Construction of Evaluation Index System for the Core Competitiveness of Students Majoring in Physical Education

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Abstract: The core competence of students is a comprehensive ability with competitive advantages formed after students receive education. The purpose of this article is to build a scientific evaluation index system of core competence of physical education majors and improve core competitiveness of physical education majors. In this paper, the literature index method, questionnaire survey and other methods are used to construct an evaluation index system for the core competence of physical education students, and the weights are analyzed and determined. Finally, a physical education major of a certain university is used as a sample to build the core of physical education students Competitiveness index system was verified. The arithmetic evaluation value of the core competence of the juniors majoring in physical education in this university was 85.18%. It is concluded that the construction of physical education professional evaluation indicators can feed back talent training programs, identify the quality of talent training, reflect the quality and effectiveness of teaching, and test the construction and reform of recommended courses and teaching. It is conducive to identifying the direction of talent training, identifying the quality of talent training, facilitating the construction and reform of courses and teaching, and forming a talent team.

1. Introduction

At present, China has entered the era of popularization of higher education, but the study of core competitiveness in the field of higher education is still in the initial design stage of introducing concepts, grafting models, borrowing methods, and core competitiveness structures and elements. It is difficult for the students majoring in physical education to get employment and their comprehensive ability is not high[1]. With the development of globalization, competition mechanisms have been introduced into various fields, and there have been many similar studies in the field of education. However, there are still few studies on the core competitiveness of students majoring in physical education. As for the problem of physical education students' difficulty in choosing a job, the core competitiveness of students should be improved at the university education stage, combined with the needs of the talent market, and their comprehensive competitiveness should be improved [2-3]. As for continuing to ensure the sustainable development of the physical education major, and allowing the physical education students to withstand the test of living, they can make a perfect transition and have the ability to engage in front-line teaching work in primary and secondary physical education. It is necessary to construct the evaluation index system of the core competitiveness of the students majoring in physical education. It can solve the problems of inconsistent talent training goals and social needs in the process of talent training for physical education majors, unfounded changes in talent training programs, inflexible talent training models, and non-objective evaluation of teaching effects. It is conducive to clarifying the direction of talent training, identifying the quality of talent training, facilitating the construction and reform of courses and teaching, and the formation of talent teams [4-5].

Aiming at the problem of low competitiveness of current physical education majors, this paper constructs a scientific evaluation index system of core competence of physical education majors to
clarify the direction of talent cultivation and identify the quality of student cultivation. An evaluation index system for the core competence of physical education majors was constructed by using the methods of literature data and questionnaires, and the weights were analyzed and determined. Finally, taking a university physical education major as a sample, the core competitiveness index system of the students of physical education major is verified. It is concluded that the construction of physical education professional evaluation indicators can feed back the talent training plan, identify the quality of talent training, reflect the quality and effectiveness of teaching, test the construction and reform of recommended courses and teaching.

2. Method

2.1 The Concept of University Students' Core Competitiveness

With the development of globalization, competition mechanisms have been introduced into various fields, and there is no shortage of scholars in the field of education's research on “core competitiveness of college students.” The entire process of educating and cultivating the new generation to engage in social life mainly refers to the process of training children, adolescents, and young people in schools [6]. Higher education is one of the important links of youth diploma education. “University core competence” is the core competence of university students themselves, and it is also the main goal of college talent training programs. Different scholars have different views on the core competence of college students. They mainly have the following views: Emphasize a single element, believe that the difference in college students' special ability determines the ability of sustainable competitiveness; attach importance to the different ability combinations of college students to combine innovation The combination view of the carrier; Guided by the core values of the school, combined with the values required by the talent market for the ability of college students [7-8]. Through the research and analysis of the evaluation system of university students 'core competitiveness, it can be concluded that university students' core competitiveness is the most unique professional ability, knowledge structure and practical ability that university students have in social competition. This article analyzes from three angles.

From the perspective of university students themselves: Confucius has proposed a “people-oriented” teaching theory since ancient times. The core competitiveness of university students includes both their inherent advantages and professional skills acquired through systematic learning.

From the perspective of the school: The school achieves the goal of cultivating college students through the formulation and implementation of professional talent training programs, and the core competitiveness of college students is comparative competitiveness. For example, undergraduates of the same specialty in different colleges and universities, the unique and sustainable development of superior skills beyond the basic skills will become the core competitiveness of college and university students.

