



Construction of an Evaluation Index System for The Implementation of The New Curriculum Standards (2022 Edition) Of Physical Education and Health Curriculum for Middle Schools in Guangdong Province

Zhang Xin¹ and Wanit Nirantranon ²

¹ Faculty of Sports Science and Technology Bangkokthonburi University, Thailand

² Faculty of Sports Science and Technology Bangkokthonburi University, Thailand

¹ E-mail: 673543522@qq.com, ORCID ID: <https://orcid.org/0009-0008-0087-7642>

² E-mail: dang_wanit@yahoo.com, ORCID ID: <https://orcid.org/0009-0001-8927-8337>

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Abstract

Background and Aim: As a trailblazer in China's reform and development, Guangdong Province conducted research on the quality evaluation index system for implementing PE and health curriculum during the early stages of new curriculum standards implementation, which holds significant practical implications for advancing curriculum reform and development. The aim of this study is twofold: (1) To establish a comprehensive quality evaluation index system for the implementation of the new curriculum standard (2022 edition) for PE and health in middle schools in Guangdong Province; (2) To develop a high-quality implementation and development strategy for the new curriculum standard of PE and health.

Materials and Methods: The primary research tool employed in this study is an expert questionnaire survey. The subjects of the study were selected using a stratified sampling method, which included experts in school PE curriculum and teaching theory, teaching and research personnel, as well as school PE team leaders. Drawing upon qualitative interview results, CIPP model theory, and relevant literature policies, a preliminary evaluation index system was established. This evaluation index system was constructed using the Delphi method and encompasses summarized content along with development suggestions.

Results: The study presents the construction of a quality evaluation system for the implementation of PE and health curriculum in middle schools in Guangdong Province, consisting of four primary indicators, twelve secondary indicators, and forty-seven tertiary indicators. Additionally, it reveals that under the new curriculum standards for the 2022 edition, the macro-level evaluation system for assessing the implementation quality encompasses four aspects: curriculum background, resources, implementation process, and outcomes.

Conclusion: The quality evaluation index system for the implementation of PE and health curriculum in middle schools in Guangdong Province is both reasonable and feasible, making it an effective tool for managing and evaluating such curricula. Furthermore, this system can serve as a valuable reference point for future curriculum reform and development.

Keywords: Physical Education and Health Curriculum; New Curriculum Standards (2022 Edition); Evaluation Index System.

Introduction

On April 21, 2022, the Ministry of Education of China issued the Curriculum Scheme and Curriculum Standards for Compulsory Education (2022 Edition) (hereinafter referred to as the "New Curriculum 2022") (Ministry of Education of the People's Republic of China, 2022), which defined the newly revised curriculum scheme for the compulsory educational stage (primary and junior high schools) and the curriculum standards for 16 subjects, including Chinese, mathematics, sports, and health. The curriculum of "Physical Education and Health" accounts for 10% -11%, second only to Chinese and mathematics, and has become the third most important subject in primary and middle school. This is another comprehensive improvement and revision of the new curriculum standards by the Ministry of Education after 2011 and will be implemented in September 2022. The content of the new curriculum 2022 for physical education and health has been expanded: the "Special Sports Skills" section includes six major categories of sports, namely athletics, ball games, gymnastics, water or ice and snow, traditional Chinese sports, and emerging sports. Curriculum plan changes: improved training objectives, optimized curriculum offerings, and refined implementation requirements; Changes in curriculum standards: Strengthening the guidance of curriculum education; Optimized the curriculum content structure; Developed academic quality standards; Enhanced guidance; Strengthened the connection between learning stages. The curriculum standards are the "constitution" of school education and teaching, the blueprint for education, and have standards and rules. (Duan, B., Wang, X., Gao, L., 2022)



As the pioneer of China's reform and development, Guangdong Province is a strong province and a big province in sports. The development level of school sports and High-performance sports are at the forefront of the country, but there is still a gap between them. The scientific, innovative, and forward-looking research in the field of physical education and health curriculum reform and promotion in Guangdong Province has not formed an advantage. This study focuses on promoting the development of physical education and health curriculums in high schools in Guangdong Province. (Peng, F., Yuan, W., Wu, Y, L.,2020)

Against the backdrop of the new curriculum standard, this study aims to assess the implementation quality of physical education and health curriculum. The construction of evaluation index content in this research is primarily based on the content outlined in the new curriculum standard (2022 edition). The revision group for compulsory education's physical education and health curriculum standards elaborated on the rationale behind revising these standards, focusing on fulfilling the fundamental task of cultivating morality and educating individuals, prioritizing a 'health first' educational concept, achieving disciplinary education objectives through core literacy, and addressing inherent challenges within physical education and health disciplines. This paper explores the essence of core qualities that students should develop through physical education and health curricula, as well as delves into the logic and characteristics of course objectives and contents. Additionally, it provides insights into potential key challenges encountered during implementation related to creating 'application situations,' assessing academic quality, and designing comprehensive units (Compulsory education physical education and health curriculum standard 2022 edition,2022:74-80).

The related literature research on the new curriculum standard (2022 edition) primarily focuses on Ji Liu's comprehensive and in-depth elaboration of the fundamental principles and content of the new curriculum standards, encompassing aspects such as curriculum nature, concept, core competencies, objectives, content, academic quality, and implementation (Ji Liu, 2022: 42(05), 3-17+67). In another study by Liu, J. (2022) that delves into the key points and major changes in the new curriculum standard (2022), it is argued that "The key points mainly include eight aspects like core literacy, interdisciplinary theme learning, and academic quality; while significant changes are observed in incorporating concepts of 'church', diligent practice, constant competition,' altering the goal orientation of core literacy as well as presenting a more systematic and specific structure for the curriculum content" (Ji Liu, 2022: 42(05), 54-59). To effectively implement educational concepts and specific requirements outlined in the new curriculum standard (2022), some scholars have focused on exploring specific paths and strategies for implementation.

