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Guidelines for the Promotion of Wushu Arts Routines in Middle Schools of Nanchang City, Jiangxi Province

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Abstract

Background and Aims: Wushu activities play an important role in promoting students' physical fitness, cultural identity, moral values, and holistic development. However, many middle schools in Nanchang City, Jiangxi Province, continue to face challenges in effectively implementing Wushu programs. Therefore, this study aimed to (1) investigate the current situation, problems, and needs related to the promotion of Wushu activities in middle schools in Nanchang City, Jiangxi Province; (2) develop management guidelines for promoting Wushu activities; and (3) evaluate the appropriateness, feasibility, and practicality of the developed guidelines.

Methodology: This study employed a Research and Development (R&D) approach using mixed methods. Quantitative data were collected through a questionnaire survey from 492 respondents selected through multistage sampling, including 390 students, 17 instructors, 15 school executives, and 70 community and parent representatives from five middle schools in Nanchang City, Jiangxi Province. The questionnaire achieved an Index of Item-Objective Congruence (IOC) of 0.95. Qualitative data were obtained through in-depth interviews with five experts (IOC = 0.94), a focus group discussion involving 15 experts, and a connoisseurship evaluation conducted by five experts (IOC = 0.96). Quantitative data were analyzed using the mean and standard deviation, while qualitative data were analyzed through content analysis.

Results: The findings revealed that the overall current situation of Wushu promotion was at a moderate level ($\bar{x}$ = 2.94, SD = 0.82). Major problems included a lack of qualified Wushu teachers, insufficient facilities and equipment, limited budget and financial support, low student motivation, lack of a structured curriculum, weak policy implementation, poor coordination among stakeholders, and inadequate monitoring and evaluation systems. Stakeholders expressed a high level of need for systematic improvements in all identified areas. Based on these findings, management guidelines were developed using the PDCA cycle integrated with POLC management principles, the 4Ps framework (Policy, People, Program, and Place), and PESTLE analysis. The developed guideline addressed the eight major problem areas and consisted of 136 operational components, including 34 components in the Plan phase, 45 components in the Do phase, 29

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components in the Check phase, and 28 components in the Act phase. The connoisseurship evaluation indicated that the developed guideline achieved very high levels of appropriateness (4.70 ± 0.48), feasibility (4.49 ± 0.55), and practicality (4.53 ± 0.54).

Conclusion: The developed guideline was evaluated as highly appropriate, feasible, and practical for application in middle schools. The integration of POLC management principles, the 4Ps framework, PESTLE analysis, and the PDCA cycle provided a comprehensive framework for addressing the major problems identified in Wushu promotion. The guideline may support a more systematic approach to promoting Wushu activities and has the potential to contribute to sustainable management after further field testing and long-term implementation.

Keywords: Wushu Activities; Management Guideline; PDCA Cycle; POLC; Middle schools; Nanchang City

Introduction

The educational landscape of the twenty-first century has shifted from emphasizing academic achievement alone to promoting the holistic development of learners in physical, psychological, social, and moral dimensions. International organizations such as UNESCO (2023) have emphasized that traditional sports and cultural activities play an important role in developing students' competencies, cultural identity, and lifelong well-being. As a result, many countries have increasingly integrated traditional sports into school education to support balanced and sustainable youth development.

In China, Wushu is recognized not only as a traditional sport but also as an important cultural heritage that reflects Chinese philosophy, discipline, moral values, and national identity. Recent studies have demonstrated that participation in Wushu activities can significantly improve students' physical fitness, balance, concentration, self-discipline, emotional regulation, and social responsibility (Yang, 2024; Yu & Mantuhac, 2024; Zhou et al., 2025). In response to these benefits, the Chinese government has strengthened support for Wushu through the National Fitness Program (2021–2025) and the Physical Education and Health Curriculum Standards (Ministry of Education of the People's Republic of China, 2022), which encourage schools to integrate Wushu into physical education and extracurricular activities.

Despite strong national policy support, the implementation of Wushu activities in many middle schools remains inconsistent. Recent studies have reported challenges related to teacher competency, resource allocation, curriculum management, stakeholder participation, and program evaluation (Zhou et al., 2025). These challenges are particularly evident in Nanchang City, Jiangxi Province, where schools vary considerably in terms of educational resources, facilities, personnel, and management capacity. Preliminary investigations conducted by the researcher

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found that many schools continue to face shortages of qualified Wushu teachers, insufficient facilities and equipment, limited financial support, weak policy implementation, low student participation, inadequate curriculum structures, poor coordination among stakeholders, and ineffective monitoring and evaluation systems. Consequently, many Wushu programs are implemented on a temporary or activity-based basis rather than through systematic and sustainable management practices.

