

Implementation of the Physical Education Curriculum and Physical Literacy of the College Students in China

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ABSTRACT

With the rapid economic development and improved living standards in China, health and physical activity have gained increasing importance. Physical Education (PE) courses, as a vital component of higher education, play a crucial role in cultivating well-rounded talents with robust physical health. However, the current implementation of PE curricula faces numerous challenges, including inadequate university emphasis, imperfect facilities, weak faculty strength, monotonous teaching content, and outdated teaching methods, resulting in unsatisfactory physical literacy outcomes among college students. Meanwhile, factors such as changing lifestyles, academic and employment pressures, and misconceptions about sports further hinder the improvement of physical literacy. This study aims to explore the relationship between PE curriculum implementation and physical literacy cultivation among college students, propose targeted improvement suggestions based on assessments and analyses of the current status, and delve into the cultivation mechanisms and development patterns to optimize PE courses and enhance college students' physical literacy. Theoretically, this research will enrich the theoretical framework of physical education; practically, it will promote the all-round development of college students, elevate their overall quality and competitiveness, and contribute to China's modernization drive.

KEYWORDS

Physical Education Curriculum Implementation; Physical Literacy; Curriculum Standards; Teaching Objectives; Teaching Resources.

1. RELATED LITERATURE REVIEW

1.1. Current Status of PE Curriculum Implementation in Colleges and Universities

In recent years, scholars have conducted in-depth research on the current status of PE curriculum implementation in colleges and universities, yielding fruitful results. Wu Jinzhang (2003) comprehensively analyzed the implementation status of PE curricula in Fujian and ## regions, pointing out issues such as insufficient faculty and outdated teaching facilities, and suggested strengthening faculty training and optimizing resource allocation. Tong Liping (2006) examined the implementation of the "National Guidelines for College Physical Education Courses," revealing inadequate understanding and execution, and advised enhancing publicity and training as well as perfecting the evaluation system. Zhu Anfeng (2014) used Chaohu College as a case study to discuss the implementation status of sports dance courses in regular colleges and universities, proposing optimization of curriculum design and reinforcement of faculty construction. Liu Yang and Xu Rui (2019) conducted an investigation and optimization study of sports dance courses in Hainan colleges and universities, suggesting enriching teaching content and innovating teaching methods. Li Xueping and An Hong (2022) analyzed the current status of ideological and political construction in college

PE courses from the perspective of integrating PE with ideological and political education, proposing enhancing publicity and education and improving implementation pathways.

1.2. Cultivation of College Students' Physical Literacy

Scholars have also extensively discussed the cultivation of college students' physical literacy. Song Wei (2021) noted that physical literacy encompasses sports spirit, exercise habits, and healthy behaviors, arguing that colleges and universities should attach great importance to its cultivation among students. Wan Guohua et al. (2010) examined the current status of college students' physical literacy and proposed measures to strengthen sports promotion and optimize curriculum settings. Gao Caiqin et al. (2004) emphasized the importance of optimizing PE curricula and strengthening faculty construction. Zeng Xusheng et al. (2005) explored the construction of an evaluation index system for college students' physical literacy. Yu Wenbin (2008) highlighted the relationship between physical literacy and career development. Zhai Yifei (2023) put forward specific pathways to enhance college students' physical literacy and motor skills. He Qiuju (2019) developed a test scale for college students' physical literacy, providing an effective tool for scientific evaluation.

1.3. Relationship between PE Curriculum Implementation and Physical Literacy Cultivation

Scholars have also conducted in-depth studies on the relationship between PE curriculum implementation and physical literacy cultivation. Yang Daofei and Zhang Lipeng (2016) pointed out that PE courses are an important pathway for cultivating physical literacy. He Yizan (2023) analyzed the relationship between PE curriculum goals and physical literacy, arguing that PE curriculum goals should prioritize the comprehensiveness, integrity, and continuity of students' all-round development. Hao Xiaocen and Hou Jufang (2017) used small-class teaching as an example to explore the relationship between PE curriculum implementation and physical literacy. Kong Chong and Ping Jie (2019) emphasized the importance of reconstructing PE curriculum implementation concepts with core literacy as the carrier. Chen Huiying (2023) revealed the close relationship between PE curriculum implementation and physical literacy cultivation among students by comparing Australian PE curriculum standards with physical literacy frameworks. Yin Zhihua (2021) explored the relationship between sports ethics and sports morality in the context of core literacy. Yang Boming (2020) analyzed the relationship between physical health core literacy and classroom teaching objectives and proposed suggestions for objective design.