In summary, taking the promulgation and implementation of the "New Curriculum Standard 2022" as an opportunity, we will carry out research on the implementation of the "New Curriculum Standard 2022" in Guangdong Province's middle school physical education and health curriculum. Based on the degree of implementation achievement, we will study and construct a quality evaluation index system for the implementation of the "New Curriculum Standard 2022" in physical education and health curriculum, to promote the reform of middle school physical education and health curriculum in Guangdong Province, improve the management mode of middle school physical education in Guangdong Province, and promote the high-quality development of compulsory education.

Objectives

1. To establish a comprehensive quality evaluation index system for the implementation of the new curriculum standard (2022 edition) for PE and health in middle schools in Guangdong Province;
2. To determine the weight of the evaluation index system.
3. To develop a high-quality implementation and development strategy for the new curriculum standard of PE and health.

Literature Review

1. Research on the Concept and Positioning of Curriculum Quality Assessment

From the end of the 19th century to the 1930s, quality evaluation in the field of education was equivalent to evaluation or measurement. After the 1930s, Taylor conducted systematic research on "curriculum and evaluation" for eight years, extending the evaluation of the teaching field to the level



of overall quality evaluation (Liu Jiamei, 2018). Currently, there are two types of curriculum quality assessment frameworks commonly used abroad, one is general and the other is subject-specific. Representatives of general-purpose assessment frameworks include the FFT framework (Framework for Teaching) and CLASS (Classroom Assessment Scoring System). Specific subject-based assessment framework representatives include the MQI framework (Mathematical Quality of Instruction) and the PLA-TO framework (Protocol for Language Arts Teaching Observation). Whether it is general-purpose or subject-specific, they all focus on the classroom environment, teaching support, curriculum content, teacher-student interaction, and other dimensions (Wang Yuan, 2020). To drive a research institution towards excellence, it is necessary to feed back the execution through the evaluation of the teaching quality of the curriculums (Seraj, S.A., 2023). Żyluk, A., et al. (2020) investigated the curriculum, quality, and Completion assessment feedback and concluded that students had high expectations only for the four-year university surgery curriculum and the results of that curriculum, which may have implications for revisions to the curriculum and methods of teaching undergraduates in surgery. Therefore, further strengthening the quality of theoretical curriculums and effective evaluation of follow-up curriculums are the key points at present.

Ehsan, P., et al (2015) and others found that Iran lacked the link of curriculums in higher education, or paid little attention to the quality of curriculums, which led to many problems faced by Iran's Islamic compulsory universities and educational institutions. Therefore, they evaluated the quality of the higher education curriculums of Bouari Sina University and believed that curriculums, as the core of the higher education system, played an important role in the realization of higher education goals, and the evaluation of the internal quality of the curriculums will greatly improve the content of the curriculums.

2. Related Research on "Curriculum Quality Evaluation"

For the quality evaluation of online curriculums, Shi Yang et al. constructed a MOOC curriculum evaluation index system based on six aspects: curriculum content, teaching resources, teaching effects, technical specifications, teaching assessment, and learning effects, and aimed at the ambiguity and uncertainty in MOOC curriculum evaluation. Randomness, combining ANP-DEMATEL and cloud model to propose a MOOC curriculum evaluation method, which makes the comprehensive evaluation results more reasonable and practical, and helps to accurately evaluate and compare the quality of different MOOC curriculums (Yang, S., et al. 2021). Yin Jia conducted an in-depth analysis of online curriculum quality assessment methods, standards, and tools at home and abroad. Based on the current demand situation, he built an online curriculum assessment model that integrates demand—the "Learning Primary Interface Model" (Learning Primary Interface, LPI), based on this model Developed online curriculum evaluation metrics and tools. And applied this tool to evaluate the curriculum of the Lean Six Sigma project of the Graduate School of Engineering, N University, and put forward relevant curriculum improvement suggestions (Yin Jia, 2018). Regarding the teaching of school curriculums, Wang Yuan believes that the quality evaluation of education curriculums for the elderly should analyze whether the curriculums have rich and high-quality curriculum content, professional and good teachers, and a harmonious and warm educational environment, and at the same time pay attention to the education of the whole-body development of the curriculums for the elderly Effect, that is, whether the curriculum has achieved "what kind of elderly people are cultivated" and whether "the proper meaning of education for the elderly " has been completed. Through the preliminary exploration of the construction of the quality evaluation framework of geriatric education curriculums, it can promote the improvement of the quality of geriatric education curriculums, and promote the construction of active aging and learning society (Wang Yuan, 2020). Xiao Qianhua and others believe that the evaluation of postgraduate curriculum quality is mainly to evaluate the construction and implementation of the curriculum, the teaching, and effect of the curriculum, etc. The factors that affect the quality of the curriculum mainly include the teaching staff, teaching conditions, teaching quality, and management level. According to the above influencing factors Establish a scientific and reasonable curriculum quality evaluation index system (Xiao Qianhua, 2021).

