketing Design, the AIGC technical course should be set up as an important part. From basic theory to practical application, students are gradually guided to learn AIGC technology. For example, courses such as “Foundation of AIGC Technology,” “Creative Application of AIGC Technology in Visual Marketing Design” and “Collaboration between AIGC Technology and Other Design Tools” can be set up to enable students to fully grasp the application methods and skills of AIGC technology in Visual Marketing Design^[18].

4.2.2. Strengthen curriculum coordination

Strengthen the collaboration between Visual Marketing Design courses and other related courses. For example, a joint teaching project on the Algorithmic Implementation of AIGC Technology in collaboration with the Computer Programming course. In conjunction with the Data Analysis course, students learn to use data to optimize Visual Marketing Design solutions generated by AIGC technology^[19]. Through this course collaboration, students can broaden their knowledge and improve their ability to solve Visual Marketing Design problems by using multidisciplinary knowledge comprehensively.

4.3. Guide students to use AIGC technology correctly

4.3.1. Creative cultivation and guidance

In the teaching process, teachers should pay attention to guiding students to correctly use the content generated

by AIGC technology^[20]. Students are encouraged to use AIGC technology as a tool for creative inspiration, rather than as a substitute for creativity. For example, teachers can set creative extension homework, requiring students to make in-depth creative modifications and improvements based on the design generated by AIGC technology, adding their cultural understanding, emotional expression, and other elements to make the design work more personalized and in-depth.

4.3.2. Emphasize the importance of basic skills

Teachers should constantly emphasize the importance of traditional basic design skills in Visual Marketing Design. For example, the proportion of basic course content such as hand-drawing exercises and color-matching experiments should be reasonably arranged in the course teaching, so that students can understand that these basic skills are the necessary foundation of their Visual Marketing Design^[21]. At the same time, students are guided to integrate basic skills with AIGC technology and use these skills to optimize and enhance the generated content, thereby improving their comprehensive design abilities.

5. Conclusion

The progress of modern Internet technology has promoted the development of human society. Especially the AIGC represented by ChatGPT has attracted much attention since its advent^[22]. It can be said that the application of AIGC technology in the teaching of Visual Marketing Design is of great value, but there are still some problems. Effective measures such as strengthening teacher training, reconstructing curriculum systems, and guiding students to correctly use AIGC technology can improve the application effect of AIGC technology in Visual Marketing Design course teaching, cultivate talents who are more in line with industry needs, and have innovative abilities.

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Research on the Path of Implementing the Fundamental Task of “Cultivating Virtue and Building Character” in Public Physical Education in Zhejiang Province’s Universities

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Abstract:

At the National Education Conference, General Secretary of China emphasized that “who to cultivate, how to cultivate, and for whom to cultivate are fundamental issues of education.” Universities, as the primary ground of higher education in China, must always adhere to the mission of “cultivating virtue and building character” in talent development, contributing largely to the country’s and society’s development. Physical education is an essential component of the university education system, playing a vital role in enhancing students’ physical fitness and promoting their mental and physical well-being. This paper takes Zhejiang Province’s universities as the research subject, analyzing the fundamental paths and current state of implementing the core task of “cultivating virtue and building character” in public physical education. It explores the factors influencing the implementation of this task and the challenges faced, and further proposes strategies for vocational colleges to effectively implement this fundamental task in their physical education teaching.

Keywords:

Public physical education
Cultivating virtue and building character
Path

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1. Introduction

As society progresses, talent demand has become the core issue in various fields. Fully implementing quality education and cultivating socialist successors requires “cultivating virtue and building character” as the

fundamental goal. Universities, as the primary ground for talent cultivation, are not only an essential part of China’s talent development system but also the main vehicle for implementing the fundamental task of “cultivating virtue and building character.” Physical education, as an

important part of university education, also shoulders an irreplaceable responsibility in this regard. Therefore, in the new era, attention must be paid to improving the quality and level of physical education in universities, especially in the context of continuous deepening reforms in university education, which impose new requirements on physical education.