From the perspective of the job market: the talent supply situation in the job market macro-controls the talent training programs of colleges and universities. The core competitiveness of college students is the professional skills, vocational literacy, and comprehensive ability that college students need to adapt to social development, industry development, and government supervision[9-10].

This article considers that the core competence of higher vocational physical education students refers to the ability of students in four years of vocational education to be competent for physical education in primary and secondary schools, to adapt to the reform of physical education in primary and secondary schools, to promote the development of primary and secondary physical education, and to maximize self-worth comprehensive ability.

2.2 Evaluation Index System Construction

Core competitiveness is a kind of hidden comprehensive ability, which has very different explicit characteristics in different research fields. The establishment of the evaluation framework will
directly affect the significance of the analysis results. The evaluation framework for the core competence of physical education majors in this paper will adopt a multi-dimensional hierarchical structure [11]. Through interviews and scoring of experts, there are four primary indicators for the evaluation of the core competitiveness of higher vocational physical education majors: practice of teacher ethics, learning to teach, learning to educate, and learning to develop. There are 9 second-level indicators, namely: the practice of teacher moral standards and educational sentiments under the teacher's morality, the learning of theoretical methods and practical abilities under teaching, the learning of self-education and student education under educating, and the autonomous learning under development, Rethinking horizons and exchanges and cooperation. There are 39 three-level indicators, namely: patriotism and observance of the law, dedication and love for students, demonstration of others, willingness to engage in physical education, positive emotions, correct attitude, theories and methods of modern education and teaching, theories and methods of physical education in schools, Theories and methods of extracurricular physical exercise, theories and methods of training competitions, theories and methods of educational psychology, theories and methods of sports psychology, theories and methods of sports human science, theories and methods of sports safety and prevention, health care Knowledge theory and methods [12-13]. The calculation of the core competitiveness evaluation index system for physical education majors is to understand the weight order of the indicators at all levels in the core competitiveness of higher vocational physical education majors. The single-level index weights will be calculated to finally calculate the comprehensive index weight ranking method [14-15].

Calculate the single-level weight ranking of indicators at all levels, determine the product $M_i$ of each row of the matrix, and the formula for each row of the product:

$$M_i = \prod_{j=1}^{n} a_{ij}$$

(1)

Calculate the eigenvector (weight) formula of the n-th root of the scale product $M_i$ of each row:

$$W_i = \frac{w_j}{\sum_{j=1}^{n} w_j}$$

(2)

The $AW$ results of the expert-level indicator judgment matrix are as follows:

$$AW = \left\{ \begin{array}{ccc} 1 & 1 & 5 \\ 1 & 1 & 5 \\ 1/5 & 1/5 & 1/5 \\ 1/5 & 1/5 & 1/5 \end{array} \right\} \times \left\{ \begin{array}{c} 0.417 \\ 0.417 \\ 0.083 \\ 0.083 \end{array} \right\}$$

(3)

By analogy, calculate the weight values of the secondary indicators and tertiary indicators.

3. Experiment

Step1: Literature method. This research mainly consulted various academic journals, newspapers, and education on core competitiveness and physical education professional competence, core competence, student ability evaluation system. In the library, China HowNet, Wanfang, and Weipu database. Monographs in science and sports, the breadth of research involves sociology, pedagogy, economics and other disciplines. These preliminary works provide theoretical guidance and support for this research.

Step2: Questionnaire design and distribution. This research strictly complied with the relevant questionnaire design requirements and format, and formulated the corresponding questionnaire. The contents of the first draft of the questionnaire were determined by consulting a large amount of information, and through expert interviews, scoring, and modification, a formal and comprehensive questionnaire was finally formed, and the validity and reliability of the questionnaire were tested for validity and accuracy. The survey object of this article is mainly selected from a junior student of physical education major in a university and a physical education researcher. A total of 45
questionnaires were distributed and 40 valid questionnaires were recovered. The efficiency of the questionnaire was 88.89%. The results obtained are used to calculate the weights of the indicators and calculate the combined weights by the analytic hierarchy process.