3. Research on Physical Education and Health Curriculum Standards



Yu Sumei systematically analyzed the new changes in the 2022 curriculum standards from the perspective of improving the development speed and quality of physical education teachers. Her research suggested that teachers should grasp the new requirements, new challenges, and new classrooms to achieve rapid and high-quality development, and truly implement the 2022 curriculum standard. The curriculum standard is detailed, implemented, and well-implemented (Yu Sumei, 2022(17), 25-29). Wang Xiaozan (2022) analyzed the curriculum content of the new curriculum standard (2022) from three aspects: design ideas, connotation and value, and characteristics. Only the value contained in the content structure of the sports and health curriculums of the times can promote the continuous release of the educational effectiveness of the sports and health curriculums" (Wang To better implement and implement the educational philosophy and specific requirements of the new curriculum standard (2022), some scholars focus on specific path exploration and implementation strategies. Combining the 2022 version of the curriculum standard and physical education practice, Chai Jiao et al. aimed to improve the fun of sports for young people, sorted out relevant research, and put forward effective improvement strategies on this basis. Their research believes that in the process of education and teaching, it is necessary to create a relaxed and happy teaching Environment, set learning goals reasonably, pay attention to individual differences of students, and give full play to the active role of peers and teachers can help students form lasting sports fun (Cai Jiao, etc., 2022, 41(05), 35-41.).

Conceptual Framework

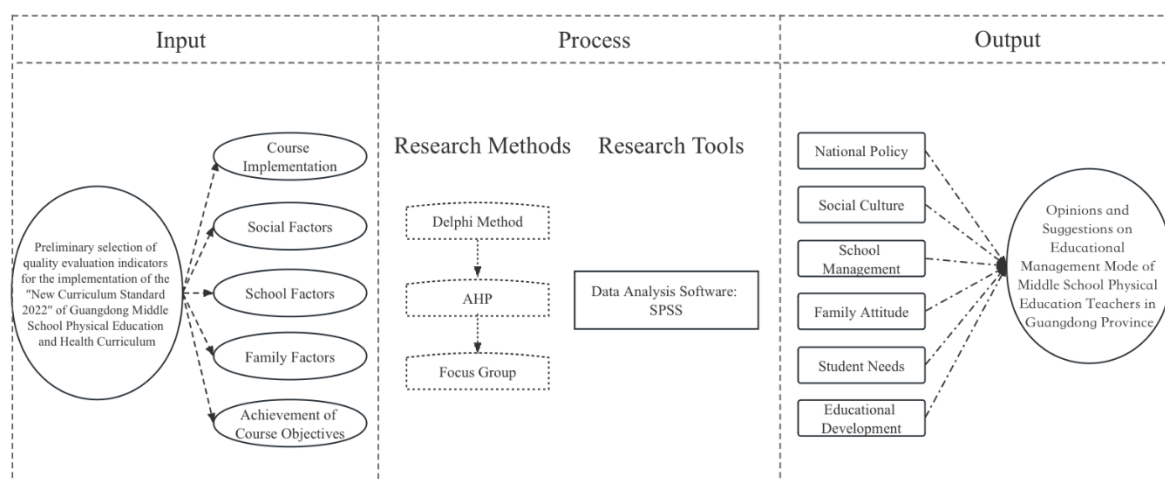


Figure 1 Conceptual Framework

Methodology

This was research and development research. The total number of investigation experts was 21, which is divided into two groups: the first group is composed of 18 Delphi method experts; The second group consists of six Focus group interview experts: (1) Established a primary evaluation index system based on qualitative interview results, CIPP model theory and relevant literature policies; (2) Determined evaluation indexes through two rounds of expert screening and revision; (3) Used Analytic Hierarchy Process (AHP) to calculate the weights of indexes at all levels, and ultimately establish the ultimate evaluation index system; (4) Through the Focus group interview method, verify the rationality of the curriculum implementation quality evaluation index system.

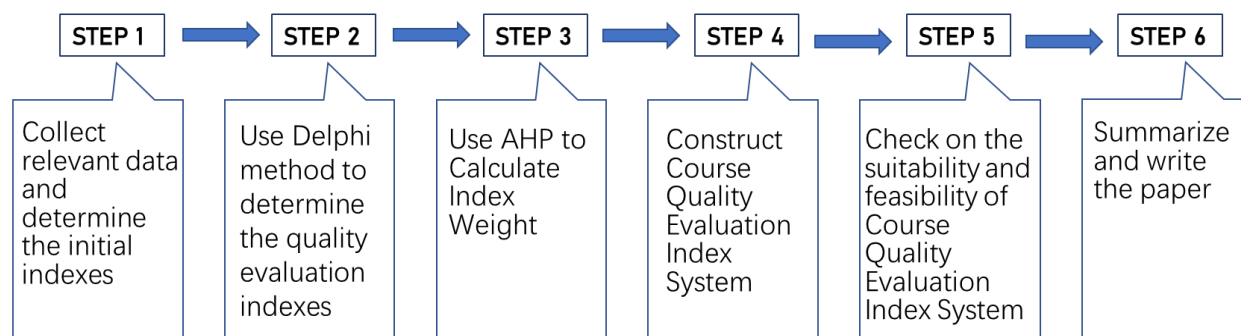


Figure 2: Research Process Framework

To construct initial indexes for implementation quality assessment, based on the content of the "New Curriculum Standard 2022 Edition", refer to relevant policy documents, collect suggestions on the composition of indexes through expert interviews, and then classify the implementation quality evaluation indexes, and construct the initial index system for the implementation quality evaluation of the new curriculum standard.

The Delphi method was used to screen 18 experts for three rounds of expert questionnaires to form a consistent recognition of the implementation quality evaluation indexes and determine the index system. The weight of each index of the first level, second level, and third level in the index system is calculated by using the analytic hierarchy process, and the implementation quality evaluation scale is established according to the calculated index weights. Using the focus group interview method to test and demonstrate the implementation quality evaluation index system.

