Reform and Development Track of Physical Education Teachers Training and Training System under the Data Background

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Abstract. Since the 1970s, countries around the world have adopted the concept of the "teacher education" instead of the "teacher education," which has opened up space for the training of physical education teachers. The new trend of teacher training in the 21st century is specialization, lifelong and high education. At present, the structure of the teaching staff and the improvement of the overall ability level in the teacher training in China are still limited by many factors. Therefore, how to strengthen and improve the existing physical education teacher training mode and promote the national health literacy education from the school sports stage is a problem that must be considered in the training of physical education teachers in colleges and universities in China. The current teacher management mechanism, operational system and supporting policies cannot fully meet the primary needs of education reform and comprehensive, coordinated and sustainable development in the new century. Competitive sport is an important part of school sports. Therefore, the reform and development track of physical education teachers training and training system under the data background is discussed in this paper. We combine the data mining models to enhance the traditional research and the data analytic framework is also combined for the overall analysis and research. The experiment results prove the effectiveness.

Introduction

Figure 1. The Sample Analytic Model.

The rapid development of modern civilization, over-nutrition and chronic diseases caused by lack of exercise has affected most of China and the world's population. Take China as an example:
among the 1.3 billion people, hypertension and hyperlipidemia are close to 170 million, diabetes patients reach 92.4 million, overweight or obesity is 70 million to 200 million, and dyslipidemia is 160 million. Fatty liver patients are about 120 million people. College physical education teachers are the most advanced organizers and implementers of college physical education positions. The quality of college physical education teachers directly determines the quality of college physical education.

With the continuous deepening of China's education reform, the continuous development of physical education majors, and the transition of basic education to quality education and health education, there have been some unsatisfactory situations in the undergraduate majors of physical education in China. Therefore, the reform of the undergraduate major of physical education in China is carried out in a true sense, so that it can adapt to the actual situation of China's basic education, adapt to the form of China's economic and social development, and adapt to the needs of physical education teachers at all levels of schools in China at this stage. It is also particularly important to carry out the necessary scientific adjustment and reform of the current curriculum system for undergraduate majors in higher physical education in China.

The training and training of physical education teachers in China are undertaken by different institutions. From personnel to equipment, funds and other resources, there is little communication in the fields of curriculum, education, teaching, education and research. On the other hand, the main task of the physical education teacher training institution, which has been responsible for on-the-job training for a long time, is still the academic compensation education. The induction education has also hardly been implemented in the process of physical education teacher education. The resources disposition uneven causes to deliver inevitably is not balanced, causes the speed which the industry grows to be uneven, so that different industrial development and lag development in advance. Weighs the resources disposition in advance with the target the effect as delivers the rate of rise and the national economy some industry delivers difference of the rate of rise to define equally as the industry in advance, after uses for to describe the implementation difference essential factor investment industrial policy the influence which delivers to the various industries, namely inclined effect. With the help of the mathematical model in economics, we can draw the useful information from the statistical data of the existing sports industry to then judge the degree of industrial policy differences in China and each region. How to implement the sports industry policy, it is scientific to measure the standard of economic data, but there are other influencing factors. In this study, it is assumed that the standard calculation is not affected by other factors. Therefore, under the core scenario of the information, we should consider the following major aspects.
This research to the informationization systematic level construction main localization for the operational channel and the management system management system construction, among, the operational channel is the correlation department the corresponding application system which establishes for support department office work development; The general management system management system namely in order to then promote the backstage support class system which the informationization application effect develops. The system level plan and the construction level, decided the entire sports informationization the comprehensive level that will be the sports informationization construction key point.

Construction of the information infrastructure layer mainly includes the storage, server, network and other hardware facilities and database construction, which is the whole information construction, application of the basic starting point. Hardware facilities constitute the information of the physical operating environment, the fundamental decision on the speed, efficiency and safety of related applications, reflecting the readiness and general use of information infrastructure. Database is the information environment of information operation, determines the quality and primary scope of running applications.

