

A Study Needs and Guidelines to Development of Physical Education Teachers' Professional Ability in Private Undergraduate Colleges in Henan Province

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Abstract

This study aimed to achieve three primary objectives: (1) to identify the components and indicators of teacher competence challenges in private undergraduate colleges and universities, (2) to examine the existing challenges, current conditions, ideal standards, and strategic solutions for teachers in these institutions, and (3) to design an appropriate program to enhance faculty capacity within private undergraduate education. The sample consisted of 675 respondents from five private colleges. This study employed a mixed-method design with questionnaire surveys and expert interviews. Data were analyzed using Microsoft Excel and SPSS, employing descriptive statistics and content analysis.

The key findings were as follows:

1. The development of competence among physical education (PE) teachers in private colleges and universities was primarily influenced by three core factors: professional teaching, PE knowledge, and professional ability. Additional influences included the PE knowledge system, teaching conditions, professional ethics, health care, and practical training.
2. The recognition rate of the three main factors—professional teaching, PE knowledge, and professional ability—exceeded 90%, whereas other related factors received lower recognition rates.

3. The professional teaching competence of PE teachers was reflected in five aspects: instructional ability, educational engagement, guidance of sports activities, sports organization skills, and sports science research.

4. Among all the evaluated factors, only performance management in PE exceeds the ideal level. Other factors still exhibit a gap when compared to the desired standard.

5. To effectively enhance professional competence, the 70:20:10 learning model was recommended: 70% of learning should be experiential, 20% should come from social learning and online resources, and 10% should be gained through ongoing in-service training.

Keywords: Physical education teacher; Professional ability; Development demand; Henan

Introduction

Universities promote social progress, especially in teaching, research and management. In Henan Province, private colleges are growing and the importance of physical education (PE) is increasing. Nevertheless, the professional development of physical education teachers in these institutions still faces challenges. Their teaching methods are innovative, but they are slow to adopt new sports concepts. Research into the needs and guidance for the professional growth of physical education teachers can enrich theory and support practical improvements in teacher quality and policy making. The literature review shows that while there are policies to protect teachers' rights, specific measures for teachers in private colleges are inadequate. Research has identified problems such as an imbalance in faculty demographics and the need for high-level talent recruitment, as well as a lack of training and research resources, proposing solutions such as school-industry collaboration. However, previous studies have been mostly descriptive and lack detailed analysis of professional development needs, precise coaching strategies, and relevance to school sports programs and student needs, suggesting a need for a more comprehensive system.

This study focuses on the development of PE teachers' professional competence in private undergraduate colleges in Henan Province. Research questions include the composition of teachers' abilities, their current status, their ideals, the challenges they face, and how to design development plans. The purpose of this study is to provide effective development guidance strategies for PE teachers in private undergraduate colleges in Henan Province by analyzing the current situation and needs. The researcher has research experience in the field of physical education, is familiar with teaching practice and theory, and can examine the problem from the theoretical and practical level. The research aims to reveal the current situation and problems of

PE teachers' professional ability development, provide data support for policy formulation, propose development strategies and guidance programs, promote teachers' professional growth, improve education quality, and lay a foundation for subsequent research. The current research mainly focuses on the composition and influencing factors of PE teachers' professional competence, but the precise analysis of demands and the provision of personalized guidance strategies still need further research. It is hoped that this study can provide reference for sports development policies of private undergraduate colleges, help colleges and universities optimize the construction of teachers, improve the training system and incentive mechanism, enhance the level of school sports, and provide guidance for teachers' professional development.

The ability development of PE teachers in private colleges and universities is mainly determined by three core factors: professional teaching, sports knowledge and professional ability, and is affected by sports knowledge system, teaching status, ethics, health care and practice. Among them, the recognition rate of professional teaching, professional ability and sports knowledge is higher, while the recognition rate of other factors is lower. Professional teaching ability includes five aspects: physical education teaching, educational work, guiding activities, organizational ability and scientific research. The 70:20:10 theory should be used as a guide in improving teachers' competence, that is, learning mainly through experience, supplemented by the experience of others and online learning, as well as continuous on-the-job training.