Results

By analyzing relevant literature and policy documents, consulting experts' suggestions, and combining with the CIPP evaluation theory model, this study preliminarily established the physical education and health curriculum quality evaluation index system in Guangdong Province. To further optimize the index system, the researchers adopted the Delphi method and determined the index system of the quality evaluation of the physical education and health curriculum in Guangdong Province after two rounds of the Delphi questionnaire survey. At the same time, to further clarify the importance of each indicator in the index system, the researchers used AHP (Analytic Hierarchy Process) to determine the weight of each indicator, and after the focus group experts demonstrated, finally established the physical education and health curriculum quality evaluation index system of Guangdong Province.

This paper mainly studies the construction of the evaluation index system of physical education and health curriculum implementation in Guangdong Province. The main results are as follows: (1) Established the evaluation index system of the quality of physical education and health curriculum implementation in middle schools in Guangdong Province. The index system consists of 4 first-level indicators, 12 second-level indicators, and 47 third-level indicators; and (2) Determined the weights of each index in the evaluation index system of the implementation quality of physical education and health curriculum in middle schools in Guangdong Province.

1. Establishment of the curriculum evaluation indexes

The evaluation indexes for the implementation quality of physical education and health curriculums in middle schools in Guangdong Province were established through the selection of experts by the Delphi method, as shown in the table below:

Table 1 Quality Evaluation Indexes of Middle School Physical Education and Health Curriculum Implementation in Guangdong Province



The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
A Curriculum Background	A1 Curriculum Philosophy	A11 Implementation of the "Health First" educational concept A12 Implementation of the integrated teaching requirements of "Church, Hard Practice, and Regular Games"
	A2 Curriculum Objectives	A21 Curriculum objectives comprehensively cover the core literacy connotation: sports ability, healthy behavior, and sports morality. A22 Whether the curriculum objectives are implemented and reflected in the curriculum content, teaching objectives, and teaching methods. A23 Implement the corresponding curriculum objectives according to the student's level of study.
	A3 Institutional Guarantee	A31 Has formulated rules and regulations such as teaching management of physical education and health curriculums. A32 There is a system for monitoring and announcing students' physical health. A33 Has formulated campus sports security and emergency plans. A34 Incorporate physical education and health curriculum into school development planning and annual work plan
B Curriculum Resources	B1 Facilities	B11 Sports venues and facilities meet the needs of physical education and health curriculum teaching and practical activities. B12 Sports equipment meets the requirements of the "Catalogue of Middle School Sports Equipment and Facilities".
	B2 Faculty Strength	B21 is Fully equipped with strong PE teachers. B22 PE teachers are qualified for physical education and health education teaching work. B23 Carry out teaching and research activities to continuously improve teachers' teaching ability and skill level B24 PE teachers' participation in teaching-related training.
	B3 Funding input	B31 Be equipped with sports venues, equipment daily maintenance, and maintenance costs. B32 Be equipped with a sports consumables purchase fee. B33 Be equipped with funds for research and development and implementation of physical education and health curriculum content resources B34 Includes related expenses such as teaching research and training for teachers of physical education and health curriculums. B35 Purchase sports injury insurance for students.



The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
C Curriculum Implementation	C1 Curriculum Content	<p>C11 The content of curriculums covers physical fitness, health education, special sports skills, and interdisciplinary theme learning.</p> <p>C12 Overall planning and design of physical education and health curriculum content, and design of corresponding education and teaching content for students of corresponding school stage and level.</p> <p>C13 selects excellent textbooks, absorbs cutting-edge knowledge of disciplines, pays attention to sports and health scenarios and activities, highlights excellent traditional Chinese sports, and integrates interdisciplinary.</p>
	C2 Curriculum Teaching	<p>C21 Compiles the curriculum implementation plan to effectively cultivate students' core literacy.</p> <p>C22 Reasonably formulate learning objectives and select teaching content to enhance the pertinence and effectiveness of students' learning.</p> <p>C23 Improve classroom teaching methods and promote students' active learning and practice;</p> <p>C24 Promotes the organic combination of inside and outside the classroom and guides students to develop good physical exercise habits.</p>
	C3 Curriculum Evaluation	<p>C31 Curriculum evaluation is composed of information such as in-class physical education learning attitude and performance, extracurricular physical exercise situation and effect, and healthy behavior.</p> <p>C32 Judge and evaluate the reflected core literacy level and students' physical education and health curriculum learning situation according to the academic quality;</p> <p>C33 Promotes students to achieve curriculum goals and develop core literacy through diversified learning evaluations.</p>
D Curriculum Effectiveness	D1 Student Development	<p>D11 Students' mastery and application of physical and motor skills.</p> <p>D12 Physical health test of school students in each school year.</p> <p>D13 Students actively participate in sports activities and develop good exercise habits.</p> <p>D14 Students' use of health and safety knowledge and skills for health management.</p> <p>D15 Students establish awareness of sports safety and prevention of sports injuries and diseases.</p> <p>D16 Students can endure hardships and stand hard work, dare to fight hard and dare to strive for first place.</p> <p>D17 Students have integrity, self-discipline, compliance with rules, fairness, and impartiality.</p> <p>D18 Students have a sense of responsibility, a sense of collective honor, and a correct outlook on victory and defeat.</p>



The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
	D2 Student Satisfaction	D21 Students' satisfaction with the content of school physical education and health curriculums. D22 Students' satisfaction with the teaching staff of school physical education and health curriculums. D23 Students' satisfaction with school sports and health curriculum venues and equipment. D24 Students' satisfaction with the evaluation methods of school physical education and health curriculums. D25 Students' satisfaction with the effect of school physical education and health curriculums.
	D3 Parent Satisfaction	D31 Parents' satisfaction with the physical education teachers in their children's schools. D32 Parents' satisfaction with the sports venues and facilities of their children's schools. D33 Parents' satisfaction with the content of physical education and health curriculums in their children's schools. D34 Parents' satisfaction with the effectiveness of their children's school's physical education and health curriculums