The institutions, courses, research directions and management and operation mechanisms of pre-vocational education and post-employment education are different. The former takes sports theory as the core of education, while the latter takes academic compensation as the focus of education. They are also the politically and disjointed, lacking overall planning and integration arrangements. The educational content is repeated, the level is reversed, the connection is lacking, the teaching practice is separated, and the lack of pertinence, practicality and scientificty. Neglecting the scientific and systematic training of practical ability and innovative spirit has seriously affected the quality and efficiency of the current college physical education teachers in cultivating applied, innovative and research-oriented talents. The concept of physical education in primary and secondary schools in the United States has gradually evolved to the level of paying attention to children's physical health and mastering health skills. Therefore, its guidelines have also shifted to emphasize the need to ensure that children have sufficient opportunities for activities at school and to develop their activities in future life. Under the support of the strong science and technology and strong financial resources of the United States, the simultaneous development of education and sports has made the training and education of physical education teachers in primary and secondary schools in the United States gradually form a perfect system and unique characteristics, and also make them a primary school physical education teacher. The cultivation is mature day by day.

![Figure 3. The Sample Data Collections.](image)

**Research on the Reform and Development Track of Physical Education Teachers Training and Training System under the Data Background**

**Problems in the Training of Physical Education Teachers**

The construction of physical education teachers in colleges and universities is weak, lacking
scientific quantitative measures and supporting legal systems. The most difficult indicator to measure in college physical education teachers is the construction of thoughts and sentimental spirits such as teacher morality and responsibility, and the most important training of teachers should also be the noble professional ethics of teachers.

The entrance education of physical education teachers refers to the various educational activities that physical education teachers receive during the probationary period. It is an important part of the training process of physical education teachers. It is a good development for new physical education teachers, promote their professional development, and adapt to teachers' professional life as soon as possible. It is of great significance to be early in the job position, to communicate pre-employment training and on-the-job training. However, under the background that the concept of lifelong education is widespread and the integration tendency of teachers' pre-service training, on-the-job education and on-the-job training is becoming more and more obvious, the in-service education of physical education teachers in China is serious in form and lacks effective training in the teaching and learning activities.

In the concept of training, through the analysis of the standards of American physical education teachers, it can be seen that the United States requires excellent physical education teachers to reach a certain level of professional quality in the new era. This requirement not only provides an effective reference for the pre-employment training of American physical education teachers, but also It provides an important basis for the basic evaluation of these teachers' post-employment, which promotes the overall improvement of the quality of American sports teachers. The standards of American physical education teachers are always guided by the development of students. From the perspective of students, it is necessary to formulate the requirements for the training of physical education teachers, which is in line with the teachers' own development and the students' actual interests.

The American Association of Teachers Colleges and the All-American Education Association and other organizations agree that the teacher education curriculum must be based on solid original theory and practice, and that normal students must participate in various educational practice activities. From the curriculum setting of physical education undergraduate majors in China's physical education departments, the characteristics of the undergraduate students' training and education are discussed. The main courses of physical education majors in China are formulated by the State Education Commission and also the Sports Commission. The curriculum names and teaching contents are relatively consistent. In most of the gymnasium schools in China, both the subject and the door are classified as compulsory. Subjects include anatomy, physiology and exercise physiology, school physical education, sports health, sports psychology, sports introduction, sports history, sports measurement and evaluation, sports biochemistry, sports statistics, sports research methods, and graduation thesis. The course includes athletics, gymnastics, basketball, volleyball, football, martial arts, and swimming.

**Physical Education Teacher Training**

Comparing the training mode of physical education teachers in primary and middle schools between China and the United States, we can see that the United States pays more attention to the attitudes, career plans and related experiences of the future physical education industry, combined with the adoption of national basic skills tests and setting of pre-school academic grades and multiple interviews. The other links ensure the quality of teacher training, and China has already determined the direction of the physical education major and the training mode that will be carried out in advance through the college entrance examination. In doing so, although the university and students have more choices for mutual choice, the overall design and operation also show a rough and broad, too emphasis on institutional training, and the ability to develop and train students' career planning needs to be further improved and strengthen. In order to improve the quality of teaching and to cultivate students’ interest in learning and enhance the attractiveness of the physical education classroom, the traditional mode of teaching must be reformed and in practice, we must make full use of our own advantages. It is an important part of school education to carry out the
multi-cooperation and ensure the smooth training of interest in school. It is not good to rely on the "exclusive management" of the physical education teachers, to cultivate students' interest in sports, and to rely on the joint efforts of school leaders and all teachers and all aspects of society. Therefore, in the Table 1, we present the principles and the primary suggestions for the ideas.