This research paper puts forward the needs and guidance for the development of PE teachers' professional ability in private undergraduate colleges in Henan Province, aiming at providing more choices for the improvement of higher vocational teachers' ability and promoting the 70:20:10 theory.

Research Objectives

1. To clearly identify the components and indicators of teacher competence challenges in private undergraduate colleges and universities.
2. To examine the existing challenges, current conditions, ideal standards, and strategic solutions for teachers in these institutions.
3. To design an appropriate program to enhance faculty capacity within private undergraduate education.

Literature Review

1. Evolution of Private Higher Education in China

China's higher education system has experienced significant transformation over the past century. Lima et al. (2020) outlined its evolution in seven stages shaped by political, economic, and social shifts. Since 1949, the system has become more diverse and inclusive of different institutional types.

Hu and Ghasemy (2024) classified private colleges into four types: public undergraduate affiliated colleges, private undergraduate affiliated colleges, independent higher vocational colleges, and vocational colleges transformed from secondary institutions. These institutions have played an essential role in producing skilled human resources for national development.

The 1978 reform shifted the focus toward practical and vocational education, leading to rapid growth in private institutions. In Henan Province, with 56 private undergraduate colleges mainly located along the Yellow River, graduates typically enter state-owned enterprises and private companies, significantly contributing to the workforce and regional development (Liu & Hardy, 2021).

2. Teacher Competency Models and Educational Quality

Teacher competency is a critical factor influencing student quality, especially in private colleges. Wen et al. (2025) emphasized that the professional expertise and dedication of teachers are core elements for cultivating students' capabilities. In Henan's 55 private undergraduate colleges, teachers' skills are directly linked to the quality of the regional workforce and students' innovation potential.

Yanuarti and Treagust (2016) defined teacher competency as the integration of personal ability, effort, and external support, expressed as $P = E \times A \times S$. Their model includes mastery of curriculum standards, application of teaching materials, educational psychology, classroom management, and reflective practices. Academic viewpoints generally categorize teacher competencies into three types:

- 1) Hierarchical Competency: General, professional, and ethical teaching capabilities.
- 2) Multiple Abilities: Including imagination, organization, and innovation.
- 3) Practical Skills: Control over textbooks, adaptive teaching, and emergency response.

However, teachers in private colleges face multiple challenges. Despite receiving civil service-level benefits, they lack standardized competency development plans. Specifically:

- Training is not structured under a clear framework such as 70:20:10.
- Experience sharing and academic exchange are insufficient.
- Institutions often lack scientifically grounded training systems.

3. 70:20:10 Framework for Teacher Training

The 70:20:10 model by Johnson et al. (2018) emphasizes that effective professional development comes 70% from practical experience, 20% from social learning, and 10% from formal training. Widely recognized in global teacher education, it supports long-term skill development through real-world application and collaboration.

In Henan, adoption of this model remains limited. Professional growth often lacks institutional structure, leaving teachers to manage development individually. This contrasts with international best practices that stress the value of project-based learning, reflective practice, and collaborative support (Markula & Aksela, 2022).

Methods for improving teacher capabilities include:

- Project-based learning and real-world application.
- Structured work assignments aligned with professional goals.
- Peer mentoring and online platforms for continuous learning.
- In-service workshops and applied training.

Jia (2024) further emphasized that enhancing college teacher capabilities is essential for educational reform. Institutions should integrate practical research and innovation strategies into development programs to drive meaningful teaching transformation.

Conceptual Framework

This research is a research study to explore the needs and guidance of PE teachers' professional ability development in private undergraduate colleges in Henan Province. The researchers combined PE teachers' professional ability with students' health, PE talent training and education quality improvement to construct the research conceptual framework. Details are as follows.

