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The Impact of Curriculum Management and Sports Direction Courses on the Learning Effectiveness of Preschool Physical Education Majors at West Yunnan Normal University of Science and Technology

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Abstract
This study examines the influence of PE curriculum management and sports direction courses on the learning experience and effectiveness of preschool education majors at West Yunnan Normal University of Science and Technology. Using a quantitative approach, 365 valid questionnaires were collected through simple random sampling. Descriptive statistics, reliability, correlation, and regression analyses were conducted, with Cronbach's alpha ensuring data reliability. Results revealed that: 1) school curriculum management positively impacts sport direction courses (R^2 = 0.756); 2) curriculum management positively influences learning effectiveness (R^2 = 0.654); and 3) sports direction courses enhance learning effectiveness (R^2 = 0.603). The findings contribute to optimizing preschool education management, improving curriculum design, and promoting quality education and well-being, aligning with Sustainability development goals.

Keywords: Curriculum Management, Education Equality, Sport Direction Course, Good Health and Wellbeing, Equity Education.

Introduction

In recent years, with the improvement of the social demand for children's comprehensive development, the status of preschool education has become more and more prominent. As the starting point of basic education, preschool education not only plays an important role in children's cognitive development but also affects their long-term development of emotion, social communication and physical health. In this context, the curriculum setting of preschool education majors has become an important issue in the field of education. As an indispensable part of it, physical education curriculum is not only related to the improvement of children's physical quality but also plays a key role in the coordinated development of body and mind and the cultivation of social skills.

However, there are still some deficiencies in the current physical education curriculum design in preschool education, especially in some relatively underdeveloped areas. (Qi & Rattanapun, 2024; Rattanapun et al., 2018).

Due to its particularity of geographical environment, ethnic culture and educational resources, the western Yunnan region is facing more complex development needs of preschool education. Therefore, how to effectively design and manage the physical education curriculum according to the characteristics of this region has become an urgent problem to be solved in the field of preschool education.

As a local normal university, West Yunnan Normal University of Science and Technology undertakes the task of cultivating preschool education professionals for local students (Rattanapun et al., 2022; Yang & Rattanapun, 2023). The development and management of the physical education curriculum should not only meet the requirements of the national preschool education but also pay attention to the comprehensive needs of children's physical and mental development based on the unique situation of the western Yunnan region. Therefore, in-depth research on the Physical Education curriculum management and development of preschool education students in western Yunnan not only helps to improve the teaching quality of the major but also provides theoretical support and practical guidance for the development of local preschool education.

Research Questions

What curriculum management and development impact on Sports direction course of preschool physical education majors at West Yunnan Normal University of Science and Technology?

Does curriculum management and development impact on learning effectiveness of preschool physical education majorat West Yunnan Normal University of Science and Technology?

Does sports direction courses impact on the learning effectiveness of preschool physical education majorsat West Yunnan Normal University of Science and Technology?

Research Objectives

- To study the curriculum management and development impact on the sports direction courses of preschool physical education majors at West Yunnan Normal University of Science and Technology.
- To explore the curriculum management and development impact on the learning effectiveness of preschool physical education majors at West Yunnan Normal University of Science and Technology.
- To analyze the sports direction courses impact on the learning effectiveness of preschool physical education majors at West Yunnan Normal University of Science and Technology.

Conceptual Framework

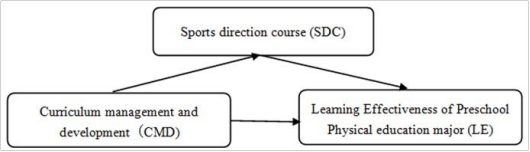

Figure 1 Conceptual Model

Literature Review

One research about the overall functionalities of teaching and curriculum of a preschool physical education major can emphasize the use of current high-tech applications including the use of Virtual Reality (VR). This practice shows a considerable progress in learning performance, indicating that the modern curriculum and novel methods of teaching may increase the study efficiency and promote the knowledge level and interest towards the discipline among the students (Wang et al., 2022).

Such curriculum and pedagogical models as SPARK (Sports, Play, and Active Recreation for Kids) may be traced through their efficacy in enhancing the sphere of physical education due to highly active curriculum and individual approach to teaching. It proves that the application of the same tactics is possible to promote effective learning processes within a certain setting, such as physical education in preschools (Mckenzie et al., 2016).