The needs assessment further revealed that students, teachers, administrators, parents, and policy-related personnel strongly support the development of a comprehensive management framework that can guide planning, implementation, coordination, monitoring, and continuous improvement of Wushu activities. However, a review of the literature indicated a lack of management guidelines specifically designed for middle schools in Nanchang City that integrate educational management principles with local contextual needs. This represents an important research gap requiring further investigation.

To address this gap, the present study integrates the POLC management framework, the 4Ps framework (Policy, People, Program, and Place), PESTLE analysis, and the PDCA cycle to develop comprehensive management guidelines for promoting Wushu activities in middle schools. These frameworks provide a systematic approach for addressing internal management factors, external environmental influences, operational processes, and continuous quality improvement.

Therefore, this study was conducted to investigate the current situation, problems, and needs related to Wushu promotion, develop management guidelines suitable for the context of middle schools in Nanchang City, and evaluate their appropriateness, feasibility, and practicality. The findings are expected to benefit school administrators, teachers, educational policymakers, and community stakeholders by providing a practical framework for improving the quality of Wushu programs and supporting the long-term development of traditional sports education in China.

Objectives

This study aims to achieve the following specific objectives, balancing theoretical construction and practical application:

1) To systematically investigate the current status, main problems, and core needs of Wushu routine promotion in middle schools in Nanchang City, Jiangxi Province.

2) To develop and construct a systematic Wushu routine management guideline for middle schools in Nanchang City.

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3) To evaluate and revise the developed guidelines from the dimensions of appropriateness, feasibility, and practicality through expert review and pilot verification.

Literature Review

Wushu activities have been widely recognized as an important component of school physical education because they contribute to students' physical fitness, psychological well-being, moral development, and cultural identity. Recent studies have reported that regular participation in Wushu can improve balance, flexibility, concentration, self-discipline, and emotional regulation among adolescents (Yang, 2024; Yu & Mantuhac, 2024; Zhou et al., 2025). In response to these educational benefits, China has strengthened support for Wushu through national policies, including the National Fitness Program (2021–2025) and the Physical Education and Health Curriculum Standards (Ministry of Education of the People's Republic of China, 2022), which encourage schools to integrate traditional sports into both curricular and extracurricular activities.

Despite these policy initiatives, previous studies have identified persistent implementation challenges in middle schools, including shortages of qualified teachers, inadequate facilities and equipment, limited financial resources, weak stakeholder collaboration, insufficient curriculum structures, and ineffective monitoring and evaluation systems (Barrett et al., 2021; Bush, 2020; Fullan, 2020). As a result, many schools continue to implement Wushu activities as short-term events rather than sustainable educational programs. These challenges indicate a gap between policy expectations and actual school practices.

To address these challenges, organizations need systematic management frameworks that support planning, implementation, monitoring, and continuous improvement to enhance overall effectiveness and quality outcomes (Deming, 1986). However, limited research has focused on developing management guidelines specifically for promoting Wushu activities in middle schools in Nanchang City, Jiangxi Province. Therefore, this study builds upon previous research and integrates relevant management concepts to develop and evaluate a practical guideline that addresses local needs and implementation challenges while supporting the effective promotion of Wushu activities in middle schools.

