



Selected Teaching Competency for Physical Education Teachers under the Applied Talent Cultivation Background

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Abstract

Background and Aim: Nowadays, the deepening reform of the teaching mode of Universities is constantly developing with the improvement of demand, Skill-based talent training has become an inevitable requirement for universities to comply with the education reform. In recent years, sports professional training in management, teamwork, social interaction, and other aspects of comprehensive competency appear to be insufficient, which puts forward a higher demand for the teaching competency of university physical education teachers.

Materials and Methods: Using IOC expert testing, 21 experts conducted three rounds of Delphi indicator screening, and the AHP analytic hierarchy process assigned weights to the indicators. The competency of physical education teachers in universities was finally obtained (3 first-level indicators, 12 second-level indicators, and 46 third-level indicators).

Results: The final results were as follows: 1) In the first level indicators, professional knowledge is considered a fundamental factor for teaching physical education teachers in universities; 2) In the second level, subject-oriented knowledge was considered the most important core factor in the professional knowledge; The competency to organize and guide extracurricular activities was considered the most important core factor; Perceived attitudes toward careers was considered the most important core factor; and 3) In the third level indicators, basic theoretical knowledge of physical education, teaching experience and knowledge of lessons learned, knowledge of Sports Injury Prescription and Rehabilitation etc., which were considered the most important core factor.

Conclusion: It is recommended that school leaders and physical education teachers in each University establish new teaching concepts, update their teaching philosophy, strengthen further training for physical education teachers in their schools, and aim at comprehensive development, to establish the high-quality teaching competence of physical education teachers' universities.

Keywords: Teaching competency; Physical Education; Applied Talent Cultivation Background

Introduction

The development of global higher education has put forward new requirements for the quality of talent training, China also needs to improve the quality of higher education to promote the development of modernization, the quality of higher education is related to the future of the country, science, and technology to develop the country cannot be separated from the talent to help. The Outline of the National Medium- and Long-term Talent Development Plan (2010-2020), referred to as the Outline, puts forward: "The overall goal of talent development in China in 2020, namely, to train and create a large-scale, structurally optimized, reasonably laid out, and well-qualified talent team (Dan, 2019); In March 2012, the Ministry of Education issued Several Opinions on Comprehensively Improving the Quality of Higher Education", which clearly pointed out that improving the quality of higher education teaching and the level of quality of personnel training, strengthening the training of applied talents, and promoting the transformation of economic and social development is the primary task of China's universities and Universities of development and reform (Chen, 2005); "National" 14th Five-Year "period of the Talent Development Plan" put forward: accelerate the construction of the world's important talent center and innovation highland, to create a large-scale young scientific and technological talent team (Liao, 2016). The evaluation index composition of teaching competency of university physical education teachers is a realistic demand and a connotation requirement for cultivating high-quality physical education professionals. To evaluate teaching competency of physical education teachers is a necessary means and important way to understand and grasp the status quo of teachers' teaching competency, a necessary prerequisite and an important basis for carrying out the



practice of evaluating teachers' teaching competency a realistic demand for the construction of teaching development of physical education teachers in Universities, an inevitable requirement for the development of physical education teaching in Universities and the improvement of the quality of education, as well as the urgent need to promote the reform and development of education and teaching in schools.

Through the Web of Science and Google Scholar as well as Zhi.com academic search platform to understand: 1) Previous research is mainly concentrated in the basic education field part, the main research object is the primary and secondary school physical education teacher teaching competency index construction. 2) Previous research in the application of personnel training perspective has less content, more is the context of the overall teacher teaching competency of the discussion, not an in-depth focus on the teaching competency of physical education subjects 3) Previous research has mainly focused on the construction of the evaluation composition of teachers' teaching competency. Empirical research on the evaluation composition has also been carried out. Therefore, this study starts from the perspective of applied talent cultivation, constructs the evaluation index composition of teaching competency of university physical education teachers, and carries out the evaluation practice of physical education teaching competency of teachers with different levels of titles, and the application of this evaluation composition counter propagates the enhancement of the teaching competency of Universities physical education teachers and the improvement of the relevant evaluation composition. The study promotes the optimization of technical talent structure and innovation of university development mode, eases the employment pressure of university students, and meets the demand of the talent market. We can see the conclusions that the competency indicators of university physical education teachers were finally obtained (3 first-level indicators, 12 second-level indicators, and 46 third-level indicators). The conclusion is as follows: 1. In the first level indicators, professional knowledge is considered an essential factor for teaching physical education teachers in universities; In the secondary indicators, disciplinary knowledge and information technology knowledge are considered the most important core factors in the dimension of professional knowledge; In the dimension of professional competence, the competency to organize and guide extracurricular activities is considered the most important core factor, while in the dimension of professional attitude, the cognitive attitude towards the profession is considered the most important core factor; Among the three-level indicators, basic theoretical knowledge of sports, teaching experience and handling, teaching evaluation ability, and emphasis on professional development are the most important.