2. SUMMARY OF FINDINGS

2.1. Respondent Profile

In terms of age, the majority of respondents (80%) are between 18 to 23 years old, indicating a predominantly young population in the sample. The distribution across other age groups is relatively small, with very few respondents being under 18 or over 28 years old indicating that any findings or conclusions drawn from the study may be more applicable to this age group. It's important to consider how findings might generalize to older or younger age groups, as they are underrepresented in the sample.

In terms of sex, there is a notable majority of male respondents (67%) compared to female respondents (33%), suggesting a gender imbalance in the sample. With 67% of respondents being male and 33% female, there could be gender-related differences in responses or perspectives that should be considered in the analysis. Ensuring gender balance in future studies could provide a more comprehensive understanding of the topic.

Table 1. Respondent Profile

Variable	Categories	Frequency	Percentage
Age	Less than 18 years-old	21	2
	18 to 23 years-old	795	80
	24 to 28 years-old	174	17
	More than 28 years-old	10	1
	Total	1,000	100
Sex	Male	670	67
	Female	330	33
	Total	1,000	100
Grade Level	First	840	84
	Second	144	14
	Third	9	0.9
	Fourth	5	0.5
	Others	2	0.2
	Total	1,000	100
Major	Engineering	133	13
	Computer Science and Information Technology	158	16
	Business and finance	184	18
	Water conservation	394	39
	Environment Engineering	38	4
	Urban Development	84	8
	Others	9	1
	Total	1,000	100

In terms of grade level, the majority of respondents (84%) are in their first year, indicating a sample predominantly composed of freshmen. There are very few respondents in higher grade levels, with third and fourth-year students comprising less than 1% each.

The overwhelming majority (84%) of respondents are in their first year of study, potentially influencing their level of experience and knowledge on certain topics compared to higher-grade levels. Future studies may benefit from including more upperclassmen to capture diverse perspectives across different stages of academic progression.

In terms of major, the largest group of respondents are majoring in Water Conservation (39%), followed by Business and Finance (18%) and Computer Science and Information Technology (16%). Engineering (13%), Urban Development (8%), and Environmental Engineering (4%) also have notable representation, while other majors make up a smaller proportion (1%). This implied that the distribution of majors shows a significant representation from fields like Water Conservation, Business and Finance, and Computer Science, while others such as Engineering and Environmental Engineering have smaller but still noteworthy numbers. Researchers should consider how these

different majors might influence responses to study variables and interpretations of findings. Including more diverse majors could provide a broader perspective on the research topic.

2.2. Respondents' Evaluation of PE Curriculum Implementation

Curriculum Standards: Well-established curriculum standards are highly correlated with improved physical fitness among students, indicating the crucial role of clear standards in curriculum design.

Teaching Content: The richness and relevance of teaching content positively correlate with enhanced physical literacy outcomes, emphasizing the importance of engaging teaching materials.

Teaching Objectives: Clear and achievable teaching objectives significantly promote students' physical literacy development, highlighting the impact of goal-oriented educational strategies.

Teaching Resources: Sufficient and high-quality teaching resources positively influence students' physical literacy, emphasizing the necessity of access to effective educational materials.

2.3. Differences in Understanding of PE Curriculum Implementation

Age: Age differences impact respondents' perceptions and utilization of curriculum standards and resources.

Gender: Male and female respondents exhibit disparities in curriculum implementation, affecting participation levels and perceived value of physical literacy programs.

Grade: Students at different academic levels demonstrate varying degrees of interaction and effectiveness in utilizing PE curriculum content.

Major: Significant implementation differences exist across majors, influencing the integration and perception of curriculum standards and teaching strategies within different disciplines.

2.4. Respondents' Self-Assessment of Physical Fitness

Motivation: Motivation levels for physical literacy activities vary among respondents, influenced by factors such as personal interests and perceived benefits.

Confidence: Respondents vary in their confidence levels in physical literacy skills, affecting their willingness to participate in sports activities and pursue fitness goals.

Physical Ability: Self-perceived physical abilities differ, reflecting individuals' assessments of their ability to perform and improve physical tasks.

Knowledge: Understanding of physical literacy concepts and principles varies, influencing how respondents approach physical education and health-related decisions.

Value Understanding: Respondents differ in their recognition of the importance and relevance of physical literacy, affecting their attitudes and commitments to physical health.

Engagement: Varying degrees of engagement in physical literacy activities indicate diverse interests and participation levels in different aspects of physical education.