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Conceptual Framework

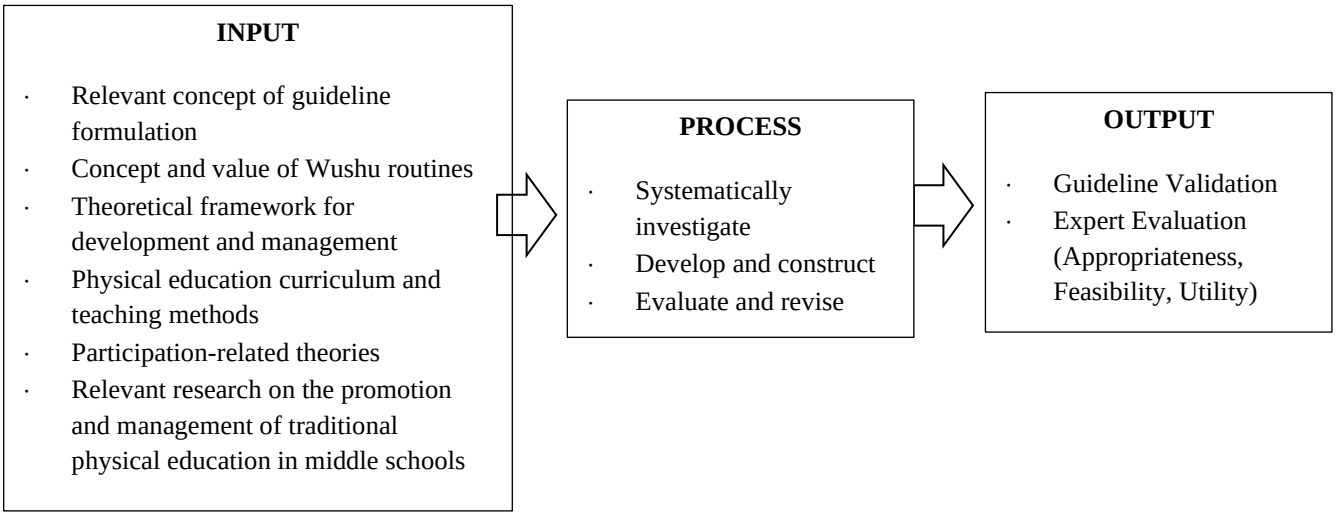


Figure 1 Conceptual Framework

Methodology

This study employed a mixed-methods Research and Development (R&D) methodology to investigate the current situation, problems, and needs related to the promotion of Wushu arts routines in middle schools, to develop management guidelines, and to evaluate the appropriateness, feasibility, and practicality of the developed guidelines. The study was conducted in Nanchang City, Jiangxi Province, China, and was approved by the Human Research Ethics Committee under Certification Number 2569/228 (17). The research process consisted of three major phases: (1) investigation of the current situation, problems, and needs through a questionnaire survey and in-depth interviews; (2) development and refinement of the management guidelines through a focus group discussion; and (3) evaluation of the developed guidelines through connoisseurship evaluation.

1. Population and Sample Group

The population of this study consisted of students, instructors, school executives, and community/parent representatives from five middle schools offering Wushu arts routines courses or activities in Nanchang City, Jiangxi Province, China. The total population was 8,000 participants, including 6,500 students, 136 instructors, 111 executives, and 1,253 community/parent representatives.

The sample size was determined using the Taro Yamane formula at a 95% confidence level. Stratified random sampling was used to ensure proportional representation from each participant group and each school. The final sample consisted of 492 respondents, including 390 students,

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17 instructors, 15 executives, and 70 community/parent representatives from five selected middle schools. The selected schools were Ganjiang New Area Junior High School, Nanchang Middle School, Yaohu Campus of the Affiliated Middle School to Jiangxi Normal University, Chaoyang Middle School, and Nanchang No. 2 Middle School.

The inclusion criteria were as follows: students had to be currently enrolled in one of the selected schools and participate in Wushu arts routines courses or activities; instructors had to be physical education teachers or Wushu instructors responsible for teaching or supervising Wushu activities; executives had to be school administrators responsible for physical education, student activities, or curriculum management; and community/parent representatives had to be parents, guardians, or community members involved in or knowledgeable about school Wushu activities. Participants who were absent during data collection, had no direct involvement in Wushu activities, or provided incomplete responses were excluded.

In addition to the questionnaire respondents, expert participants were selected purposively. Five experts with more than five years of experience in Wushu arts routines education and middle school management were invited to validate the questionnaire. Five experts, including two administrators, two teachers, and one policy maker, participated in the in-depth interviews. Fifteen experts participated in the focus group discussion to refine the draft guidelines. These experts consisted of three executives, three instructors, five staff members, and four stakeholders. Finally, five experts with more than eight years of relevant experience participated in the connoisseurship evaluation to assess the final guidelines.

2. Research Tools

The research instruments consisted of four main tools.

First, the questionnaire was developed to collect quantitative data on the current situation, problems, needs, and guideline components related to the promotion of Wushu arts routines in middle schools. The questionnaire was constructed based on the POLC management framework, the 4Ps framework, and PESTLE analysis. It used a five-point Likert scale ranging from 1 to 5, where 5 represented a very high level, 4 represented a high level, 3 represented a moderate level, 2 represented a low level, and 1 represented a very low level.