With regard to the curriculum development, sustainable practices can be introduced into the eco-programs, as this can significantly improve the learning outcomes. Research indicates that

kindergartens that have implemented eco-programs have managed to integrate the numerous educational aspects, hence resulting in enhanced results of education than those without the implementation of the program, therefore, underlining the significance of an all-around approach to education (Lepičnik Vodopivec & Šindić, 2025).

The issues and suggestions raised in early childhood physical education instruction shows the demand of fruitful professional development and augmentation of resources to the teacher to accomplish and guide the courses in sports. This means the essentiality of teacher training and curriculum guidance to the state of enhanced learning efficiency (Tsangaridou, 2016).

In addition, the need to accommodate students with special educational needs by making some prerequisite pedagogical modifications toward their inclusion in physical education guarantees fair representation. Strategies used in promoting the activities of these models such as co-teaching and peer tutoring have been found to improve involvement and socialization which is very important in the overall growth and development of all students including those in the early childhood education program (Ben Rakaa et al., 2025).

Research Methodology

This quantitative research design used a questionnaire to collect data information from students at West Yunnan Normal University of Science and Technology. In this study, the Yamane approach was applied with a total population of 4172 students. The formula was used to compute the sample size at a 5% significance level, which yielded 365 responses. Simple random sample was used for the questionnaire survey, which included 320 students (70 freshmen, 75 sophomores, 85 juniors, and 90 seniors), 15 physical education teachers, and 30 alumni. In order to obtain relevant data, APP-Questionnaire Star was used to conduct a questionnaire survey in this study. The questionnaire covers questions related to curriculum management and development (5 items), sport direction courses (5 items), and Learning Effectiveness (5 items) of Preschool Physical Education major. Each question was measured using a five-point Likert scale, with options ranging from 1 (strongly disagree) to 5 (strongly agree), which was used to quantify respondents' attitudes and perceptions.

The analysis included descriptive statistics such as frequency, percentage, mean, and standard deviation, as well as the Cronbach alpha to test reliability, validity test, correlation analysis and regression analysis to assess variable impact in accordance with the hypothesis.

Results

Descriptive Analysis for Demographic Factors

Table 1 Descriptive Analysis of the Demographic Factors (n=365)

Item	Variables	Frequency	Percent (%)
Gender	Male	160	43.8%
	Female	205	56.2%
Identity	Freshman	70	19.2%
	Sophomores	75	20.5%
	Juniors	85	23.3%
	Seniors	90	24.7%
	Physical education curriculum teacher	15	4.1%
	Graduated alumni	30	8.2%
Age	18-20 years old	120	32.9%
	21-23 years old	150	41.1%
	24 and older	95	26.0%
Total		365	100%

According to Table 1, participants aged 21-23 had the highest proportion, with 41.1% (150 people), followed by 18-20 years old, accounting for 32.9% (120 people). In summary, the sample was mainly students aged 21-23, reflecting that this age group is the core learning group of preschool education majors. In terms of grade distribution, junior and senior students have high participation, with teachers and alumni accounting for 4.1% and 8.2%, respectively. The overall sample is balanced, covering different grades and practical experience, and enhances the representativeness of the data.

Variables Characteristic

According to the data in Table 2 below, in terms of course management and development, the

project with the highest average value is "I think course management and development play a positive role in improving the quality of teaching.", and its value is 4.439, showing students' high recognition of the effectiveness of course management. Relatively speaking, the lowest item was "the course evaluation mechanism can fairly reflect my learning results", with an average of 4.208, indicating that students' expectations were not fully realized in the transparency and fairness of the course evaluation.

In terms of standard deviation, the standard deviation of "curriculum management can timely respond to students 'feedback on the course content" is 0.754, indicating that the views on this item are relatively concentrated, while the standard deviation of "the school can continuously optimize the course content according to the suggestions of students and teachers" is 0.742, showing the wide recognition of the school's improvement measures.

The total mean of course management and development was 4.362 and the total standard deviation was 0.766, indicating that students had high overall satisfaction with the field and believed that course management played a positive role in improving the quality of education.