2.5. Respondents' Self-Assessment of Physical Fitness

Age: Age-related differences affect respondents' perceptions and evaluations of their physical literacy levels, influencing self-assessment results and priorities in physical education.

Gender: Gender differences influence self-assessments of physical literacy, affecting perceived strengths and areas for improvement in physical health and health practices.

Grade: Academic progress impacts self-assessment results, reflecting evolving skills, attitudes, and behaviors towards physical activity and health.

Major: Disparities in self-assessments exist across majors, highlighting different perspectives and priorities in integrating physical literacy into academic and professional contexts.

2.6. Respondents' Self-Assessment of Physical Fitness

The study found a close positive correlation between the effective implementation of PE curricula (including rigorous standards, engaging content, clear objectives, and sufficient resources) and improved physical literacy among students. These findings underscore the crucial role of curriculum quality and educational strategies in promoting holistic physical development and health outcomes among college students.

2.7. Significant Relationship between the Implementation of Physical Education Curriculum and the Students' Physical Literacy

Table 2. Significant difference analysis

Implementation of Physical education curriculum and the student's physical literacy		R Value	P Value	Interpretation	Decision
Curriculum standards	Students' physical literacy	0.832	0.0001	Reject hypothesis	Significant/ Very low Positive correlation
Teaching content	Students' physical literacy	0.859	0.0001	Reject hypothesis	Significant/ Very low Positive correlation
Teaching objectives	Students' physical literacy	0.873	0.0001	Reject hypothesis	Significant/ Very low Positive correlation
Teaching resources	Students' physical literacy	0.862	0.0001	Reject hypothesis	Significant/ Very low Positive correlation

Correlational at the level of 0.05(two-tailed) If p-value > α : accept the null hypothesis (H0)/Not Significant, If p-value < α : reject the null hypothesis(H0)/Significant

0.90-1.00 or- 0.90- -1.00 Very high positive (or negative) correlation

0.70-0.90 or -0.70- -0.90 High positive (or negative) correlation

0.50-0.70 or- 0.50- -0.70 Moderate positive (or negative) correlation

0.30-0.50 or -0.30- -0.50 Low positive (or negative) correlation

0.00-0.30 or 0.00- -0.30 Very low positive (or negative) correlation/Negligible correlation

The relationship between the implementation of the physical education curriculum and students' physical literacy highlights significant positive impacts across various aspects of curriculum implementation—curriculum standards, teaching content, teaching objectives, and teaching resources—demonstrating strong correlations with enhanced physical literacy outcomes (Li et al., 2018; Chen & Wang, 2017).

Curriculum standards exhibit a robust positive correlation with students' physical literacy, evidenced by an r -value of 0.832 and a significant p -value of 0.0001, indicating that improvements in standards lead to substantial increases in physical literacy (Zhang et al., 2019; Wu & Liu, 2016).

Similarly, teaching content shows a highly positive correlation with physical literacy ($r = 0.859$, $p < 0.0001$), emphasizing the critical role of engaging and relevant content in enhancing students' physical literacy levels (Zhou et al., 2018; Huang & Zhang, 2020).

Clear and attainable teaching objectives are strongly correlated with physical literacy ($r = 0.873$, $p < 0.0001$), underlining their importance in guiding effective physical education practices and student development (Guo & Xu, 2017).

Moreover, the availability and quality of teaching resources demonstrate a significant positive correlation with physical literacy ($r = 0.862$, $p < 0.0001$), underscoring the necessity of adequate resources for comprehensive physical education programs (Yang & Li, 2017; Guo & Xu, 2017).

In conclusion, the robust implementation of a comprehensive physical education curriculum, including well-defined standards, relevant content, clear objectives, and sufficient resources, significantly enhances students' physical literacy. Educational institutions should prioritize these elements to optimize physical education outcomes and foster holistic development among students across various academic contexts (Li et al., 2018; Chen & Wang, 2017; Zhang et al., 2019; Wu & Liu, 2016; Zhou et al., 2018; Huang & Zhang, 2020; Guo & Xu, 2017; Yang & Li, 2017).

3. CONCLUSION

Respondents' demographic profiles, including age, gender, grade, and major, reflect the diversity of the study sample, crucial for understanding how these factors influence perceptions and outcomes related to physical literacy and curriculum implementation in higher education. This emphasizes the importance of inclusive educational practices that cater to different demographic characteristics to ensure equitable access to PE curricula and effective participation.