**Table 1. The Development Track of Physical Education Teachers Training Focuses.**

| Development Track of Physical Education Teachers Training Focuses | In sports option class implementation, because the teaching process is a process which one kind of teachers and students interact, gym instructor's individual quality and the personality charm affect directly the university student to the sports option class choice. Therefore, colleges should vigorously strengthen the construction of physical education teachers. For the openness and autonomy of sports option classes, universities should put a solid theoretical foundation of sports, sports teachers with a sense of innovation to sports option class, so that these teachers can bring students a new concept of sports, better to guide in sports enjoy spirit of sports. |
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| We will strengthen the building of a contingent of physical education teachers | The construction of sports facilities is the hardware foundation of sports activities. Colleges and universities should try every means to meet the needs of sports venues and sports facilities in sports elective courses. Our country university sports education goal is developing the change unceasingly, by take athletics sports project as the core sports teaching mentality and the pattern, the development is gradually “the health first” the teaching guiding ideology that causes our sports education goal to conform to the student physical and moral integrity need to develop. |
| Strengthening sports facilities and enriching teaching content | The school carries on the effective study instruction to the sports education specialized student, makes the student fully to know oneself and the full use school resources, have the plan, have pointed carry out extracurricular study counselling, and provides the specialized teacher to carry on counselling, fully organizes many and varied learning activity using after school, encourages the instructor and the student carries on a pair of the exchange communication, understood promptly the student studies the life tendency, and question prompt response report which appears generally the student, in order to the school prompt grasping actual situation, arranges study counselling reasonably. |
| In the comparison of learning self-efficacy, there is a difference in scores between boys and girls, which shows that male and female students have different views and opinions on their achievements in learning | At present, the management and operation of physical education teachers in colleges and universities are relatively closed and the mobility is poor. The lack of communication and learning in this major and interdisciplinary subject is not conducive to enhancing the depth and breadth of knowledge of this major. Secondly, the job title evaluation is very serious, the physical education teacher's scientific research output cycle is long, the effect is slow, and the journal book market is seriously corrupted. At the same time, the title evaluation employs heavy scientific research and light teaching, and the relationship between people is light and human. The evaluation can only be up and down. There is a lack of scientific quantitative assessment of teacher morality and performance, and lack of incentive and competition mechanism. Japan's higher education system adopts an autonomy system between the centralized system and the decentralized system. The state's curriculum management is controlled by the Ministry of Education and the Ministry of Education. Each locality and institution can arrange it independently,
so that it can adapt to local conditions and form its own characteristics. Through the implementation of a basic strict teacher licensing system, the teacher's specifications and quality are basically consistent. Japan established the basic standards of its courses through laws and the Ministry of Education and Ministers, and later stated in the revision of the "University Setting Standards" that universities can freely set up relevant departments, subjects and courses according to the needs of their professional direction, without having to mechanically follow the Ministry of Education. The original setting standards are stipulated. Therefore, in terms of curriculum, each department of sports has a large degree of autonomy. The curriculum plan of each department is not uniform and has its own characteristics.

Chinese college physical education teachers have a relatively simple training goal, which is clearly aimed at cultivating talents who have certain sports skills and strong physical education teaching ability and are qualified for school sports work. In addition to cultivating teachers, the United States and the United Kingdom also train coaches, researchers, sports managers, sports health personnel, sports news reporters, community health, entertainment and physical fitness guidance. Compared with the United States' more emphasis on cultivating the professional qualities that future PE teachers should possess, China's physical education curriculum is insufficient in this respect, especially in the areas of professional team participation, responsibility, and career planning.

Reform of the Training System

Establishing an open and flexible physical education teacher training system is the overall direction of the reform of physical education teachers. The key to constructing a new physical education teacher training system is to break the old and closed old pattern and establish a new pattern of training for diverse physical education teachers. The diversified training pattern of physical education teachers refers not only to the participation of comprehensive types of universities, but also to the transformation and upgrading of existing teachers' colleges and professional sports colleges.

There are more classes in political courses in public compulsory courses. Since the reform and opening up, the colleges and the universities of colleges and universities have generally strengthened the ideological and political work for students. The class hours of ideological and political courses have increased, the activities of ideological and political education have also increased, and the situation has become diverse. The quality, the firmness of their socialist convictions, their patriotic enthusiasm, and their ambition to serve the country has had a positive impact.