2. The necessity and feasibility of implementing the fundamental task of “cultivating virtue and building character” in public physical education at universities

University physical education not only equips students with professional sports knowledge but also broadens the scope of education, enhances the value range of sports education, and enables the organic integration of moral education, physical fitness, and mental health education. This not only helps shape the personality of university students but also offers opportunities for emotional needs, ideological guidance, and willpower training. Establishing the value of sports education is a prerequisite for the implementation of the fundamental task of “cultivating virtue and building character.” It is one of the core goals of university sports education and plays a decisive role in shaping students’ worldviews, values, and character^[1].

2.1. Theoretical significance

University physical education courses are comprehensive, including both theoretical and practical aspects of sports, which differentiates them from other university disciplines. The teaching objectives of university physical education go beyond mastering professional skills; they play a crucial role in students’ physical and mental health. Effectively conducted physical education enables students to develop resilience and strong willpower when facing challenges. In areas such as character building, habit formation, and mental health education, physical education holds unique advantages that cannot be matched by other courses^[2,3].

- (1) “Cultivating virtue and building character” is the fundamental guarantee for the existence of universities. Universities must adhere to socialist principles, and the successors we cultivate must

have the correct worldview, values, and moral standards that align with the Four Cardinal Principles. The uniqueness of university physical education provides an inherent advantage in implementing this task.

- (2) “Cultivating virtue and building character” serves as a strategic support for talent development. Talent development is the core task of universities, and the ultimate pursuit of this mission permeates every aspect of education. University physical education provides the platform and conditions to achieve this fundamental goal while fulfilling the core task of talent development.
- (3) “Cultivating virtue and building character” is the soul of the great rejuvenation of the Chinese nation. The fundamental task, driving force, and scientific guidance of education revolve around this concept. Public physical education in universities enriches students’ knowledge, refines their character, and shapes their values, guiding students to form correct values during the initial stages of their personal development^[4].

2.2. Practical significance

Since the 18th National Congress of the Communist Party of China, the educational philosophy of “cultivating virtue and building character” has permeated every aspect of education. In the university framework of fostering moral, intellectual, physical, aesthetic, and labor education, sports education plays a significant role, possessing an exclusive function of moral education. Therefore, in setting physical education goals, universities must integrate this educational philosophy into the practical aspect of teaching^[5].

- (1) Sports education contributes to cultivating students’ sense of competition. In today’s society, competition is omnipresent, and whether students possess a competitive spirit sets higher standards for their adaptability to social development. Many sports activities instill a sense of competition, which is vital for achieving personal value. Without a sense of competition, there is no spirit of transcendence, and thus, no vitality. Sports education adds vibrancy to

the mission of “cultivating virtue and building character.”

- (2) Sports education fosters students’ sense of teamwork. One critical element of physical education is the cultivation of teamwork. Many sports events cannot be completed solely by individual effort; they require strong team support. After entering society, students must adapt quickly, and teamwork is key to this adaptation, aligning with the core goals of “cultivating virtue and building character.”
- (3) Sports education promotes students’ sense of responsibility. Modern university students must possess a sense of responsibility, which is cultivated throughout their education. Responsibility cannot be fostered by a single course but rather requires repeated life experiences and social practices. The unique nature of physical education provides a platform for cultivating a sense of responsibility, allowing students to deeply understand its importance through sports activities, ultimately enhancing their social responsibility^[6,7].