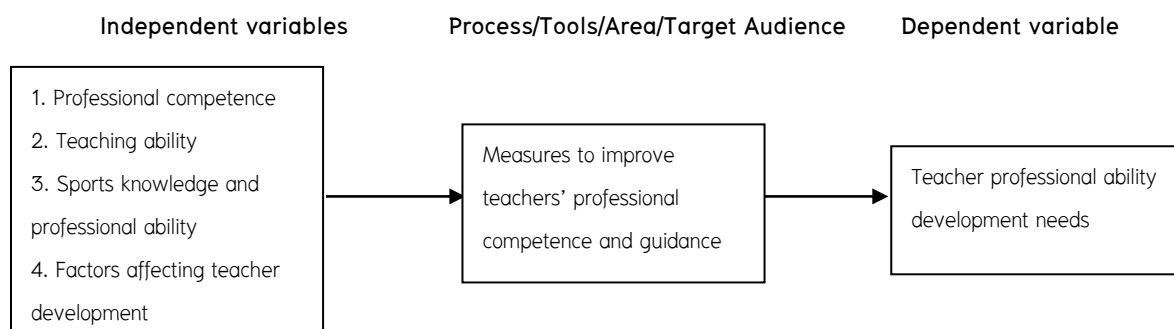


Figure 1 Conceptual Framework

Research Methodology

1. Research Design

The study followed a three-stage sequential exploratory design, integrating both quantitative and qualitative methods. The structure was aligned with the study's three primary research questions: 1) What are the components and indicators of teacher competence in Henan's private colleges? 2) What are the current and desired states of teacher competence, and what strategies can be proposed for improvement? 3) How can a structured capacity-building program be developed to enhance teacher ability?

2. Research Stages and Procedures

This chapter outlines the study's design and process, focusing on “developing a plan to improve teacher capacity in private undergraduate colleges in Henan Province”. Specific methods and a three-stage research procedure are detailed, including program steps and expected outcomes. Two questionnaire surveys were conducted based on three research questions. The stages are:

Stage 1: Study the components and indicators of teacher competence in Henan's private colleges. This stage aimed to define key components of teacher competency through a literature review and initial expert interviews. Key procedures included:

- Document analysis of national policies, institutional reports, and academic literature.
- Semi-structured interviews with 12 experts in higher education and teacher development.
- Extraction and synthesis of core competency indicators using thematic analysis.

Stage 2: Explore the current state, desired state, and strategies for teacher competence research in Henan's private colleges. This stage used survey instruments to evaluate the existing and ideal conditions of teacher competence in the target institutions. 1) Sample: A stratified

random sample of 675 respondents (teachers and administrators) from five private undergraduate colleges in Henan Province. 2) Survey Design: A structured questionnaire consisting of 4 main sections: (1) demographic information, (2) current competency levels, (3) ideal competency benchmarks, and (4) proposed strategies. 3) Pilot Testing: The questionnaire was piloted with 30 participants to ensure clarity and content validity. 4) Reliability: Cronbach's alpha values ranged between 0.82 and 0.89, indicating high internal consistency. 5) Data Analysis: Descriptive statistics (mean, SD) and inferential analysis were conducted using SPSS.

Stage 3: Design a program to enhance teacher ability in Henan's private undergraduate colleges. Informed by findings from Stages 1 and 2, this stage focused on designing a comprehensive training program based on the 70:20:10 framework

Each stage is detailed, including steps and expected outcomes, as illustrated in Figure 2.