Table 2 Descriptive Statistics of the Preschool Physical Education Curriculum Management and Development (Meaning is based on the Likert Scale Level of Agreement)

Variable	Mean	SD	Meaning
Curriculum management and development			
Course management can respond to students' feedback on the course content in a timely manner.	4.267	0.754	Strongly Agree
The teaching objectives are clearly set to meet the needs of preschool education.	4.382	0.765	
The course evaluation mechanism can fairly reflect my learning results.	4.208	0.780	
The school can constantly optimize the course content according to the suggestions of students and teachers.	4.421	0.742	
I think curriculum management and development have played a positive role in improving the quality of teaching.	4.439	0.771	

Table 3 Descriptive Statistics of the Sports Direction Courses

Variable	Mean	SD	Meaning
Sports direction course			
Physical education courses have helped me improve my ability in physical education teaching.	4.487	0.792	Strongly Agree
Physical education courses are rich in content, covering a variety of sports skills and game design.	4.293	0.786	
I benefited a lot from the introduction of local characteristic sports activities in the course.	4.137	0.812	
I think the theoretical knowledge of physical education courses is combined to a high degree of practice.	4.342	0.745	
My overall satisfaction with the physical education courses is high.	4.366	0.778	

As can be seen from Table 3, in the physical education course, the item with the highest average value is "the physical education course helps me improve the ability of children's physical education teaching", whose value is 4.487, showing that students generally believe that the course has a significant effect in enhancing their teaching ability. This shows that the curriculum design is suitable for practical teaching needs, and can effectively improve the students' professional quality. The relatively lowest item was "I benefited a lot from the introduction of local sports activities in the course", with an average of 4.137, suggesting that there is room for improvement in the attractiveness and practicality of this part.

In terms of standard deviation, the standard deviation of "physical education course helps me improve my ability of physical education teaching" is 0.792, indicating that there are some differences in students' feelings about this item, indicating that the cognition of teaching effect is more personalized. However, the standard deviation of "I think the high degree of theoretical knowledge and practice in physical education" was the lowest, 0.745, showing a strong consensus in this aspect.

Overall, the overall mean of the PE curriculum was 4.366 and the total standard deviation was 0.777, reflecting the positive evaluation of the course, and the curriculum effectively supported their professional development.

Table 4 Descriptive Statistics of the Learning Effectiveness of Preschool Physical Education Majors

Variable	Mean	SD	Meaning
Learning Effectiveness of Preschool Physical Education major			
The preschool education curriculum provides sufficient theoretical knowledge to support my teaching practice.	4.321	0.842	Strongly Agree
The curriculum covers all aspects of young children's development, including emotion, social interaction, and sports.	4.215	0.812	
The setting of preschool education curriculum has a reasonable logical structure and is easy to understand.	4.412	0.754	
Case analysis closely related to practical teaching is integrated into the course.	4.118	0.788	
My overall satisfaction with the preschool education courses is high.	4.475	0.765	

As can be seen from Table 4, the item with the highest mean value in the preschool course is "I have higher overall satisfaction with the preschool course", with its value of 4.475, indicating a high overall satisfaction with the course, reflecting the effectiveness of course design and implementation. Relatively speaking, the lowest item was "integrated case analysis closely related to practical teaching in the course", with an average of 4.118, which showed that students' expectations for this content were not fully met, which may affect their practical teaching application ability.

In terms of the standard deviation, the standard deviation of "the preschool education course provides sufficient theoretical knowledge to support my teaching practice" was 0.842, indicating that the views on this item are quite different, and some students may have differences in the understanding of the course content. However, the standard deviation of "the curriculum has a reasonable logical structure and is easy to understand" is 0.754, indicating that most students have a strong sense of identity to the curriculum logic.

In general, the total average of preschool education courses is 4.321, and the total standard deviation is 0.790, showing that students 'overall evaluation of the course is relatively positive, and the course has a good foundation in meeting students' learning needs.

Reliability Analysis

Table 5 Alpha Reliability Analysis Table

Variable	Cronbach's Alpha Test	Number of Questions
Curriculum management and development (CMD)	0.824	5
Sports direction course (SDC)	0.887	5
Learning Effectiveness of Preschool Physical education major (LE)	0.859	5
Total	0.856	15

According to Table 5, Cronbach's α reliability analysis indicates strong reliability for all variables. "Curriculum management and development" scored 0.824, showing good internal consistency. The PE instruction curriculum variable achieved 0.887, indicating high consistency, while the learning effect variable of preschool PE majors scored 0.859, confirming effective measurement. The overall reliability coefficient of the 15 questionnaire items is 0.856, demonstrating high reliability and consistency. These results ensure the robustness of

the measurements and strengthen the validity of the research conclusions.