3. Factors influencing the implementation of the fundamental task of “cultivating virtue and building character” in public physical education in Zhejiang universities

3.1. Campus sports culture development

Throughout Chinese civilization, patriotism has been a powerful force for unity, cohesion, and harmonious development, remaining a timeless topic. Even today, as China’s comprehensive national strength rapidly develops, it is still necessary to vigorously promote sports culture and deeply cultivate a sense of national pride and responsibility. As a complex social phenomenon, sports contain rich cultural connotations and serve as an essential channel for promoting sports culture and enhancing patriotic sentiments. Through participation in sports activities, students can experience the power of teamwork, gradually learn to sacrifice for the greater good of the team, and understand the history of progress and the philosophical culture embedded in sports, thereby

appreciating the depth of sports culture, enhancing their historical identity and cultural confidence. When watching sports events, students can perceive the athletes’ sense of responsibility and mission, striving for the honor of the motherland with relentless effort, while also expressing their expectations for the nation’s victory. Campus sports culture helps cultivate students’ sense of national pride and confidence, strengthening their awareness of national responsibility and fostering a deeper sense of duty and patriotism^[8].

3.2. Design of physical education classroom instruction

Traditional physical education classroom design often focuses heavily on teaching basic sports theories and skills, utilizing methods such as lectures, demonstrations, and practice to help students master fundamental sports techniques. However, traditional physical education classrooms are constrained by classroom order, with only the participation, supervision, and management of physical education teachers, lacking diverse extracurricular activities. In physical education teaching, where students are the main participants, it is essential to combine traditional classroom instruction with extracurricular activities effectively. Campus cultural construction, including the development of sports culture, uses diverse extracurricular activities as a vehicle, achieving an organic combination of classroom instruction and extracurricular sports activities. Students can apply the theoretical knowledge and sports skills learned in the classroom to extracurricular activities. Similarly, challenges faced during extracurricular activities can be effectively brought back into the classroom, where students can further enhance the quality of instruction through practice, ultimately achieving the fundamental goal of “cultivating virtue and building character.”

In designing physical education classroom plans, university sports teachers should give more consideration to the application and practice of sports education. To realize the educational function of university sports culture, purposeful, planned, and organized classroom teaching and extracurricular sports activities must be carried out in tandem, promoting mutual improvement. This approach plays a direct role in cultivating students’ competitive spirit, teamwork, and sense of responsibility.

Through the diverse practice of physical education, students can be guided to establish the correct worldview, values, and outlook on life ^[9].

University sports teachers should transform traditional teaching models by changing the one-way “teacher-to-student” transmission model into a two-way “teacher-student” interactive mechanism. This transformation meets students’ individualized learning needs, stimulates their motivation, and guides them to delve into the essence of problems, enhancing the practical education function of physical education ^[10].

3.3. Physical education evaluation system

Traditional physical education teaching has focused more on imparting knowledge and skills, often placing students in a passive learning state. In physical education classes, students’ enthusiasm for learning and physical practice is typically low, leading to a tendency to become bored with the subject. Therefore, physical education teachers need to shift traditional teaching concepts, understand students’ needs, meet their developmental requirements, and spark their interest in learning. Students are not merely “participants” in learning but are also “creators” of what they learn. Only by fully motivating students’ initiative and creativity can they gradually come to enjoy and love sports, develop the habit of consistent physical exercise, and cultivate an awareness of lifelong physical activity.

The overall goal of physical education and health courses is for students to master sports knowledge and skills, enhance physical fitness, develop the habit of regular exercise, and adopt a healthy lifestyle and positive outlook on life. However, university physical education teachers often teach multiple classes with varying levels of student athletic ability. Thus, physical education teachers must tailor different teaching goals for students with different levels of athletic ability.

Previously, physical education course goals were divided into three categories: cognitive, skills, and emotional goals. The new physical education curriculum standards divide the teaching goals into five categories: participation in sports, sports skills, physical health, mental health, and social adaptation. The emotional goals in the old system were relatively broad and lacked specificity, leading them to be easily overlooked during teaching. The new goals, which focus on student’s mental

health and social adaptation abilities, replace the previous emotional goals, making them more detailed and specific ^[11].

As a result, teachers need to pay closer attention to students’ psychological changes during the teaching process, listen to their inner thoughts, help them regulate emotions and stress, and guide them toward developing an optimistic outlook on life. This will improve students’ mental health and social adaptability.