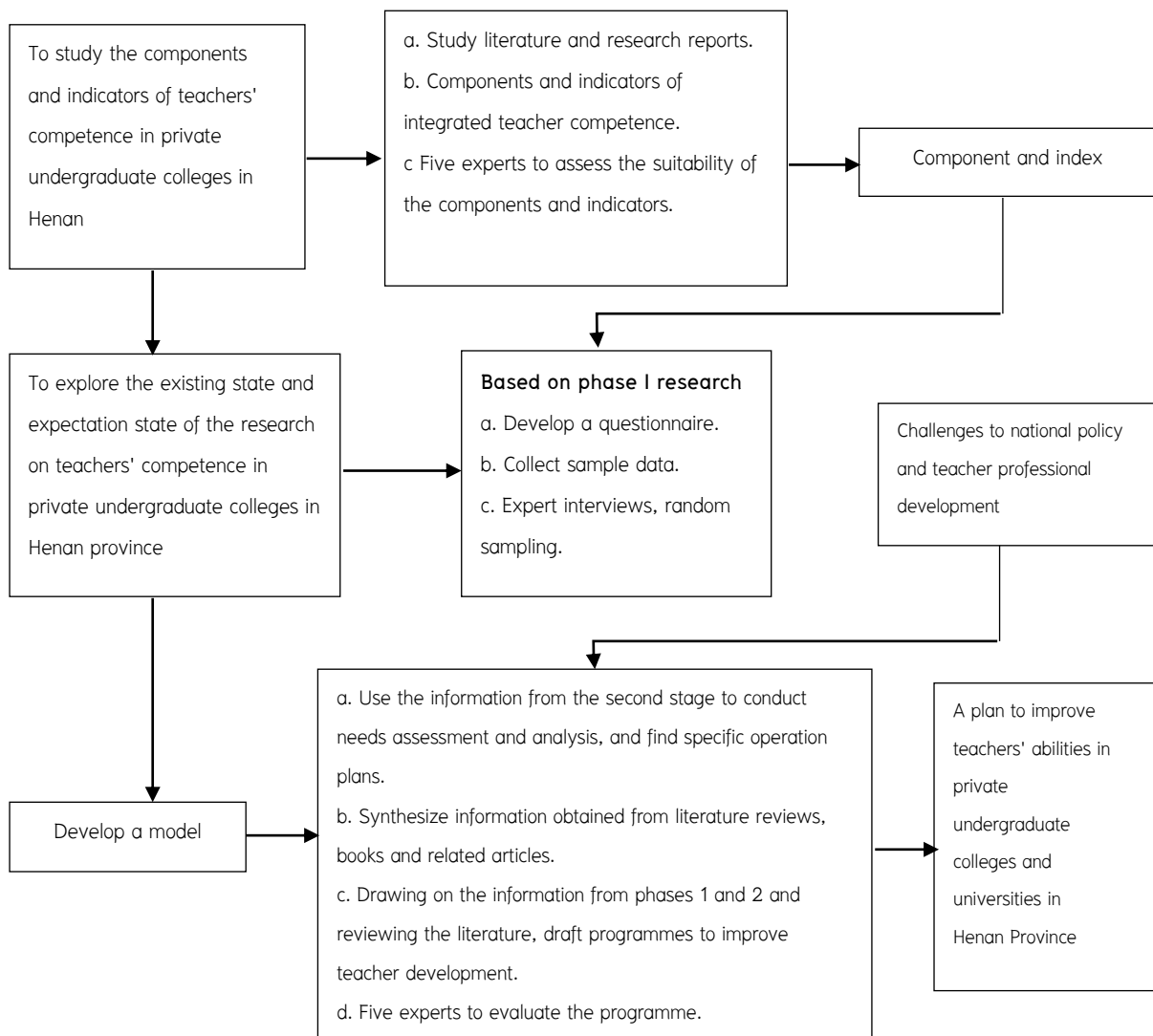


Figure 2 A plan to improve teachers' abilities in private undergraduate colleges and universities in Henan Province.

3. Qualitative Data Collection and Analysis

Expert interviews and focus groups were conducted to gain deeper insight into contextual issues and program feasibility. All qualitative data were recorded, transcribed, and analyzed using thematic content analysis. Triangulation was employed by comparing qualitative themes with survey findings to ensure data consistency and validity.

4. Participants' Demographic Profile

Participants included lecturers, academic advisors, and department heads. Demographic details: Gender: 60% female, 40% male; Teaching experience: 3–20 years; Academic background: 80% with master's degrees, 15% doctoral, 5% bachelor's; Age: 25–55 years

5. Ethical Considerations

This study adhered to standard research ethics: 1) Informed Consent: All participants were informed of the research purpose, procedures, and their rights, and signed consent forms prior to data collection. 2) Anonymity and Confidentiality: Participant identities and institutional affiliations were anonymized. 3) Approval: The study was reviewed and approved by the institutional research ethics committee.