Correlation Analysis

Table 6 Correlation Analysis (n=365)

		CMD	SDC	LE
CMD	Pearson correlation	1	0.653**	0.708**
	Sig.(two-tail)		0.000	0.000
SDC	Pearson correlation	0.653**	1	0.759**
	Sig.(two-tail)	0.000		0.000
LE	Pearson correlation	0.708**	0.759**	1
	Sig.(two-tail)	0.000	0.000	

*p<0.05; **p<0.01

The following is the analysis result of the correlation analysis between Table 4.8 curriculum management and development, physical education instruction courses and learning outcomes of preschool physical education majors. The following conclusions can be drawn:

H1: The CMD has a Positive Impact on the SDC

The correlation coefficient between curriculum management and development and sports guidance courses is 0.653, indicating a strong correlation between the two. The effectiveness of curriculum management may significantly affect the implementation of sports instruction curriculum.

H2: The CMD has a Positive Impact on the LE

The correlation coefficient between curriculum management and the learning effect of preschool physical education majors is 0.708, which also shows a significant positive correlation. This means that there is a close relationship between reasonable curriculum management and students' learning effectiveness.

H3: The SDC have a Positive Impact on the LE

The correlation coefficient between the physical education instruction course and the learning effect of preschool physical education majors is 0.759, indicating a strong positive correlation between the two variables. Effective and practice-oriented physical education instruction courses may have a positive impact on the learning outcomes of preschool students.

Hypothesis Test

According to the results of regression analysis, the overall performance of the model is significant, supporting hypotheses H1, H2 and H3. The specific analysis is as follows:

Hypothesis 1: The CMD has a Positive Impact on the SDC

Regression analysis shows that CMD has a significant impact on PE courses, and the standardization coefficient (Beta) is 0.857, indicating that CMD has a strong impact on PE courses. R^2 is 0.756, indicating that curriculum management can explain 75,6% of the variability of the physical education course. The F value was 196.332 and the p value was 0.000, indicating that the independent variable was statistically significant. This means that school curriculum management has a very significant positive impact on the physical education curriculum, which supports hypothesis H1.

Hypothesis 2: The CMD has a Positive Impact on the LE

In H2, the regression analysis of CMD on the LE also shows a significant influence. The normalization coefficient (Beta) is 0.705, and the R^2 is 0.654, indicating that CMD can explain 65.4% of the variability of LE. The F value of 112.501 and p value of 0.000 further confirm the significant influence of course management. This result indicates that school curriculum management not only has a positive impact on physical education courses, but also plays an important role in the learning effect of preschool physical education majors.

Hypothesis 3: The SDC have a Positive Impact on the LE

For H3, the analysis results show that the SPD has a significant impact on the LE. The normalization coefficient (Beta) is 0.785, and the R^2 is 0.603, indicating that the SPD can explain 60.3% of the variability of the LE. An F value of 130.601 and a p value of 0.000 indicate that the effect is statistically significant, further supporting hypothesis H3. The physical education instruction course has a positive and significant effect on the learning effect of preschool physical education majors.

Conclusion

In this study, 365 valid questionnaires were collected through random sampling in West Yunnan Normal College of Science and Technology, aiming to explore the relationship between curriculum management development (CMD), physical instruction curriculum (SDC) and learning effect (LE) of preschool physical education major. SPSS software was used to perform descriptive analysis, reliability analysis, correlation analysis and regression analysis on the data to verify hypotheses H1 (the impact of CMD on SDC), H2 (the impact of CMD on LE) and H3 (the impact of SDC on LE). The results of this study will provide important empirical support for optimizing curriculum management strategies and improving preschool learning outcomes.

Discussion

The School Curriculum Management has a Positive Impact on the Sport Direction Courses

Management of curricula is an important tool in influencing the quality and structure of the sports direction courses offered. It also makes sure that the course is developed in an organized, purposeful manner extending to fit the needs of students. It promotes the relevance of the curriculum by defining its objectives and outcomes and stimulates the students to participate. In addition, it facilitates the allocation of resources, which is the provision of teacher training and professional development, which has a direct impact on the quality of teaching. Teamwork amongst teachers is also enhanced which results in sharing of best practices and delivery of courses in general. In sum, curriculum management leads to both curriculum structure and competence of teaching physical education.

The School Curriculum Management has a Positive Impact on the Learning Effectiveness of Preschool Physical Education Majors

In early childhood education, well-organized curriculum planning increases continuity and development in education. It assists in developing a powerful body of knowledge, increases the involvement and interest of the students. One of the ways in which the teachers benefit is the presence of constant training and a form of feedback which enhances this teaching quality and their association with the students. Moreover, the curriculum management offers the means to evaluate the progress of learning, thus making necessary corrections. Together, these factors can assure the comprehensive growth of students and have a substantial contribution to the student growth in a crucial period of education.