4. Strategies and recommendations for implementing the fundamental task of “cultivating virtue and building character” in public physical education in Zhejiang universities

4.1. Strengthening Moral education training and promoting teacher development

Firstly, it is essential to reinforce moral education awareness and improve moral cultivation. A high-level teaching staff with both virtue and talent is a prerequisite for schools to implement the fundamental task of “cultivating virtue and building character.” Teachers should be encouraged to actively participate in theoretical training, academic seminars, special lectures, and experience-sharing sessions. They should thoroughly study national policies on “cultivating virtue and building character,” fully grasp its essence and connotations, and deeply understand the fundamental task of universities in this regard, along with the moral education advantages and necessity of university sports culture. This will help enhance teachers’ moral cultivation, increase their and their students’ moral education awareness, maintain a noble moral character, and strengthen moral guidance for students. Teachers should set an example through their integrity, influencing and inspiring students with their charisma, and becoming role models in moral character ^[12].

Secondly, it is important to cultivate the ability to integrate moral education and improve its effectiveness. By organizing special training sessions on “cultivating virtue and building character” and “integrating moral education into physical education,” as well as observing exemplary cases and engaging in peer review, teachers can receive systematic training and exchange ideas on

integrating moral education into physical education, including aspects such as principles, methods, content, tools, and evaluation. Teachers should be encouraged to improve their teaching methods and focus on students' potential for diverse development, enthusiasm for learning, and individual differences. This should emphasize the dynamic generation of teaching, mutual learning between teachers and students, and comprehensive integration, thereby awakening students' intrinsic motivation for moral development^[13,14].

4.2. Changing teaching concepts and improving self-competence

Some physical education teachers lack a deep understanding of the concept of “cultivating virtue and building character” and hold an indifferent attitude toward it. They perceive it as merely a term related to “virtue” and have little understanding of the relationship between virtue and education or the true meaning of “cultivating virtue and building character.” Moreover, they have not developed a strong emotional connection to it. In some cases, teachers incorporate moral education elements into physical education only to meet administrative requirements, often doing so mechanically and without considering the appropriate integration of these elements. As a result, the integration of moral education into sports becomes ineffective^[15].

Traditional teaching concepts, which focus on knowledge transfer and skill acquisition, have long overshadowed the development of students' moral education. Teachers rarely hone or enhance their skills in integrating moral education into their teaching. Many teachers rely on self-exploration and find it difficult to incorporate moral education effectively, leaving them feeling inadequate and uncertain about how to assess its impact. Students often have a weak sense of moral development and sports consciousness, perceiving physical education merely as the acquisition of sports knowledge and skills. They do not fully appreciate the moral aspects of sports, such as cultivating willpower, moral values, teamwork, honesty, and friendship. Even in a positive sports culture environment, the impact of moral education may be significantly diminished^[16].

4.3. Expanding the pathways for implementing

the fundamental task of “cultivating virtue and building character”

Firstly, it is crucial to accurately define moral education goals and guide its development effectively. In line with the concept of holistic education, moral education goals should be set according to the teaching content, students' developmental characteristics, needs, and emotional experiences. For example, goals such as “actively striving for good results for one's team in competitions” or “understanding and articulating the importance of teamwork” can be established to guide and inspire teachers' efforts in moral education and to assess its effectiveness.

Secondly, fully explore the content of moral education to enhance its effectiveness. Different teaching content contains different moral elements. Based on the characteristics of sports activities, students' development levels, and their learning and life experiences, the moral elements embedded in physical education content should be thoroughly explored and scientifically planned. These elements can be integrated into class atmospheres, skill learning, physical training, and interpersonal interactions. Through direct participation in sports activities, students' behavior can be guided, their willpower can be honed, and their character can be strengthened.

Thirdly, develop diverse methods for integrating moral education to motivate students' moral development. In teacher-student interactions, teamwork, and exploratory learning, methods such as role models, inspiring examples, and ceremonial rituals should be used to stimulate students' intrinsic motivation for moral development. This will facilitate effective spiritual communication between teachers and students, achieving a deeper level of moral engagement.