Research Results

1. The results showed that the main factors affecting the development of PE teachers' professional ability in private undergraduate colleges

The survey revealed that professional teaching, professional ability, and physical education knowledge received high approval rates (over 90%), while factors like interpersonal relationships, social influences, and family concepts had low acceptance, with only 49.2% approval.

Table 1 Main Factors in the development of PE teachers' professional ability in private undergraduate colleges the gap between reality and ideal (n=675)

Factor	Professional Ethics	Professional Teaching	Vocational Ability	Sports Knowledge	Physical Education	Morality And Ethics	Hygiene And Health	Rests
Ideal number of participants	596	634	612	661	569	578	567	322
Actual identification number	576	611	589	643	560	554	532	312
Factor ideal rate %– Factor importance	88.3– higher	93.9– Very high	90.7– Very high	97.9– Very high	84.3– higher	85.6– higher	84.0– higher	49.2 Do not agree
Factor reality recognition rate %	85.3	90.5	87.3	93.9	83.0	81.5	78.8	46.2
Rate difference	3.0	3.4	3.4	4.0	1.3	4.1	5.2	3.0
The gap between reality and ideal	A large gap	A large gap	A large gap	A large gap	Little discrepancy	A large gap	Big gap	A large gap

2. The results showed that Current situation of PE teachers' professional teaching ability

The professional teaching ability of PE teachers is usually reflected from five aspects: PE teaching ability, educational work ability, guiding sports activities, sports organization ability and sports scientific research ability. They are indispensable and influence each other to form the professional teaching ability of PE teachers.

2.1 Physical education teaching ability

The study found gaps in all five teaching ability factors among PE teachers in the surveyed private colleges. The largest differences were in language expression (9.1%) and action demonstration (5.2%), while smaller gaps were observed in protective help (3.5%), self-control (2.9%), observation (1.8%), and thinking ability (1.6%).

Table 2 Physical education teachers' physical education teaching ability factors gap between reality and ideal (n=675)

Factor	Language Expression	Action Modeling	Protection Helps	Self-Control Ability	Observational Ability	Ability of Thinking
Ideal Identification Number/realistic identification number	658/597	621/586	601/577	582/562	563/551	514/503
Factor ideal rate%– Factor importance	97.5– Very high	92.0– Very high	89.0– higher	86.2– higher	83.4– higher	76.1– ordinary
Factor reality recognition rate %	88.4	86.8	85.5	83.3	81.6	74.5
Rate difference	9.1	5.2	3.5	2.9	1.8	1.6
The gap between reality and ideal	Big gap	Big gap	A large gap	A large gap	Small gap	Small gap

2.2 Educational work ability

The factors with the highest recognition in influencing teaching ability are understanding students, handling events, textbook analysis, and ideological education—each with over 90% awareness. While adaptation and enlightening education are also valued, their awareness rates are slightly lower, at over 80%.

Table 3 Weight of factors affecting PE teachers' educational work ability (n=675)

Factor	Ideological Education	Teaching Material Mining	Handle Event	To Understand Students	Heuristic Induction	Acclimatization
Identification number	608	611	613	632	597	562
weight%	90.1	90.1	90.8	93.6	88.4	83.5
Identity status	Very High	Very High	Very High	Very High	Higher	Higher

2.3 Guide physical activities

The survey of five private colleges showed the largest gap in PE teachers' ability to organize physical activities (10.8%). Smaller gaps were found in group activities (4.7%), training levels (3.5%), emergency response (1.6%), and rehabilitation (0.5%).