Step3: Use the cumulative difference correlation analysis method to test the reliability and validity of the relevant questionnaire for the construction of the core competence evaluation index system of physical education students in a university by Excel, and use the mean comparison method to analyze the core value control of physical education students in a university The situation is different; by analyzing the correlation value of the product according to SPSS24.0, the data obtained from the survey and analysis are statistically processed.

4. Discuss

4.1 Investigation and Analysis of Students' Mastery

By analyzing the results of a questionnaire issued by a junior student of physical education major and a sports researcher in a university. The degree of mastery of the core competitiveness of juniors in this major is shown in Table 1 and Figure 1.

Table 1. Survey results of the core competitiveness of the students majoring in physical education

<table>
<thead>
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<tr>
<td>Student Survey</td>
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<td>84.25%</td>
<td>89.24%</td>
<td>90.58%</td>
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</table>

Figure 1. Core Competitiveness of Students Majoring in Physical Education

Based on the analysis of the survey results of the core competitiveness of the students majoring in physical education in a university, the arithmetic evaluation value of the core competence of the students majoring in physical education in the third year of the university is 85.18%. The number of students is the largest, and the ability of physical education and scientific research and the ability to help primary and secondary school students to improve their intelligence level are the least.

4.2 Analysis of Evaluation Index Weights of Core Competitiveness of Students Majoring in Physical Education

(1) Analysis of weights of first-level indicators

In the first-level indicator of the core competitiveness of the students majoring in physical education in this school, the practice of ethics is that the weight of all indicators is the highest 0.377,
followed by learning to teach 0.366, and the core weight of learning to develop is only 0.086. According to the results of interviews with experts, the practice of teacher ethics and learning to teach is the core competence for students of physical education majors. Vocational education pays more attention to the cultivation of professional skills. After investigating the first-level indicators of “learning to educate people” and “learning to develop”, it was found that for the cultivation of students majoring in physical education, ethics education takes precedence over skills professors. Inheritance and inheritance of ethics are not skills but are better than skills for physical education students.

(2) Analysis of secondary index weights
The weight of the secondary indicator of the core competitiveness of the students majoring in physical education refers to the weight of the secondary indicator under the same primary indicator. For example, the practice of the teacher's moral norm under the teacher's first-level indicator accounted for 0.726. Occupying 0.274, in order to ensure the comparability of the indicators at different levels, the comprehensive weight is selected to perform horizontal comparison of the third-level indicators, that is, the first-level indicators are multiplied by the second-level indicators and the second-level indicators are multiplied by the third-level indicators. According to the results of comprehensive weights, teacher moral standards, practical ability and theoretical methods are the three core secondary indicators. In the comprehensive weighting of the secondary indicators, the teacher moral standard is the most important secondary indicator, which fully confirms that the teacher is the first to establish morality, and the teacher indicator in the teacher moral standard is the first in the core competitiveness evaluation index system of the physical education students. Two core indicators. The training of physical education students in colleges and universities should first pay attention to teacher's moral education. Being a teacher is a stricter moral requirement for teachers in the society. Physical education students trained in colleges and universities must both have professional skills and moral standards.

(3) Analysis of three-level index weights
The most important core competency of the 36 three-level indicators for the evaluation index system of physical education majors is the ability of classroom teaching (0.108), which is in line with the modern education training model and corresponds to the goal of “one practice, three societies” for the certification of teacher education in China. The classroom teaching ability of physical education teachers in primary and middle schools is one of the most important practical teaching skills of physical education majors. The classroom teaching ability includes both the students' ability to master sports skills and the ability to impart knowledge through classroom teaching. In the process of cultivating students majoring in education, we must combine skill practice with teaching practice. In the core competence of college physical education majors, it is the teacher, the willingness to engage in physical education, the theory and methods of physical education in schools, the ability of classroom teaching, a healthy physique, the enhancement of physical fitness, the ability of lifelong learning, the ability to solve problems, The spirit of teamwork is its basic ability.

5. Conclusion
The construction of the core competitiveness evaluation index system for college physical education students is to solve the inconsistency between the talent training goals and social needs in the talent training process of physical education majors, the basis for changing the talent training program is unfounded, the talent training model is inflexible, and the teaching effect evaluation feedback Non-objective issues. The training of physical education majors must meet the characteristics of flexibility and adaptability to meet the needs of society, industry and profession. Physical education majors must be based on reality, cultivated on demand, strengthen professional skills, and theoretical knowledge is sufficient.
References