Finally, innovate teaching evaluation methods and include moral education assessment. Teachers must fully recognize the diagnostic, guiding, and motivational functions of evaluation. Both formative and summative assessments should be used simultaneously. Teachers should promptly praise or reward behavior that aligns with moral standards and criticize and analyze inappropriate behavior, providing targeted guidance. By emphasizing strengths and addressing weaknesses, students and teachers can experience deeper emotional connections to moral education, leading to the continuous

improvement of moral character and promoting the healthy development of moral education^[17].

5. Conclusion

In the context of the new era, university sports culture holds unique advantages in promoting students' moral development. Currently, universities are actively building their sports cultures and strengthening the integration of moral education for both teachers and students. Although some progress has been made, there is still a lack of mature experience for reference. This study, based on different forms of university sports culture, offers some insights into the integration of moral education for teachers and students, aiming to effectively enhance the moral and physical education of both through sports culture.

For universities to fulfill the fundamental tasks of "Health First" and "Cultivating Virtue and Building

Character," changes are needed in six key elements: teaching concepts, goals, content, methods, evaluation, and teacher competence. It is necessary to shift away from the past emphasis on physical fitness over moral education, and truly implement educational goals in the classroom. The content should evolve from "comprehensive experience" to "focused breakthroughs," utilizing the advantages of school sports and developing unique sports identities for each institution. The traditional lecture-style teaching methods should be replaced by situational teaching methods, and evaluation should shift from traditional outcome-based assessment to process-based evaluation. By improving teachers' creativity and ability to foster moral development, physical education courses can cultivate the essential qualities and key competencies students need for lifelong development and social progress, preparing successors for the modernization of socialism.

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An Analysis of the Characteristic Meaning of “One Dance, Multiple Ethnicities” in the Gansu Region of China

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Abstract

Within the context of the Chinese national community, which reflects a long history of multi-ethnic communication and integration, the sheepskin fan dance, characterized by the concept of “one dance, multiple ethnicities,” has emerged in Gansu. This dance embodies the spiritual values of integrity, inclusiveness, sharing, and co-creation. Centering on the sheepskin fan dance in the Gansu region, this paper examines its ontological characteristics, situates it within the framework of contemporary societal themes, and conducts a comprehensive analysis of similar folk dances with shared features. The aim is to guide the development of folk dances in the modern era while deepening their role and significance in fostering a strong sense of Chinese national identity.

Keywords

Consciousness of the Chinese national community
Sheepskin fan dance
One dance, multiple ethnicities
Gansu

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1. Introduction

In this context, building on existing research, this paper explores the intersection of the consciousness of the Chinese national community and dance art, with the sheepskin fan dance of Gansu as the research focus. By emphasizing its characteristics of “one dance, multiple ethnicities,” this study aims to enhance the cohesion and sense of identity within the Chinese nation through the lens of dance art. This approach also embodies an active

awareness of the Chinese national community.

Gansu has been a multi-ethnic province since ancient times. The dance phenomena arising in this environment not only reflect the traditional culture of the Chinese nation but also embody the distinctive cultural traits of each ethnic group. Within Gansu, the development of dance culture is particularly unique. Among these traditions, the sheepskin fan dance has a long history and widespread presence. The sheepskin fan

dance is performed in the Wushan Mountains of Tianshui, Longnan Xihe, Minxian County of Dingxi, and Weiyuan areas of Gansu Province, all exemplifying the “one dance, multiple ethnicities” characteristic.