Table 4 Difference between reality and ideal in physical activity factors guided by PE teachers (n=675)

Factor	Organize a competition	Group activity	Training level	Rehabilitation exercise	Emergency processing
Ideal identification Number/Realistic identification number	659/586	623/591	612/586	573/569	573/562
Factor ideal rate%– Factor importance	97.6– very high	92.3– very high	90.7– very high	84.9– higher	84.9– higher
Factor reality recognition rate %	86.8	87.6	85.5	84.3	83.3
Rate difference%	10.8	4.7	3.5	0.5	1.6
Thiambutene reality and ideal	A far cry from	Big Gap	Big Gap	The gap is very small	Small gap

2.4 Sports organization ability

Expert interviews identified four key areas influencing PE teachers' organizational ability: classroom teaching, group activities, amateur training, and performance management. In five surveyed private colleges, notable gaps were found in classroom teaching (7.8%), group activities

(4.7%), and amateur training (2.9%). Interestingly, performance management exceeded expectations due to teachers' self-reflection and strict standards.

Table 5 Gap between reality and ideal factors of PE teachers' PE organization ability (n=675)

Factor	Classroom Teaching	Group activity	Amateur training	Sports performance management
Ideal identification number/realistic identification number	647/595	623/591	609/589	568/574
Factor ideal rate %– Factor importance	95.9– very high	92.3– very high	90.2– very high	84.1– higher
Factor reality recognition rate %	88.1	87.6	87.3	85.0
Rate difference%	7.8	4.7	2.9	0.9
The gap between reality and ideal	Big gap	Big gap	A large gap	Better Than ideal

2.5 Sports science research

The survey of 675 samples revealed significant gaps in PE teachers' understanding and practice of sports science research. The largest gap was in scientific writing (11.5%), followed by innovation ability (4.9%). Smaller gaps were found in evaluating students' fitness (1.6%) and using high-tech tools (1.1%).

Table 6 Gap between reality and ideal of PE teachers in PE science research factors (n=675)

Factor	Scientific and technological writing	Textbook analysis	Student physique evaluation	High-tech technology application	Innovation ability
Ideal identification number/Realistic identification number	671/593	615/597	609/598	570/562	556/523
Factor ideal rate %– Factor importance	99.4– very high	1.1– very high	90.2– very high	84.4– higher	82.4– higher
Factor reality recognition rate %	87.9	88.4	88.6	83.3	77.5
Rate difference%	11.5	2.7	1.6	1.1	4.9
The gap between reality and ideal	A far cry from	A large gap	Small gap	Small gap	Big gap

3 . The results showed that the basic situation of PE teachers' PE knowledge and professional ability.

The survey of five private colleges revealed a major gap in PE teachers' technical skills (10.9%) and teaching management (6.1%). There was also a noticeable gap in theoretical knowledge (2.6%), while the difference in balancing work and study was smaller (1.8%).

Table 7 Gap between reality and ideal in PE knowledge and professional ability of PE teachers in private colleges and universities (n=675)

Factor	Specialized Technology	Theory of physical education	Teaching and management	Work and study
Ideal identification number/realistic identification number	665/591	661/643	623/582	582/570
Factor ideal rate %– Factor importance	98.5– very high	97.9– very high	92.3– very high	86.2– higher
Factor reality recognition rate %	87.6	95.3	86.2	84.4
Rate difference%	10.9	2.6	6.1	1.8
The gap between reality and ideal	A far cry from	A large gap	Big gap	Small gap

4. The results showed that other factors affecting the related development of PE teachers

In developing PE teachers' abilities in private colleges, key areas include the PE knowledge system, teaching status, ethics, and health care. While physical education received the highest attention (92.3%) and other areas exceeded 80%, significant gaps remain—particularly in sports knowledge (7.7%) and ethics (7.3%). Health care and practice showed the smallest gap (0.5%).