A teacher is a very practical profession. As a teacher, it is necessary to then deal with teaching materials and design teaching methods according to the psychological characteristics of students, the level of knowledge and the difficulty of general learning movements, etc., so as to effectively impart knowledge to students to master the skills, skills and ability of sports. All of this requires teachers not only to have extensive professional knowledge, education, and psychological knowledge, but also to have strong teaching practice ability. Therefore, as a physical education teacher, the college physical education major should pay great attention to cultivating students' practical ability in teaching, especially to play the function of practical class, consciously create a practical environment, and actively guide and organize students to carry out various practical exercises.

The integration of physical education teacher education is essentially the combination of physical education teacher education, changing one-time and final training into continuous and lifelong education, using post-employment education to deepen pre-vocational education, and paying attention to some pre-service education. It reflects the practicality of physical education teacher education and solves the problem of the post-service education of physical education teachers with different methods of pre-employment training. This will largely promote the further development and analysis of the related subjects.
Conclusion

Establish a scientific and humanized employment system for the college physical education teachers, and stimulate teachers' initiative. All the colleges and universities follow the principles of the relative stability, appropriate mobility, specialization and integration, and complementary resources. They explore and establish an employment mechanism for the combination of physical education teacher team management mode and scientific and humanization. They also strengthen cooperation, joint education, and mutual employment. In the future, we will apply the proposed research results into applications to test the performance.

References

[1] Xiangru, L. (2017). World Leisure Sports Development Report [C]. World Leisure Sports Macau Forum.
[2] Jianhua, X. et al. (2015). The Training Mode of Applied Sports Masters in American Universities and Its Enlightenment to China [J]. Journal of Nanjing Institute of Physical Education.
[3] Tao, A. (2015). The Enlightenment of the Training Mode of Physical Education Teachers on the Training Mode of Free Normal Students in China [J]. Journal of Beijing Sport University.
[4] Jing, C. (2016). A Comparative Study of the Training Modes of Special Physical Education Teachers in China [J]. Journal of Wuhan Institute of Physical Education.
[5] Shihong, L. (2016). Thoughts on the Cultivation of Physical Education Professionals in Sports Colleges [J]. Journal of Nanjing Institute of Physical Education.
[6] Hansheng, H. et al. (2016). Research on the Cultivation of Undergraduate Talents in Physical Education in China [J]. Sports Science.
[7] Ke, Z. (2016). Research on Standard-driven American Physical Education Teacher Education Quality Dynamic Guarantee System [J]. Sports Science.
[8] Minxue, H. et al. (2015). Research on the Cultivation of PE Teachers' Reflective Ability under the ALACT Reflection Model [J]. Journal of Nanjing Institute of Physical Education.
[9] Qi, Z. et al. (2016). Research on the Curriculum Setting of Physical Education Major in Ohio State University [J]. Journal of Beijing Sport University.
[10] Zhihua, Y. et al. (2016). The Characteristics and Enlightenment of Physical Education Major [J]. Sports journal.
[11] You, W. and Keke, L. (2016). Professionalization of teachers, courses and translation [J]. Shanghai translation.
[12] Hezhong, W. (2012). The development trend of the language service industry [J]. Chinese translation.
[13] Ruie, Z. (2012). The Status Quo and Role Realization of Chinese Translation Teachers [J]. Journal of Foreign Languages University.
[14] Vardhana, M., Arunkumar, N., Abdulhay, E. and Vishnuprasad, P.V., 2018. Iot based real time traffic control using cloud computing. Cluster Computing, pp.1-10.
[15] Baalamurugan, K.M. and Bhanu, S.V., 2018. An efficient clustering scheme for cloud computing problems using metaheuristic algorithms. Cluster Computing, pp.1-11.
[16] Sui, X., Liu, C., Li, J., Xue, Y., Yu, Y. and Cui, Y., 2018. Laser-based measurement for micro-unbalance of cylindrical rollers of the high-speed precision rolling bearings. Cluster Computing, pp.1-9.
[17] Cao, B., Pan, X., Zhang, M., Liu, C. and Jiang, W., 2018. A method of evaluating the three-dimensional damage effect of strong electromagnetic pulse on the box based on the triangular-element FDTD method. Cluster Computing, pp.1-7.