2. Determine index weights

In this study, the Analytic Hierarchy Process (AHP) is used to determine the index weight. After the completion of Delphi screening indexes, experts are invited to make a one-by-one comparison and judgment on the importance of indexes in the group. The quantitative assignment of the Saaty scale value is determined according to the mean difference " ∂V " of the importance data of each indicator by experts as the data for matrix construction and analysis. After sorting out the weights of all levels of indexes, the final weight table of the evaluation index system for the implementation quality of physical education and health curriculum in middle schools in Guangdong Province is obtained. Details are as follows:

Table 2 Weight table of the quality evaluation index system for the implementation of physical education and health curriculum in middle schools in Guangdong Province

The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
A Curriculum Background (0.120)	A1 Curriculum Philosophy (0.058)	A11 Implementation of the "Health First" educational concept (0.029)
		A12 Implementation of the integrated teaching requirements of "Church, Hard Practice, and Regular Games" (0.029)
	A2 Curriculum Objectives (0.038)	A21 Curriculum objectives comprehensively cover the core literacy connotation: sports ability, healthy behavior, and sports morality. (0.020)
		A22 Whether the curriculum objectives are implemented and reflected in the curriculum content, teaching objectives, and teaching methods. (0.012)
		A23 Implement the corresponding curriculum objectives according to the student's level of study. (0.006)



The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
B Curriculum Resources (0.170)	A3 Institutional Guarantee (0.024)	A31 Has formulated rules and regulations such as teaching management of physical education and health curriculums. (0.007)
		A32 There is a system for monitoring and announcing students' physical health. (0.011)
		A33 Has formulated campus sports security and emergency plans. (0.004)
		A34 Incorporate physical education and health curriculum into school development planning and annual work plan. (0.002)
	B1 Facilities (0.024)	B11 Sports venues and facilities meet the needs of physical education and health curriculum teaching and practical activities. (0.012)
		B12 Sports equipment meets the requirements of the "Catalogue of Middle School Sports Equipment and Facilities". (0.012)
		B21 is Fully equipped with strong PE teachers. (0.039)
		B22 PE teachers are qualified for physical education and health education teaching work. (0.028)
	B2 Faculty Strength (0.090)	B23 Carry out teaching and research activities to continuously improve teachers' teaching ability and skill level (0.013)
		B24 PE teachers' participation in teaching-related training. (0.010)
	B3 Funding Input (0.056)	B31 Be equipped with sports venues, equipment daily maintenance, and maintenance costs. (0.014)
		B32 Be equipped with a sports consumables purchase fee. (0.020)
		B33 Be equipped with funds for research and development and implementation of physical education and health curriculum content resources (0.004)
		B34 Includes related expenses such as teaching research and training for teachers of physical education and health curriculums. (0.010)
		B35 Purchase sports injury insurance for students. (0.008)
C Curriculum Implementation (0.260)	C1 Curriculum Content (0.137)	C11 The content of curriculums covers physical fitness, health education, special sports skills, and interdisciplinary theme learning. (0.074)
		C12 Overall planning and design of physical education and health curriculum content, and design of corresponding education and teaching content for students of corresponding school stage and level. (0.040)
		C13 Selects excellent textbooks, absorbs cutting-edge knowledge of disciplines, pays attention to sports and health scenarios and activities, highlights excellent traditional Chinese sports, and integrates interdisciplinary. (0.023)



The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
D Curriculum Effectiveness (0.450)	C2 Curriculum Teaching (0.087)	C21 Compiles the curriculum implementation plan to effectively cultivate students' core literacy. (0.031)
		C22 Reasonably formulate learning objectives and select teaching content to enhance the pertinence and effectiveness of students' learning. (0.031)
		C23 Improve classroom teaching methods and promote students' active learning and practice. (0.016)
		C24 Promotes the organic combination of inside and outside the classroom and guides students to develop good physical exercise habits. (0.009)
	C3 Curriculum Evaluation (0.036)	C31 Curriculum evaluation is composed of information such as in-class physical education learning attitude and performance, extracurricular physical exercise situation and effect, and healthy behavior. (0.021)
		C32 Judge and evaluate the reflected core literacy level and students' physical education and health curriculum learning situation according to the academic quality (0.009)
		C33 Promotes students to achieve curriculum goals and develop core literacy through diversified learning evaluations. (0.006)
	D1 Student Development (0.274)	D11 Students' mastery and application of physical and motor skills. (0.073)
		D12 Physical health test of school students in each school year. (0.059)
		D13 Students actively participate in sports activities and develop good exercise habits. (0.043)
		D14 Students' use of health and safety knowledge and skills for health management. (0.009)
		D15 Students establish awareness of sports safety and prevention of sports injuries and diseases. (0.016)
		D16 Students can endure hardships and stand hard work, dare to fight hard and dare to strive for first place. (0.027)
		D17 Students have integrity, self-discipline, compliance with rules, fairness, and impartiality. (0.027)
		D18 Students have a sense of responsibility, a sense of collective honor, and a correct outlook on victory and defeat. (0.020)
	D2 Student Satisfaction (0.122)	D21 Students' satisfaction with the content of school physical education and health curriculums. (0.036)
		D22 Students' satisfaction with the teaching staff of school physical education and health curriculums. (0.036)



The First-Level Indexes	The Second-Level Indexes	The Third-Level Indexes
		D23 Students' satisfaction with school sports and health curriculum venues and equipment. (0.009)
		D24 Students' satisfaction with the evaluation methods of school physical education and health curriculums. (0.024)
		D25 Students' satisfaction with the effect of school physical education and health curriculums. (0.017)
	D3 Parent Satisfaction (0.054)	D31 Parents' satisfaction with the physical education teachers in their children's schools. (0.011)
		D32 Parents' satisfaction with the sports venues and facilities of their children's schools. (0.004)
		D33 Parents' satisfaction with the content of physical education and health curriculums in their children's schools. (0.016)
		D34 Parents' satisfaction with the effectiveness of their children's school's physical education and health curriculums. (0.023)