Table 8 Gap between reality and ideal of PE teachers' other abilities in private colleges and universities (n=675)

Factor	Sports knowledge system	Physical education teaching situation	Morality ethics	Healthcare and Practice
Ideal identification number/realistic identification number	653/601	649/623	621/572	572/569
Factor ideal rate %– Factor importance	96.7– very high	96.1– very high	92.0– very high	84.7– higher
Factor reality recognition rate %	89.0	92.3	84.7	84.2
Rate difference%	7.7	3.8	7.3	0.5
The gap between reality and ideal	Big gap	A large gap	Big gap	The gap is small

5. The results showed that the main measures to improve the professional ability of PE teachers

Private colleges should develop PE teachers' abilities using the 70:20:10 model: 70% through hands-on practice to improve ethics and skills, 20% through learning from peers, and 10% via formal training. Teachers should also engage in in-service training, experience sharing, and continuous self-improvement.

Discussions

1. Redefining Professional Competence Structures

Based on an in-depth investigation of PE teachers in Henan's private undergraduate colleges, this study redefines the structure of professional competence into three core domains: professional ethics, teaching capability, and applied professional skills. This refined model builds upon Wen et al. (2025) conceptual framework, but gives greater weight to application-oriented skills and situational adaptability, which are increasingly relevant in private institutions with diverse educational environments.

2. The Role of Experiential Learning and Network Interaction

Findings highlight that teacher development is heavily influenced by experiential learning. Drawing on the 70:20:10 framework proposed by Johnson et al. (2018), this study confirms that 70% of teacher development stems from practical experiences, 20% from peer and network interactions, and only 10% from formal instruction, which emphasizes the growing value of embedded, work-based learning in professional development programs.

3. Policy Implications and Strategic Recommendations

Several systemic issues were identified in the training and evaluation of PE teachers in private colleges. Policy-level implications include: 1) Funding Reform: Allocate targeted funds for in-service training based on experiential learning models. 2) Certification Systems: Develop micro-credential frameworks recognizing learning through practice and peer mentoring. 3) Evaluation Structures: Redesign teacher evaluation systems to account for workplace performance, not just academic qualifications.

These suggestions align with Johnson et al. (2018), who advocates for multi-dimensional and adaptive career development systems. Accordingly, private undergraduate institutions should integrate flexible career paths, blended learning environments, and mentorship programs to sustainably enhance teacher capacity.

Knowledge from Research

The purpose of this study is to explore the development needs of PE teachers' professional competence in private undergraduate colleges in Henan Province and provide guidance accordingly. The following is a detailed description of the conceptual framework of this study:

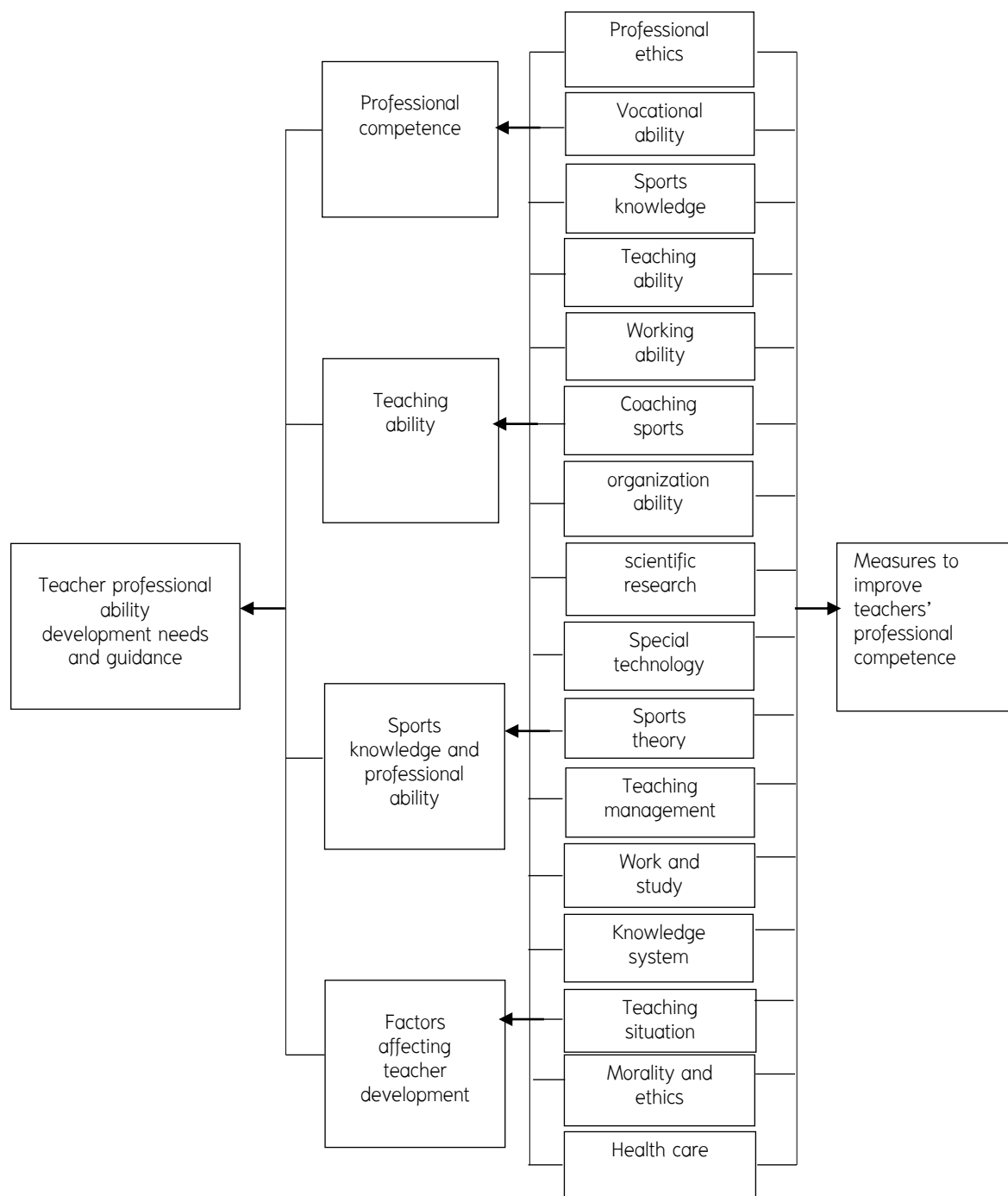


Figure 3 Frame flow chart

Conclusion

1. The ability development of PE teachers in private colleges and universities is mainly determined by three core factors: professional teaching, sports knowledge and professional ability, and is also influenced by sports knowledge system, teaching status, ethics, health care and practice.

2. Professional teaching, professional ability and sports knowledge are the main factors affecting the development of teachers' ability, and the recognition rate is over 90%, among which sports knowledge has the highest impact on teaching ability (97.9%). The recognition rate of professional ethics, sports ethics and health care is also high (over 80%), while the recognition rate of other factors such as interpersonal relations, social factors and family values is low (49.2%).

3. The professional teaching ability of PE teachers includes five aspects: PE teaching, educational work, guiding activities, organizational ability and scientific research.

4. Among the many influencing factors, only sports performance management exceeds the management level of the ideal goal, while other factors have a gap with the ideal goal.

5. The promotion of PE teachers' professional ability in private colleges and universities should be based on the 70:20:10 theory, that is, 70% learn through experience, 20% learn from others' experience and online learning, and 10% participate in on-the-job training.

Suggestions

1. For Institutions

Private colleges should adopt the 70:20:10 model to structure teacher development—emphasizing practical experience, peer learning, and formal training. They should organize workshops, promote mentoring systems, support research, and invest in learning resources. Institutions should also offer personalized development plans and recognize informal learning through micro-credentials.

2. For Policy-Makers

Education authorities should establish competency-based certification systems that value experiential learning. Funding should support varied development formats like training centers and industry-academic partnerships. Policies should promote ethical standards, health education, and collaborative teacher development across institutions.

3. For Teachers Themselves

PE teachers should take initiative in their own development through reflective practice, peer exchange, and continuous learning. They are encouraged to participate in training, seek certifications, attend academic events, and engage in both online and hands-on learning to strengthen their skills and adaptability.

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