The Sports Direction Courses have a Positive Impact on the Learning Effectiveness of Preschool Physical Education Majors

Courses in sports direction comprise practical experiences that develop practical expertise and theory. Such courses enhance physical fitness, self-confidence, and group cooperation- major attributes possessed by future teachers. They as well promote psychological and social development and abilities by actively engaging themselves in sports activities. Also, the wide-ranging material in such courses builds creativity and problem-solving skills. Finally, they expose students to real world teaching conditions and therefore their significance in making quality and all rounded preschool teachers.

Recommendations

This study has carried on the in-depth analysis of the curriculum management development, the physical education instruction curriculum and the learning effect of the preschool physical education major, and reached an important conclusion. Based on the research results, the following recommendations are made to further improve the quality of education and the learning outcomes of students.

Strengthening Curriculum Management, schools should establish a systematic curriculum framework that aligns objectives, content, teaching methods, and assessment. Regular curriculum evaluations and a management committee can ensure the curriculum meets educational goals and fosters interdisciplinary collaboration. Teacher Professional Development, schools should offer regular training and development opportunities to improve teaching skills. Encouraging teacher collaboration and establishing an assessment and incentive mechanism will boost teacher motivation and creativity, enhancing student outcomes.

Enhancing Course Content, to improve learning, courses should be practical and engaging

by incorporating varied teaching methods like games and project-based learning. Teachers should continuously adjust strategies based on student feedback and integrate practical activities for real-world application.

Family and Community Participation, schools should foster strong ties with families and communities, encouraging parent involvement in children's education through activities like family sports events. Collaborations with community organizations can provide students with valuable learning opportunities.

Data Collection and Analysis, schools should implement an information management system to track and analyze student learning data. This helps identify areas for improvement, personalize education, and provide timely support to students based on their needs.

Research Contribution

This study has made an in-depth discussion on the relationship between curriculum management, physical education instruction curriculum, and the learning effect of preschool physical education majors, and it has important theoretical and practical contributions.

This work contributes to the research substance of Theoretical benefits contributions. 1) Enriching Educational Theories, it provides new insights into preschool education management, expanding research on curriculum design and implementation. 2) Promoting Interdisciplinary Research, it fosters collaboration between physical education and preschool education, encouraging academic exchanges between these fields.

The study's findings give significant information for educational practice.

The Individual Level course provides students with specialized physical education courses to enhance their professional abilities, health awareness, and competitiveness in the preschool education field. For educators can use this information to adapt their teaching strategies, ensuring that physical education is both engaging and effective for young learners.

Curriculum designers may choose to create interdisciplinary courses that incorporate physical education with other disciplines of study, reflecting the evolving nature of holistic education. Furthermore, it contends that curriculum management must be adaptive to student needs, which may encourage curriculum designers to produce more flexible, customizable curriculum models. This could enable for modifications based on student feedback, educational trends, and the specific needs of different educational settings.

The study encourages curriculum designers to look into new teaching methods and digital resources for teaching physical education. Preschool teachers can create more fascinating and accessible educational experiences for student, especially in remote or underserved areas, by using technology such as virtual classrooms or interactive learning platforms.

At the organizational level, it helps West Yunnan Science and Technology improve physical education curriculum management, teaching quality, and educational competitiveness.

The study offers useful insights for improving physical education standards and teaching skills in the preschool education business.

Policy Making it helps policymakers design appropriate physical education curriculum standards and management strategies to assist preschool education changes.

Sustainable development goals this research helps to achieve the SDGs by encouraging outstanding health, well-being, and quality education.

Further Research

Although this study provides an in-depth look at the curriculum management and development, the Sport direction courses, and the learning outcomes of pre-primary physical education majors, there is still room for further research to more fully understand the relationships between these variables and their applications in different educational contexts. In conclusion, while this study offers empirical support for the relationships among curriculum management, physical education instruction, and preschool learning outcomes, further research is necessary to deepen our understanding of these areas. By expanding the sample scope, exploring the effects of curriculum management across different disciplines, adopting longitudinal study designs, utilizing advanced data

analysis techniques, and incorporating multi-method approaches, future research can more fully reveal the complexities of educational management and promote the continuous advancement of educational practice. Such research not only contributes to theoretical development but also provides practical guidance for educators, enhancing student learning outcomes and overall educational quality.

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