3. Feasibility analysis of the evaluation index system

The expert focus group interview was conducted in the form of a panel discussion. Through an hour-long in-depth interview, the rationality and feasibility of the quality evaluation index system for the implementation of physical education and health curriculum in middle schools in Guangdong Province were discussed. The results are as follows:

3.1 Rationality analysis of index system. The results of the experts' discussion on the rationality of the index system are as follows:

The overall structure design of the evaluation index system of the implementation quality of physical education and health curriculum in Guangdong Province Reasonable design has the support of policy guidance and theory. According to the requirements of the 2022 edition of the new curriculum standard, combined with the opinions of school sports work in the new era, the formulation of the quality evaluation indicators of the implementation of physical education and health curriculum in middle schools in Guangdong Province can completely and comprehensively evaluate the whole process of the implementation of the new curriculum standard.

Experts believe that the index dimension is reasonable and the index level is clear, which can clearly show the relationship between the evaluation plate, the assessment aspect, and the specific evaluation index factors. The quantity and weight ratio of indicators at all levels is reasonable, which can effectively reflect the guiding spirit of curriculum evaluation that pays attention to the evaluation of the academic level. The index system structure is reasonable, the level is clear and the index is comprehensive.

3.2 Feasibility analysis of index system. Experts discussed the feasibility of the index system as follows:

Experts believe that the quality evaluation index system for the implementation of physical education and health curriculum in middle schools in Guangdong Province constructed in this study is an important tool scale for the comprehensive promotion and implementation of the new curriculum standard 2022 edition, and has practical significance for testing and guiding the high-quality implementation of curriculum and strengthening the management of physical education in schools. The index system can quantify and objectively evaluate the overall implementation effect more scientifically and effectively by assigning the weight of each index.

Experts believe that the index system and index weights constructed in this study can effectively evaluate the quality of physical education and health curriculum implementation in middle schools in



Guangdong Province, and have good feasibility and applicability. In addition, experts believe that there is still room for further research and optimization of data objectification degree and quantitative transformation methods of single indicators such as curriculum evaluation and student development, and it is suggested to strengthen research, optimization, and improvement in teaching process evaluation.

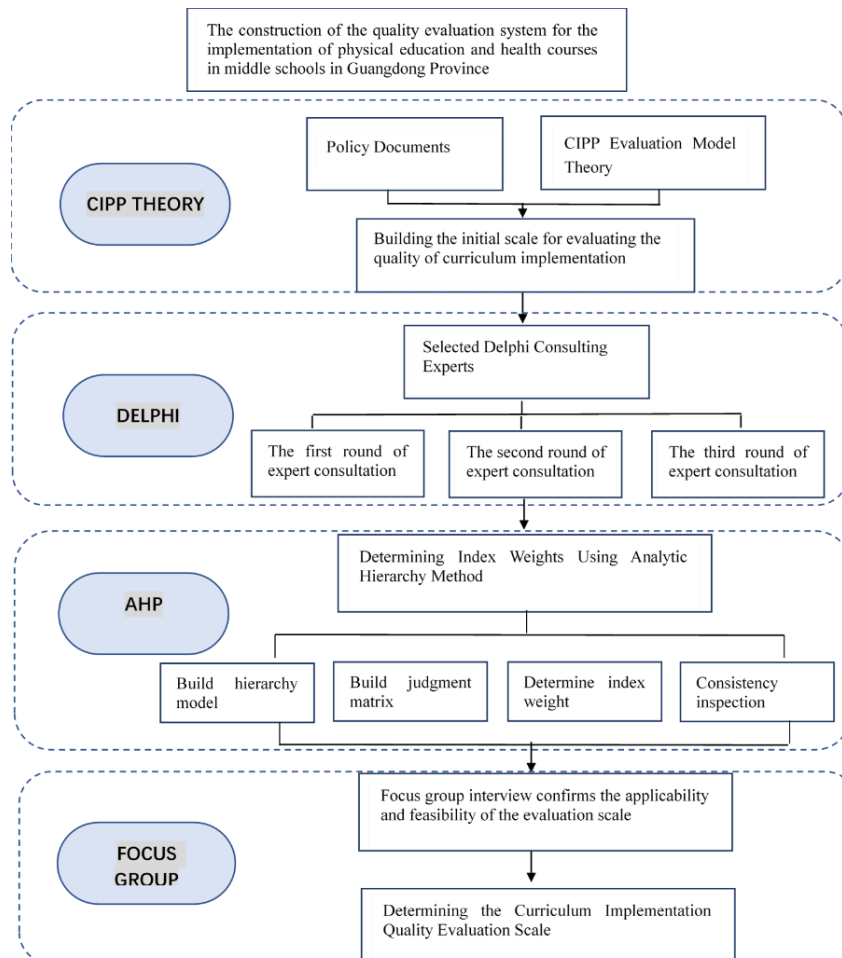


Figure 3 Research technology roadmap

Discussion

1. Concept and positioning of the quality evaluation index system of physical education and health curriculum

Based on the implementation of the Compulsory Education Curriculum Plan and Curriculum Standards (2022 edition) in primary and secondary schools in China in September 2022, this paper carried out research on the construction of Guangdong Province's physical education and health curriculum quality evaluation index system. The idea of constructing the evaluation system is to strengthen the implementation and development of curriculum, promote the development of student sports, and help the school sports management; The purpose of the evaluation system is to construct a set of scales to measure and evaluate the quality of curriculum implementation, which can realize scientific and objective supervision and self-evaluation in teaching management.