Second, the in-depth interview form was a semi-structured interview guide used to collect qualitative data from five experts. The interview questions focused on current management conditions, major problems, needs, and recommendations for improving Wushu arts routines management in middle schools.

Third, the focus group discussion form was used to collect expert opinions on the first draft of the management guideline. The form focused on clarity, feasibility, practicality, completeness, and appropriateness of the proposed guideline components.

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Fourth, the connoisseurship evaluation form was used to evaluate the final version of the developed management guideline. The form assessed three dimensions: appropriateness, feasibility, and practicality. Open-ended questions were also included to obtain additional expert recommendations for final revision.

3. Creating and Finding Quality of Research Tools

The questionnaire was developed through four steps. First, the researcher reviewed relevant documents, theories, previous studies, and policy documents related to Wushu arts routines, school physical education, educational management, POLC, 4Ps, and PESTLE. Second, questionnaire items were drafted according to the research objectives and conceptual frameworks. Third, the content validity of the questionnaire was examined by five experts using the Index of Item-Objective Congruence (IOC). The IOC value of the questionnaire was 0.95, with item values ranging from 0.80 to 1.00, indicating that all items were appropriate for data collection. Fourth, the questionnaire was pilot-tested with 30 respondents who had characteristics similar to the target population. The reliability was analyzed using Cronbach's Alpha. The overall reliability coefficient was 0.93, indicating excellent internal consistency. The reliability coefficients were 0.91 for the POLC section, 0.89 for the 4Ps section, and 0.92 for the PESTLE section.

The in-depth interview form was developed by reviewing relevant literature and questionnaire findings, drafting interview questions aligned with the research objectives, and validating the content by five experts using IOC. The IOC value of the interview form was 0.94, with values ranging from 0.80 to 1.00.

The focus group discussion form was developed by reviewing the draft management guideline and related literature. The questions were designed to gather expert opinions on the clarity, feasibility, practicality, and completeness of the guideline. The form was used to guide discussion among 15 experts and to revise the guideline based on their recommendations.

The connoisseurship evaluation form was developed by reviewing the final draft of the guideline and relevant evaluation criteria. The rating items assessed appropriateness, feasibility, and practicality. The form was examined by five experts using IOC, and the IOC value was 0.96, with values ranging from 0.80 to 1.00.

4. Data Collection

Data collection was conducted in four stages.

In the first stage, the researcher collected quantitative data using the questionnaire. The questionnaire was distributed to 492 respondents from five middle schools in Nanchang City, Jiangxi Province. The respondents included 390 students, 17 instructors, 15 executives, and 70 community/parent representatives. The questionnaire collected information about the current

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situation, problems, needs, and important components for developing management guidelines for promoting Wushu arts routines.

In the second stage, qualitative data were collected through in-depth interviews with five experts. The experts included two administrators, two teachers, and one policymaker. Each interview was conducted individually using a semi-structured interview form. The interviews focused on existing management conditions, key problems, development needs, and recommendations for improving Wushu arts routines management in middle schools.

In the third stage, the researcher developed the first draft of the management guideline based on the results of the questionnaire and in-depth interviews. The draft guideline was structured according to the PDCA cycle. A focus group discussion was then conducted with 15 experts, including executives, instructors, staff members, and stakeholders. The experts reviewed the draft guideline and provided recommendations for improving its clarity, feasibility, practicality, and completeness. The guideline was revised according to the experts' suggestions.

In the fourth stage, the final management guideline was evaluated through connoisseurship by five experts. These experts consisted of two executives, one instructor, one staff member, and one stakeholder. They evaluated the guidelines developed in terms of appropriateness, feasibility, and practicality and provided recommendations for final improvement before reporting the completed guideline.

5. Data Analysis

Quantitative data from the questionnaire were analyzed using frequency, percentage, mean, and standard deviation. Frequency and percentage were used to describe the general information of respondents, including participant group and gender. Mean and standard deviation were used to analyze the current situation, problems, needs, and guideline components related to Wushu arts routines promotion.

Qualitative data from the in-depth interviews and focus group discussions were analyzed using content analysis. The researcher categorized the data according to major themes, including planning, organizing, leading, controlling, policy, people, program, place, external environmental factors, and needs for improvement. Expert recommendations were synthesized and used to develop and refine the management guidelines.

Connoisseurship evaluation data were analyzed using the mean and standard deviation. The results were interpreted according to the five-level rating scale to determine the appropriateness, feasibility, and practicality of the guidelines developed.