Therefore, this study starts from the perspective of applied talent cultivation, constructs the evaluation index composition of teaching competency of university physical education teachers, and carries out the evaluation practice of physical education teaching competency of teachers with different levels of titles, and the application of this evaluation composition counter propagates the enhancement of the teaching competency of university physical education teachers and the improvement of the relevant evaluation composition. The study promotes the optimization of technical talent structure and innovation of university development mode, eases the employment pressure of university students, and meets the demand of the talent market.

Objectives

1. To identify suitable teaching competency of university physical education teachers.
2. To confirm the validity of the indicator questionnaire and determine the quality of the instrument by 5 experts.
3. To determine the draft of selected teaching competency of the university's physical education teachers by the Delphi method.
4. To determine the weights of selected teaching competency of university physical education teachers by AHP.





Literature Review

1. Competency: Competency is complex, in philosophy, it refers to the essential energy of humans, in psychology, it refers to the psychological characteristics of human personality, and in organizational behavior, it refers to the individual characteristics that improve the performance of the work, and it is the necessary condition that affects the efficiency and effectiveness of the individual and the organization in accomplishing a certain task. There are “Two-factor” and “Group Factor” Theories (Thurstone, 1938), which are from Competency from the perspective of psychology. There is competency iceberg composition (McClelland, 1973) from the Perspective of Management and Organizational Behavior.

2. Teaching Competency: To sum up, the core of the pedagogical perspective of teaching Competency is that “teaching Competency is the competency of teachers to use specific teaching materials to engage in teaching activities, to use teaching skills to complete teaching tasks and achieve teaching results, and it is a solid and complex system of teaching behaviors formed by teachers through practice using their theoretical knowledge of teaching”, emphasizing that teaching is a special competency of teaching, emphasizing that teaching is an organic combination of teaching links (before, during and after teaching) and that the effectiveness of the whole teaching process should be promoted through the effective exertion of different teaching skills in different teaching links (e.g., the competency of teaching design before teaching, the competency of teaching organization and implementation during teaching, and the competency of teaching reflection and evaluation after teaching). In short, the pedagogical perspective of teaching Competency is usually regarded as a collection of teaching skills, which is the reflection of teaching behavior at the skill level.

3. Physical Education Teaching Competency: Physical education teaching competency, which is the basic competency of physical education teachers, according to the knowledge and theory of physical education, relies on the teaching objectives and directions, by their teaching level. At the same time, physical education teachers also carry out teaching activities based on the control and understanding of physical education teaching rules, and through theoretical teaching, practical training student feedback, and the formation of cyclical changes. For physical education teachers, teaching competency includes the competency of professional physical education training, the competency to prepare lesson plans, presentation competency, demonstration competency, observation competency, and comprehensive analysis competency (Huang, 2001). To effectively and comprehensively improve the quality of students in colleges and universities, the role played by college and university physical education teaching is crucial. For the cultivation of college and university physical education teachers' education and teaching competency, a detailed analysis was made from the aspects of teachers' competency to prepare lesson plans, oral expression competency, competency to effectively choose teaching methods

4. Cultivation of Applied Talents: Applied talents refer to the application of professional knowledge and skills in the social practice of specialists, who are proficient in social production or social activities in the first line of basic knowledge and basic skills, mainly engaged in first-line production of technical or professional talents. Applied talent training refers to the structural framework and operational organization that can steadily cultivate students to master systematic knowledge, competency, and quality to achieve the goal of applied talent training, which is a combination of the goal, content, academic system, and teaching process and other elements of applied talent training under the guidance of a certain educational ideology (Liu & Zhao, 2011). Applied talents are types rather than levels, applied talents can be divided into different levels, the first level is comprehensive applied talents or leading talents, and the second level is specialized applied talents. The two levels of applied talents are not a simple amplification or reduction in the specifications of knowledge, competency, and quality. In some aspects, there are the same requirements, such as the depth of professional knowledge, practical experience, ideological and moral quality, physical and mental qualities, sense of teamwork, professionalism, etc.