2. Integration and inclusive coexistence

The characteristics of “one dance, multiple ethnicities” are closely interconnected with the consciousness of the Chinese national community. From a historical perspective, although the performances of the sheepskin fan dance in Xihe, Dingxi, Weiyuan, and Tianshui Wushan in Gansu Province vary in timing, they are all situated in southeastern Gansu and share a common trajectory in the historical evolution and development of the Chinese nation ^[1]. On the one hand, the “one dance, multiple ethnicities” characteristic reflects shared cultural and performance forms among ethnic groups. On the other hand, it has endured throughout the historical development of various ethnic communities in Gansu. From a historical perspective, the sheepskin fan dance of Longnan Xihe, Dingxi Minxian, Weiyuan, and Tianshui Wushan does not exhibit the feature of “one dance, multiple ethnicities” as a result of short-term interactions or exchanges. Instead, this characteristic has emerged from the long-term development and integration of diverse ethnic groups over time ^[2].

The cultures of various ethnic groups have collided and interwoven throughout the long course of history, giving rise to shared cultural commonalities. The sheepskin fan dance in different regions reflects the characteristics of “one dance, multiple ethnicities.” Over thousands of years of history in Gansu, through the evolution of social and historical development, various ethnic groups have gradually formed a state of communication and integration. Together, they have created a shared cultural and historical narrative while preserving their unique identities.

From a spatial perspective, the connection of mountains and rivers facilitates the blending of dances. The sheepskin fan dances of Longnan Xihe, Dingxi Minxian, Weiyuan, and Tianshui Wushan coexist within Gansu, unified by their origin in the land of the Chinese nation. These dances share the same physical space and are deeply interrelated. The characteristics of

“one dance, multiple ethnicities” are not only marked by shared prosperity and mutual reliance but also by inclusiveness, which is a core element of this concept. In their interaction with diverse cultures, the sheepskin fan dances of different regions neither reject nor harm one another. Instead, they attract, integrate, and adapt to each other, embodying inclusiveness and diversity in their evolution ^[3].

Although the Han ethnicity plays a central role in the inheritance of this tradition, the cultural composition of the sheepskin fan dance also incorporates elements and relics from the Tibetan, Qiang, and other minority ethnicities. In its performance, Tibetan, Qiang, and other ethnic groups also participate, blending diverse ethnic cultures into a unified expression. This kind of cultural inclusiveness does not imply the dissolution of any single ethnic group’s culture, nor does it mean the indiscriminate absorption of all cultural elements. Instead, it promotes the development and preservation of the essence of traditional cultures from various ethnic groups, fostering a shared cultural heritage among them.

3. The co-creation and sharing of national cultural symbols

Cultural symbols are representations that embody unique cultural meanings and connotations. National cultural symbols reflect the ideological spirit and collective emotions shaped by the historical development of people, highlighting distinctive national and regional cultural characteristics. The sheepskin fan dance serves as a symbolic representation of national culture ^[4]. Without a common intersection of shared material achievements and interests, it is impossible to form a consensus or a strong sense of community. The memory of history is the process through which all ethnic groups share their past. In the course of cultural exchanges, the spread of the sheepskin fan has facilitated interaction and communication between different regions and ethnicities, building a shared spiritual home for all, united by common emotions. The emergence and formation of the sheepskin fan dance in the Gansu region was not the creation of any one nation ^[5]. The national cultural symbols we see today have been shaped by the efforts of many ethnic groups, each contributing their culture

and strength. In terms of culture and performance, the sheepskin fan dance incorporates elements from Tibetan, Qiang, Han, and other ethnic groups, creating a strong sense of unity. These symbols are not exclusive to the Tibetan, Qiang, or Han cultures, but rather represent the cultural heritage of the entire Chinese nation.

The sheepskin fan dance, which embodies the “one dance, multiple ethnicities” characteristics, integrates the diverse cultures of local ethnic groups. It allows shared national cultural symbols to transcend ethnic and regional boundaries, carrying distinct aesthetic values and spiritual qualities. These symbols are not limited to one specific culture. They are shared and participated in by multiple ethnic groups, creating a collective experience. This reflects the historical reality of long-term communication and integration among China’s ethnic groups, woven together by a shared and interactive Chinese culture ^[6]. It is not only a clear expression of Chinese culture but also an important cultural representation within the Chinese national community.