From the late 19th century to the 1930s, quality evaluation in education was equated with evaluation or measurement. After the 1930s, Taylor conducted a systematic study on "curriculum and evaluation" for eight years, extending evaluation in the field of teaching to the level of overall quality



assessment (Liu Guimei, 2018). To drive research institutions towards excellence, feedback execution must be achieved through an assessment of the quality of teaching and learning in the curriculum (Seraj, S.A. 2023). As a country with a decentralized system of education, the United States enjoys the right of self-management of teacher education in each state, and the teacher education curriculums must be approved by the state's administrative departments and the quality evaluation should be conducted every few years. Such assessments are mandatory to ensure the quality of teacher education curriculums to the public (Xie Sai, 2013). It can be seen that the construction concept and positioning of this study are consistent with the research conclusions of the concept and positioning of international education evaluation.

2. Dimension construction of physical education and health curriculum quality evaluation index system

According to the content and academic level requirements of the new curriculum standard (2022 edition), combined with the CIPP curriculum evaluation model theory, this study constructed the physical education and health curriculum quality evaluation index system from four dimensions: curriculum background, curriculum resources, curriculum implementation, and curriculum effectiveness. In the four dimensions, the evaluation content index was further classified and segmented at different levels.

Based on the CIPP evaluation model proposed by American expert D.L. Stufflebeam, Longfei, P., constructed a scientific primary school curriculum quality evaluation index from four dimensions: development basis, resource allocation, school-based implementation, and effectiveness impact. This paper further discusses the substantive problems arising in the current development process of school-based curriculum (Longfei, P., 2019). It can be seen that the macro dimension of the index construction in this study is consistent with the research conclusion of Longfei, P., (2019).

3. Content design of physical education and health curriculum quality evaluation index system

Based on four macro-dimensions of first-level indicators, this research obtains 12 second-level indicators including curriculum concept, curriculum objectives, system guarantee, venue facilities, teachers, funding input, curriculum content, curriculum teaching, curriculum evaluation, student development, student satisfaction, and parent satisfaction. Liu, J. (2022) made a comprehensive and in-depth elaboration of the main spirit and content of the new curriculum standards from the aspects of curriculum nature, curriculum concept, core accomplishment, curriculum objectives, curriculum content, academic quality, curriculum implementation, etc. (Liu, J. 2022: 17+67). It can be seen that the conclusions of this study at the content design level cover the main concepts and contents of the new curriculum standards, which are consistent with the conclusions of Ji Liu (2022).

Conclusion

1. The research has concluded that the quality evaluation indexes for the implementation of physical education and health curriculums in middle schools in Guangdong Province are as follows: Including 4 first-level indexes of A curriculum background, B curriculum resources, C curriculum implementation, and D curriculum effectiveness; 12 second-level indexes such as A1 curriculum concept, A2 curriculum goal, A3 system guarantee, and A11 implementation of the "health first" education concept 47 three-level indexes such as the situation, A12 implementation of the integrated teaching requirements of "church, hard practice, and regular competition".

2. The study concluded that the weight of the three-level index system for the quality evaluation of physical education and health curriculums in middle schools in Guangdong Province: Among the 4 first-level indexes, the impact on the evaluation of the quality of curriculum implementation, the effect of curriculum D has the largest proportion, accounting for 45%, followed by the implementation of curriculum C, accounting for 26%, and the background of curriculum A and curriculum resource B account for the least, respectively 17.1% % and 12%; among the 12 second-level indexes, A1 curriculum concept 49%, B2 teacher strength 52.5%, C1 curriculum content 52.5%, D1 student development 60.8% four second-level indexes, respectively for the first-level index A curriculum background, B curriculum resources, C curriculum implementation, and D curriculum effectiveness have the greatest influence.

3. The research shows the weight of 47 index items in the quality evaluation of physical education and health curriculums in middle schools in Guangdong Province: The study obtained the weight ratio of 47 indexes in the quality evaluation of physical education and health curriculums in middle schools



in Guangdong Province. Among them, the items with higher weight ratios are: C11 curriculum content covers physical fitness, health education, special sports skills, and interdisciplinary theme learning, with an overall impact of 7.4%; D11 The overall impact of students' mastery and use of physical fitness and sports skills 7.3%; D12 The physical health test of school students in each school year, the overall impact accounts for 5.9%; D13 Students actively participate in sports activities and develop good exercise habits, the overall impact accounts for 4.3%; C12 Overall planning and design of sports and health curriculums For content, design corresponding education and teaching content for students of corresponding grades and basic levels, with an overall impact of 4.0%; B21 is equipped with strong physical education teachers, with an overall impact of 3.9%.

4. The research shows that under the background of the implementation of the 2022 version of the new curriculum standard, the macro-level of the quality evaluation system for the implementation of physical education and health curriculums in Guangdong Province includes four aspects: curriculum background, curriculum resources, curriculum implementation, and curriculum effectiveness.

5. The research shows that under the background of the implementation of the 2022 version of the new curriculum standard, the main indexes at the micro level of the quality evaluation system for the implementation of physical education and health curriculums in Guangdong Province are: the allocation of physical education teachers, the planning and design of teaching content and the development of student's skills, the improvement of students' physical fitness, and the development of students' exercise habits, etc.

Recommendations

1. Government level

By strengthening the construction of supporting policies, ensuring the allocation of curriculum resources, effectively implementing supervision and management, and exerting administrative effectiveness to promote curriculum development.