Conceptual Framework

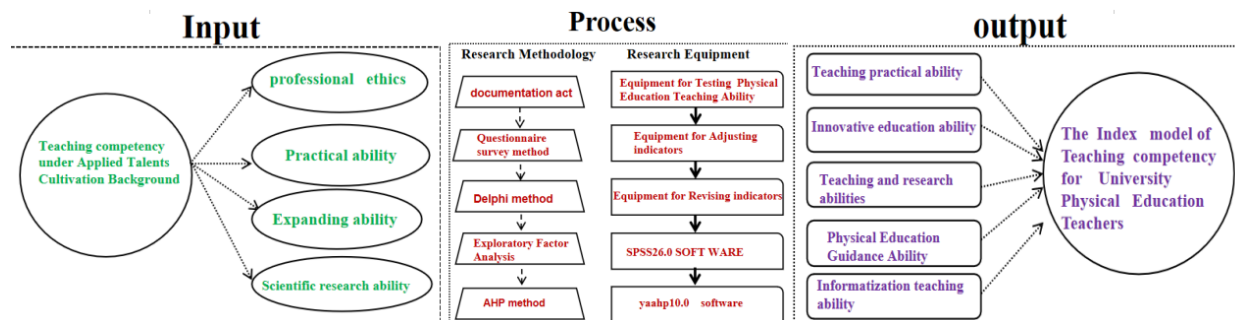


Figure 1: Conceptual framework of the research

Methodology

Based on universities in Shaanxi Province, this paper constructs the evaluation composition of teaching competency of university physical education teachers and then determines the quality of teaching competency of physical education teachers with different titles. The population of this research was sports professors and experts from major universities in Shaanxi Province, 21 experts (more than 10 years of work in the field of sports) were selected from universities in Shaanxi Province as a sample group. The research process of this research was as follows: (1) Review and collect the literature related to the teaching competency of university physical education teachers and categorize and organize it. (2) Interview with experts on the current state of teaching and learning. Develop draft composition. (3) After reviewing relevant literature and expert interviews, we designed questionnaires related to this paper such as 1) Physical education teachers' teaching competency indicator screening questionnaire; 2) Indicator weight assignment questionnaire; and 3) Physical education teachers' teaching competence indicator screening questionnaire. Then, confirm the validity of the indicator questionnaire by IOC. (4) Using the Delphi method, 21 experts were asked to revise the index in 3 rounds to get the revised composition. (5) Using the coefficient of variation (CV) and Kendall's coefficient (W) to confirm the composition. And (6) Using the Hierarchical analysis method (AHP) to determine the division of the weight coefficients of indicators at all levels. In this research, SPSS Amos 26.0 and Excel were used to analyze the relevant data.

Results

The "Evaluation Indicators of Teaching Competency of Physical Education Teachers in Universities" was determined. The evaluation indexes consist of 3 1-level indexes, 12 2-level indexes, and 46 3-level indexes. The table is as follows:

Table 1: Competency of physical education teachers in professional knowledge

1 level	2 level	3 level
A Professional Knowledge (0.7334)	A1 subject-oriented knowledge (0.5046)	A11 (0.4551) Basic theoretical knowledge of physical education
		A12 (0.2627) Knowledge of basic methods and skills in sports
		A13 (0.1411) Knowledge at the forefront of physical education disciplines
		A14 (0.1411) Knowledge of sports rules and refereeing
	A2 practical knowledge (0.0872)	A21 (0.1993) Knowledge of physical education teaching methods and strategies
		A22 (0.4324) Teaching experience and knowledge of lessons learned



1 level	2 level	3 level
		A23 (0.2290) Knowledge of teacher-student relationship
		A24 (0.1393) Knowledge of colleague relations
	A3 general knowledge (0.0802)	A31 (0.1055) Pedagogical knowledge
		A32 (0.0663) Knowledge of Exercise Physiology
		A33 (0.2173) Knowledge of Sports Psychology
		A34 (0.6109) Knowledge of Sports Injury Prescription and Rehabilitation
	A4 Informational knowledge (0.3280)	A41 (0.2385) Teaching software application knowledge
		A42 (0.1365) network security and information literacy
		A43 (0.6250) Knowledge of education information policies and regulations