6. Statistics Used in Data Analysis

The statistics used in this study included frequency, percentage, mean, standard deviation, IOC, Cronbach's Alpha, and content analysis. Frequency and percentage were used to present

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demographic data. Mean and standard deviation were used to analyze questionnaire responses and expert evaluation results. IOC was used to examine the content validity of the research instruments. Cronbach's Alpha was used to examine the reliability of the questionnaire. Content analysis was used to analyze qualitative data from interviews and focus group discussions.

7. Research Process

Step 1 was to investigate the current situation, problems, and needs related to Wushu arts routines in middle schools. This step included reviewing related literature, developing the questionnaire based on POLC, 4Ps, and PESTLE frameworks, examining questionnaire validity using IOC, distributing the questionnaire to respondents from five middle schools, analyzing the quantitative data, and conducting in-depth interviews with five experts.

Step 2 was to develop the management guideline for promoting Wushu arts routines in middle schools. The first draft of the guideline was developed based on quantitative and qualitative findings and structured according to the PDCA cycle. A focus group discussion with 15 experts was conducted to evaluate and improve the draft guidelines. The guidelines were revised according to expert recommendations.

Step 3 was to evaluate the developed management guidelines. A connoisseurship evaluation was conducted with five experts to assess the appropriateness, feasibility, and practicality of the guidelines.

Step 4 was to finalize and report the management guidelines. The researcher revised the guideline based on connoisseurship evaluation results and summarized the final management guideline for promoting Wushu arts routines in middle schools in Nanchang City, Jiangxi Province.

Results

The presentation of research results was organized according to the research objectives as follows:

Objective 1: To investigate the current situation, problems, and needs related to the promotion of Wushu activities in middle schools in Nanchang City, Jiangxi Province.

Objective 2: To develop management guidelines for promoting Wushu activities in middle schools.

Objective 3: To evaluate the appropriateness, feasibility, and practicality of the developed management guidelines through connoisseurship evaluation.

1. To investigate the current situation, problems, and needs.

Questionnaire survey and experts' interviews on the current situation, problems, and needs

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To investigate the current situation, problems, and needs, this study employed a questionnaire survey among stakeholders from five middle schools in Nanchang City, China. The population included students, instructors, executives, and community/parents. The sample size was determined using the Taro-Yamane formula at a 95% confidence level, and stratified random sampling was applied to ensure representation. A total of 492 respondents participated in the study. Data were collected using a five-point Likert scale questionnaire based on the POLC, 4Ps, and PESTLE frameworks, and analyzed using the mean and standard deviation.

Table 1 Basic Information of Respondents (n = 492)

Items	General Information	n	Percentage (%)
Status	Student	390	79.27
	Instructors	17	3.46
	Executives	15	3.05
	Community/Parent	70	14.22
	Total	492	100.00
Gender	Male	258	52.44
	Female	234	47.56
	Total	492	100.00

From Table1, the majority of respondents were students, accounting for 390 individuals (79.27%), followed by community/parent representatives with 70 individuals (14.22%). Instructors and executives accounted for 17 individuals (3.46%) and 15 individuals (3.05%), respectively. Regarding gender, 258 respondents (52.44%) were male, and 234 respondents (47.56%) were female.

The findings revealed that the overall current situation, problems, and needs related to the promotion of Wushu activities in middle schools in Nanchang City were at a moderate level ($\bar{x}$ = 2.94, SD = 0.82). Among the three dimensions, external factors (PESTLE) received the highest mean score ($\bar{x}$ = 3.24, SD = 0.75), followed by internal factors (4Ps) ($\bar{x}$ = 3.14, SD = 0.77) and POLC management principles ($\bar{x}$ = 3.07, SD = 0.79). The findings indicated that stakeholders recognized the educational, moral, and health benefits of Wushu activities; however, several management challenges remained.

Both questionnaire and in-depth interview results consistently identified eight major problems affecting the promotion of Wushu activities: (1) lack of qualified Wushu teachers, (2) insufficient facilities and equipment, (3) limited budget and financial support, (4) lack of a

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structured curriculum, (5) weak policy implementation, (6) poor coordination among stakeholders, (7) low student motivation, and (8) inadequate monitoring and evaluation systems.

Based on these findings, management guidelines were developed through a focus group discussion with 15 experts. The guidelines were structured according to the PDCA cycle and integrated with POLC management principles, the 4Ps framework, and PESTLE analysis. The final guideline addressed all eight problem areas and consisted of 136 operational components, including 34 components in the Plan phase, 45 in the Do phase, 29 in the Check phase, and 28 in the Act phase.