Firstly, it is crucial to ensure that physical education teachers are adequately equipped. The role of physical education teachers in the implementation and evaluation of physical education and health curricula holds utmost significance. Therefore, all regions in Guangdong Province should make concerted efforts to allocate a sufficient number of high school PE teachers, while areas currently lacking allocation should reserve a certain proportion for the annual recruitment of PE teachers.

Secondly, there is a need to enhance the infrastructure development of sports facilities. The new 2022 edition curriculum standards demand higher requirements for the establishment of diverse curriculum objectives and integrated content, necessitating an urgent acceleration by the government in researching and formulating fundamental standards for physical education and health conditions in national schools.

Thirdly, we must improve the supervision and evaluation system within educational institutions. With full implementation of the 2022 edition curriculum standards, it becomes imperative to further enhance the supporting supervision and evaluation system for education. This includes incorporating policies' implementation measures, students' physical health status assessment, quality evaluations as well and support provided to schools conducting physical education work into the scope of educational supervision.

2. Social level

Through publicity and guidance, establish the "core literacy" of physical education curriculums to cultivate the overall goal cognition, share sports resources, and form educational synergy.

Firstly, effective coordination and integration of social resources are essential. The strengths of Guangdong Province as a leading sports province should be fully utilized to coordinate school and social resources. Urban and community construction planning must take into account the physical training needs of students, with new projects prioritized in or around schools while public sports facilities are comprehensively utilized to provide robust social resource support for the three-dimensional implementation of sports and health courses.

Secondly, it is crucial to foster a conducive social atmosphere. The social environment plays an integral role in school education and student growth and development; thus, leveraging social forces through strengthened publicity efforts that gather consensus can create a positive societal climate that promotes joint efforts toward advancing school sports development.

3. School level

"Through understanding" the concept, formulate a path, use "academic quality" as a new criterion for evaluating teachers' and students' physical education teaching and learning, effectively implement



the new physical education curriculum standards, and promote the development of physical education in schools.

The first step is to establish a clear curriculum concept, ensuring its accurate implementation. Emphasizing the principles of "church, diligent practice, frequent competition," the cultivation of core literacy in physical education and health curriculum should be effectively implemented.

Strengthening the construction of the physical education curriculum and teaching material system is crucial. In Guangdong Province's middle schools, attention should be given to establishing connections between different sections within the physical education curriculum. Additionally, school physical education textbooks need to be rooted in China while integrating with international perspectives. Teaching materials should be selected based on students' age characteristics and their physical and mental development laws.

Promoting reforms in school sports evaluation is essential. This includes establishing an examination mechanism that combines daily participation, monitoring physical fitness levels, and testing specific sports skills. Furthermore, improvements should be made regarding content, methods, and scoring systems used in high school entrance examinations' physical education tests to ensure academic goals are achieved while promoting students' healthy development.

4. Family level

By establishing the correct concept of "family-school-community" co-education awareness, build a "family-school-community" sports linkage platform to promote the development of students' "core literacy" in sports.

Firstly, parents should establish a concept of "home-school" co-education to promote the sharing and supplementation of educational resources, to better achieve the goal of quality education. Secondly, create a family atmosphere for physical exercise and provide conditions for improving physical literacy. Parents should focus on students' healthy development, create a good family sports atmosphere, and promote the formation of students' habits of physical exercise.

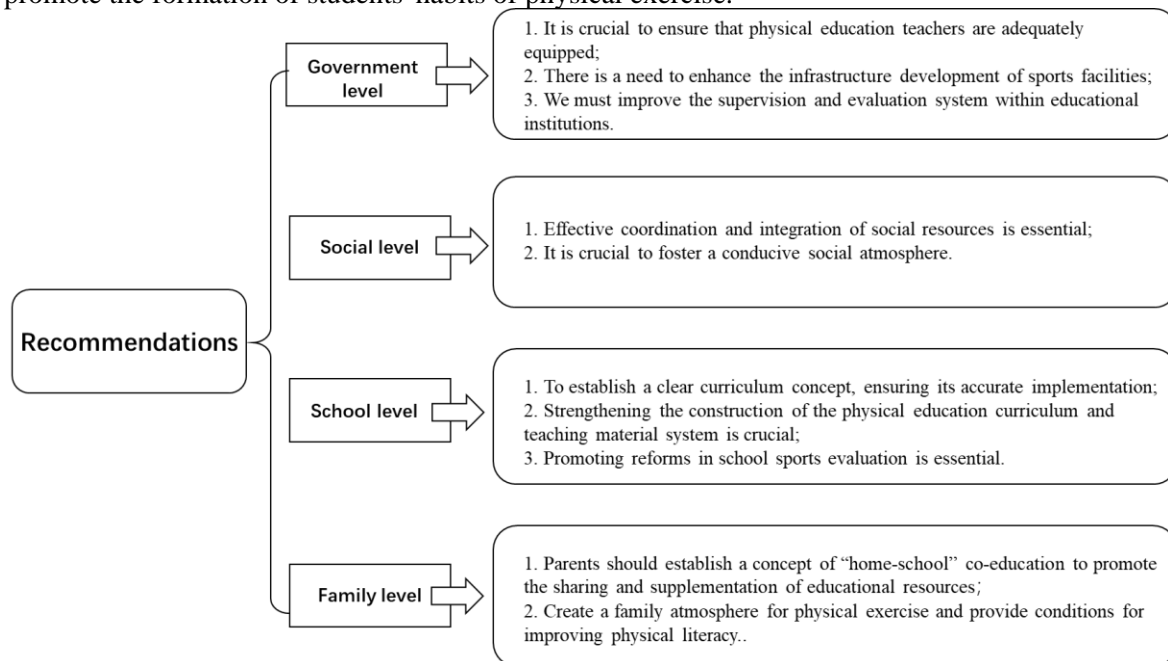


Figure 4 Recommendations of the research

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