The sheepskin fan dance, with its characteristic “one dance, multiple ethnicities,” highlights the concept of sharing. The term “multiple ethnicities” directly reflects this idea. Its remarkable “adaptability” allows it to evolve and thrive across different ethnic groups and regions while maintaining the distinctiveness of national cultural symbols. This process results in a unique national culture and a stable, collective sharing pattern. The “one dance, multiple ethnicities” characteristics are evident in the harmonious and shared national community environment. Whether in external symbols or internal culture, the mutual ownership and collective enjoyment of this tradition by all ethnic groups is revealed.

4. The construction of geo-community and spiritual community

The terms “Chinese nation” and “community” combine to form the concept of the “Chinese nation community.” Ferdinand Tönnies argues that “the basic forms of community are consanguineous community, geographical community, and spiritual community.” A geo-community refers to people living together in the same geographical area, while a spiritual community involves individuals who influence and coordinate with each other within the

same environment ^[7]. Since the construction of a geo-community and spiritual community, the characteristics of sheepskin fan dance with “one dance, multiple ethnicities” in the Gansu area have a happy land for development, laying a foundation for the construction and development of the Chinese nation’s community consciousness.

The characteristics of “one dance, multiple ethnicities” highlight the interaction and “common presence” among various ethnic groups, preventing the contradictions stemming from cultural, geographical, linguistic, identity, and customs differences from defining their relationships. On one hand, the geo-community is reflected in the performance of the sheepskin fan dance across different regions of the Gansu Province. While there are regional variations, there is a shared cultural phenomenon, with many commonalities in form and tradition. On the other hand, it is also demonstrated through the communication and interaction of different ethnic groups within the same space. Shared geography and living conditions embody the natural commonalities among these groups. “Common existence” not only provides the spatial foundation for group interaction but also offers emotional support for individuals living together in the same space ^[8].

From a geographical perspective, Gansu lies at the intersection of the Loess Plateau, the Inner Mongolia Plateau, and the Qinghai-Tibet Plateau. Longnan West, Dingxi Minxian, Weiyuan, and Tianshui Wushan share similar living environments. These areas are adjacent to the plateau, with rugged and complex terrain, and they all rely on the Yellow River, creating a relatively isolated space. Born within the same geographical region, they are all part of the Chinese nation. This shared environment fosters interaction among various ethnic groups and a common historical memory of the sheepskin fan dance, which has helped shape the geographical community. It has also provided the foundation for the development of the “one dance, multiple ethnicities” characteristic of the sheepskin fan dance ^[9].

Spiritual and emotional connections serve as the glue that binds the community together. A spiritual community is a unique entity where individuals believe that others can feel their emotional state, share in empathy, and collectively maintain this emotional bond. The sheepskin fan dance, as a folk art inspired by this

shared spirit, has been created and participated in by many ethnic groups, becoming a spiritual product of all ethnicities. Amid the interweaving and coexistence of different cultures, the characteristics of “one dance, multiple ethnicities” have emerged through the sheepskin fan dance. Through the shared memory and interaction of all ethnic groups, emotional synchronization and spiritual connection are fostered during the common performance and appreciation of the dance. This process explores the relationship between diversity and unity, highlighting the role of shared memory in creating a sense of collective identity^[10].

5. Conclusion

Jointly awakening the national spirit and emotional consensus created by “consistency,” the sheepskin fan dance’s “one dance, multiple ethnicities” features bring people together from all ethnic groups. The emotional bonds between these ethnic groups form the internal connection, based on a shared spirit that has accumulated over time. This unity allows people from all ethnicities to become closely linked, highlighting national centripetal force and cohesion, and becoming the best representation of the spiritual community. Furthermore, it provides a unique perspective for the study of ethnic exchanges and integration in Gansu, offering cultural support for the exploration of the consciousness of the Chinese nation community.

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