Table 2: Competency of physical education teachers in professional competency

1 level	2 level	3 level
	B1 Physical education Scholastic competency (0.0893)	B11 (0.2695) competency to demonstrate physical education skills
		B12 (0.1547) Sports literacy
		B13 (0.0756) Correction of Physical Skills
		B14 (0.0919) Instructional design and implementation capacity
		B15 (0.4083) Teaching evaluation capacity
	B2 Research competency in sports science (0.1721)	B21 (0.0974) competency to collect, organize and summarize information
		B22 (0.5695) competency to write scientific papers
		B23 (0.3331) Capacity for curriculum building and reform
	B3 Competency to organize and direct extracurricular activities (0.3525)	B31 (0.0881) Organizational and managerial skills for extracurricular sports activities
		B32 (0.7172) Training and coaching capacity for sports teams
		B33 (0.1947) School games organization and refereeing capacity
	B4 Practical guidance competency	B41 (0.5983) Internship supervisory capacity
		B42 (0.0543) Apprenticeship mentoring capacity
		B43 (0.0543) Thesis (design) supervisory skills





1 level	2 level	3 level
	(0.3209)	(0.1287)
		B44 Student Career Guidance Competencies
		(0.2187)
	B5	B51 Design and production competency for
	Informatization	(0.051) multimedia teaching
	Competency	B52 Data analysis and evaluation capacity
	(0.0652)	(0.2176)
		B53 competency to utilize web resources
		(0.6910)

Table 3: Competency of physical education teachers in professional attitude

1 level	2 level	3 level
C professional attitude (0.0675)	C1 Perceived attitudes toward careers (0.5584)	C11 Passionate about education
		(0.0510)
		C12 Focus on their professional development
		(0.5610)
	C2 Emotional attitudes toward students (0.1220)	C13 Professional ethic
		(0.2610)
		C14 Compliance with educational laws and
		regulations
		(0.1259)
		C21 Equal treatment of students
		(0.0396)
	C3 attitude towards knowledge (0.3196)	C22 Caring for students
		(0.4910)
		C23 Respect for students
		(0.0960)
		C24 Focus on students' individual development
		(0.2156)
		C25 Focus on the holistic development of
		students
		(0.1578)
		C31 Respect for and pursuit of knowledge
		(0.1831)
		C32 Attitude towards dissemination and sharing
		of knowledge
		(0.4821)
		C33 Openness and inclusiveness
		(0.2178)
		C34 A rational and critical approach
		(0.1170)

According to the calculation results of the weights of the 21 experts in the questionnaire on the teaching competency of physical education teachers, it was found that the evaluation system of teaching competence of college physical education teachers is multi-level and multi-dimensional, and the competence of different levels and dimensions have a certain importance, which needs to be considered and cultivated comprehensively to improve the teaching quality and level of college physical education teachers.



Discussion

We can discuss that the competency of physical education teachers in universities has 3 first levels, 12 second levels, and 46 third levels, which include professional knowledge, professional competency, and professional attitude. This is consistent with the research result of Huang (2001) indicated that for physical education teachers, teaching competency includes the competency of professional physical education training, the competency to prepare lesson plans, demonstration competency, and observation competency. In the 1-level indicators, professional knowledge is an important factor necessary for physical education teachers to teach, followed by professional competence, while professional attitudes are slightly less important, but still cannot be ignored. In the 2 levels, under the dimension of professional knowledge, disciplinary and informational knowledge are regarded as the most important core factors, followed by practical and general knowledge. In the 3 levels, under the disciplinary knowledge dimension, knowledge of the basic theory of sport was considered most important, followed by knowledge of basic methods and skills of the sport. The other knowledge domains have less weight but still have some importance.

We further concluded that the competency of physical education teachers in universities fulfills the openness and inclusiveness, rational and critical approach, which are the core factors under the cultivation of applied talents. The applied talent cultivation composition scientific dimensions have an important guiding role in the practice of applied talent cultivation in local colleges and universities.

Recommendation

1. Regarding the evaluation indexes of teaching competency, with the reform of teaching, the needs of teachers in every era demand change, which will have an impact on the system, methods, and division of weights in the evaluation system of teachers' teaching competency.

2. Due to time constraints, this study only takes physical education teachers and universities in Shaanxi Province as the object of study, how adaptable its content is, and it does not empirically analyze the school's teachers.

3. The main purpose of constructing the evaluation index system in this study is to promote the improvement and development of the teaching competency of college physical education teachers, to improve the quality of teaching, and to enhance the efficiency of teaching.

4. Physical education teachers universities should set up professional ideals, strengthen professional self-planning, improve professional skills, promote the expansion and deepening of professional knowledge, and improve professional attitudes and motives.

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