The developed guideline was subsequently evaluated through connoisseurship by five experts. The results indicated that the guideline achieved very high levels of appropriateness ($\bar{x}$ = 4.70, SD = 0.48), feasibility ($\bar{x}$ = 4.49, SD = 0.55), and practicality ($\bar{x}$ = 4.53, SD = 0.54), suggesting that the guideline is suitable for application in middle schools and may support a more systematic approach to promoting Wushu activities.

2. To develop management guidelines (Focus group with 15 experts)

The management guidelines were developed through a focus group discussion with 15 experts, including executives, instructors, staff members, and stakeholders. The experts reviewed and refined the draft guidelines to improve their clarity, feasibility, practicality, and applicability. Based on their recommendations, the final guideline was developed using the PDCA cycle integrated with POLC management principles, the 4Ps framework, and PESTLE analysis.

The developed guideline addressed eight major problems in promoting Wushu activities in middle schools, namely lack of qualified teachers, insufficient facilities and equipment, limited budget and financial support, low student motivation, lack of a structured curriculum, weak policy implementation, poor coordination among stakeholders, and inadequate monitoring and evaluation systems. The guideline consisted of 136 operational components, including 34 components in the Plan phase, 45 in the Do phase, 29 in the Check phase, and 28 in the Act phase. Overall, the guideline provides a systematic framework for planning, implementation, monitoring, evaluation, and continuous improvement of Wushu activities in middle schools.

3. To evaluate the appropriateness, feasibility, and practicality

The developed management guidelines were evaluated by five experts through connoisseurship evaluation. The results indicated that the guidelines achieved very high levels of appropriateness ($\bar{x}$ = 4.70, SD = 0.48), feasibility ($\bar{x}$ = 4.49, SD = 0.55), and practicality ($\bar{x}$ = 4.53, SD = 0.54). Among the eight problem areas, the highest ratings were found for the guideline addressing inadequate monitoring and evaluation systems, followed by low student motivation and lack of a structured curriculum. Although the guideline for limited budget and financial support received comparatively lower scores, it was still rated at a very high level. Overall, the

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findings suggest that the PDCA-based guideline integrated with POLC, 4Ps, and PESTLE frameworks is highly appropriate, feasible, and practical for addressing the major challenges in promoting Wushu activities in middle schools.

Discussion

The findings revealed that the promotion of Wushu activities in middle schools in Nanchang City continues to face several challenges, including shortages of qualified teachers, inadequate facilities and equipment, limited financial support, low student motivation, lack of a structured curriculum, weak policy implementation, poor stakeholder coordination, and insufficient monitoring and evaluation systems. These findings indicate that both internal management factors and external environmental conditions influence the effectiveness of Wushu promotion in schools.

The results are consistent with previous studies emphasizing that teacher quality, curriculum structure, learning resources, and management support are critical factors affecting educational program success (Darling-Hammond & Hyler, 2020; OECD, 2021; Ornstein & Hunkins, 2023). In addition, motivation and stakeholder collaboration were found to be important factors influencing student participation and program sustainability, supporting the findings of Ryan and Deci (2020) and Bush (2020). The findings also highlight the importance of systematic monitoring and evaluation, which aligns with quality management principles proposed by Evans and Lindsay (2021).

Based on the identified problems and needs, the management guideline was developed through the integration of POLC management principles, the 4Ps framework, PESTLE analysis, and the PDCA cycle. The connoisseurship evaluation demonstrated very high levels of appropriateness, feasibility, and practicality, indicating strong expert agreement regarding the applicability of the guideline. These findings suggest that the developed guideline may support a more systematic approach to promoting Wushu activities and has the potential to improve management effectiveness following further implementation and field testing in middle school contexts.

Recommendation

Practical Application

1) Schools should apply the developed PDCA-based management guideline systematically to improve planning, implementation, monitoring, and continuous improvement of martial arts programs.

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2) Administrators should support teacher development, adequate resource allocation, and clear coordination systems to enhance program effectiveness.

3) Schools should establish simple monitoring and feedback systems to support data-driven decision-making and long-term sustainability.

Future Research

1) Future studies should examine the effectiveness of the developed guideline through experimental or longitudinal research designs.

2) Future research should expand the study to different educational levels or regions to compare contextual differences.

3) Further studies should explore technology-based management systems and additional theoretical frameworks related to educational management and student motivation.

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