Respondents' evaluations of PE curriculum implementation indicate that curriculum standards, content, objectives, and resources significantly impact their physical literacy development. Effective curriculum design and educational strategies are vital for enhancing students' enthusiasm and proficiency in participating in sports activities. This underscores the need for continuous assessment and improvement of curriculum frameworks to meet evolving educational standards and promote students' all-round development.

Differences in PE curriculum implementation across respondents' age, gender, grade, and major highlight the need for tailored approaches to cater to the diverse needs and preferences of different population groups. Educational institutions should consider personalized learning pathways and targeted interventions to optimize physical literacy outcomes among diverse student cohorts.

Respondents' self-assessments of physical literacy in terms of motivation, confidence, physical ability, knowledge, value understanding, and engagement underscore the significance of individual perspectives and experiences within the context of physical education and health promotion. Educators and policymakers should prioritize fostering positive self-perceptions, creating supportive environments, and enhancing students' confidence and motivation to develop lifelong exercise habits.

Significant differences in respondents' physical literacy assessments based on demographic factors (age, gender, grade, major) emphasize the role of personal attributes and educational backgrounds in shaping perceptions and behaviors towards physical activity and health. Addressing these differences requires targeted strategies that consider cultural, social, and educational contexts to promote inclusive and effective PE programs.

The close positive correlation between PE curriculum implementation and physical literacy underscores the importance of well-designed curriculum standards, engaging teaching content, clear objectives, and sufficient resources in promoting holistic physical development and health outcomes among college students. This highlights the potential for educational institutions to enhance physical literacy by strategic investments in curriculum development, teacher training, and infrastructure, ultimately fostering healthier and more active student populations.

4. RECOMMENDATIONS

Enhancing physical literacy through effective PE curriculum implementation in higher education is crucial for promoting students' holistic development. Based on the conclusions drawn from the study, a series of recommendations are proposed to improve the quality and impact of PE curricula. These recommendations encompass aspects ranging from curriculum design and educator training to community engagement and policy advocacy. By implementing these strategies, educational institutions can create supportive environments that foster lifelong physical health, equip students with essential skills, and contribute to a healthier society as a whole.

4.1. Develop Flexible Curriculum Frameworks

Adapt curriculum frameworks to cater to different student contexts, including age, gender, grade, and major, ensuring PE curricula are inclusive and meet diverse interests and abilities, thereby enhancing overall participation and engagement.

4.2. Improve Curriculum Standards

Continuously update and refine curriculum standards to align with current educational guidelines and health recommendations, emphasizing integrated standards that blend theoretical knowledge and practical skills to cultivate comprehensive physical literacy.

4.3. Provide Ongoing Professional Development for PE Teachers

Offer PE teachers sustained professional development opportunities to enhance their teaching abilities and integrate innovative instructional methods, including motivational teaching strategies, content adaptation for diverse learning styles, and technology-enhanced learning experiences.

4.4. Foster Interdisciplinary Collaboration

Promote collaboration between PE departments and other disciplines (e.g., health sciences, psychology) to integrate comprehensive health education into broader curricula, enhancing students' multidimensional understanding of physical health.

4.5. Create Supportive Learning Environments

Foster positive self-perceptions and enthusiasm for physical activities by providing accessible facilities, nurturing a culture of inclusivity and respect, and offering extracurricular opportunities that reinforce healthy lifestyle choices.

4.6. Implement Regular Evaluations and Solicit Student Feedback

Gather student feedback on their PE curriculum experiences through regular evaluations to improve curriculum settings, meet specific needs, and enhance overall curriculum effectiveness.

4.7. Collaborate with Local Communities and Sports Organizations

Establish partnerships with local communities, sports organizations, and health agencies to provide students with opportunities to apply their physical literacy skills in practical settings and collaborate with external stakeholders to strengthen experiential learning and enhance the relevance of PE in real-world contexts.

4.8. Invest in Research Programs

Further explore the impact of demographic factors on physical literacy outcomes and curriculum effectiveness through research programs, leveraging evidence-based findings to inform policy decisions, curriculum revisions, and strategic planning for future educational initiatives.

4.9. Advocate for Prioritized PE and Health Promotion Policies

Collaborate with policymakers to advocate for PE and health promotion policies that receive preferential consideration in higher education institutions, securing adequate resources, funding, and institutional support for comprehensive PE programs.

4.10. Incorporate Long-Term Health and Wellness Plans

Embed long-term health and wellness plans into curricula, emphasizing the importance of maintaining physical activity and healthy lifestyles post-graduation, and encouraging lifelong learning and engagement in physical activities to promote sustained health among students and alumni.

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