Research on the Connotation and Development Framework of Physical Education Teachers based on Big Data Mining

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Abstract
The application of data mining technology can improve the effectiveness and scientificity of sports data analysis, and play an important role in evaluating the students' physique index. With the continuous improvement of the social and economic living standards, the dietary nutrition level of the students has risen significantly. At the same time, the teaching technology is becoming more and more advanced and the teaching conditions are improved gradually, but it is still unable to effectively prevent the decline of the physique of young people in our country. The quality of physical education teachers is a key factor affecting the development of students' sports. Therefore, in the framework of student development, this paper discusses the connotation and practical exploration of core qualities of physical education teachers.

Key words: Data mining, Core literacy, Student development, Physical education teachers, Data analysis

1. INTRODUCTION
Facing the rapid social and economic change, many international organizations and countries in the world are thinking about how to cultivate prospective citizens' strategic problems so that they can be more adaptable to work and life in twenty-first Century. In this context, the Beijing Normal University was commissioned by the Ministry of education, and the research results of the "core literacy of Chinese students", which lasted three years, were published in September 2016. The research result is based on the training of "all-round development of people". It is called "the key" of our curriculum reform, the source of the new curriculum standard, and the "wind vane" for the evaluation of China's college entrance examination. It gives a clear and detailed analysis of the goal of "all-round development of people". This is a set of systematic educational objective framework. It needs to transform the teaching materials and evaluation of different disciplines from the perspective of the whole curriculum, and ultimately form a complete education system centered on student development.

The general secretary of Xi Jinping stressed at the Twelfth National Games that it is the basic principle and task of sports work in China to develop sports and enhance the people's physical fitness. The general secretary's instructions for sports work are to do well in youth sports work. It is pointed out that youth sports work is the direction of healthy China's construction. Reform and innovation is the fundamental driving force for youth sports activities. According to the instructions of the General Secretary Xi, according to "develop core literacy" and the Ministry of Education issued the "compulsory education course standard of physical education and health Chinese students (2011 Edition)" and the "national student physical health standard (2014 Edition)" the basic requirements, develop core literacy of students, teachers must first have the core of quality education. The new Chinese 6 times before the physical education curriculum reform has made great achievements, but since the seventh education reform, and constantly improve the level of social and economic life, increase student nutrition level, teaching techniques become more advanced, the teaching conditions gradually improved and perfect, government formulated a series of supporting policies and system, but can not effectively prevent China's youth physical decline for 26 consecutive years. Although factors such as society, school, student and parents have certain influence, it should be physical education teachers, especially the quality level of physical education teachers. Under the framework of the core literacy of Chinese students' development, this paper discusses the connotation and practical exploration of the core literacy of physical education teachers.

2. DATA MINING THEORY
2.1. Data mining
Data mining is also called knowledge discovery based on database, data is from a large database to extract effective, hidden, potentially useful and ultimately understandable information and knowledge of the non trivial process. Data mining is a kind of computer science and is closely related to the process of decision-making, it is mainly through machine learning, expert system, pattern recognition, statistics, database technology, parallel computing and visualization techniques to fully automatically analyze the organization or enterprise data, make reasonable judgment and logical reasoning, and then dig out the potential value of the information and knowledge in helping decision-makers to adjust the market competition strategy, to reduce the risk, to make good decisions.
Figure 1. Data mining

According to the difference between statistical and non statistical, data mining can be divided into two different types: hypothesis driven and discovery driven data mining. The biggest difference between the two lies in the process of getting information. Hypothesis driven is often referred to as validation driven, and it is mainly devoted to the hypothesis that a model or relationship is implicit in the data [8-9]. Validation of driving data mining mainly depends on the decision maker or business analyst to find in the data. In the first place, we often need to make some assumptions before data query and data mining, then we can use the results of mining to explain the results. This method has two potential problems, one is the lack of information and knowledge of decision maker or business analyst must first to show the data to make a guess, which is limited to their organization, data, technology and industry level of understanding. Another problem is that the quality of the information and the quality of knowledge depends on the interpretation of the results of the decision makers or business analysts to dig out. Query languages, statistical tables, graphs, and multidimensional analysis are the main techniques used to validate the drive. Discovery driven data mining is also called knowledge discovery, which is mainly to find the hidden relationship and patterns in the data. It is through the data mining software to automatically find and mining of new knowledge in the business data. However, a successful data mining should be an organic combination of hypothesis driven and discovery driven by these two types of data mining. Hypothesis driven data mining allows decision makers or business analysts express and validate individual and organizational knowledge, and found that the driven data mining is to refine the knowledge and information that is not assumed before recognition.

Figure 2. Data mining software

2.2. Data mining process

Data mining is a complete man-machine interaction, iterative process, usually more than each other there are related steps, such as definition, data selection, data preprocessing, data transformation, data mining, model interpretation, knowledge evaluation etc.. The process of data mining is illustrated in Figure 3. The corresponding steps in the process are described as follows:

1) Definition of problem: Accurately identify the definition of the problem to be excavated, to clarify the subject and target of mining is the cornerstone of the success of data mining. Before the preparation
of useful data, data mining related personnel must clearly understand the end user requirement, clarify the background knowledge, understand the relevant application situation and the process of data mining in the data mining algorithm.

2) Data selection: The key point of data selection is to determine the target data, according to the needs of end users, experts in related fields under the guidance from the original database to extract the relevant data or samples into meaningful new target data set. In this process, the main use of some of the database operations on the original data set to deal with.

3) Data preprocessing: Will determine the good data for further processing, extracted data consistency and integrity check data, and remove the useless data mining target deviation, cleaning noise data, data type conversion, according to the data characteristics and changes of the selected data sets, the calculation data using statistical method to derive the vacancy.

4) The data transformation: Then according to the preprocessed data has been the target task of data mining, in order to eliminate the redundant features in the data, it is usually used for other operations by using the methods of projection or database to reduce the number of data set variable or attribute.

3. CONNOTATION OF CORE LITERACY OF PHYSICAL EDUCATION TEACHERS IN COLLEGES AND UNIVERSITIES

3.1. Educational feelings

Human constitution generally includes body shape, physiological function, exercise ability, adaptability and psychological factors. Physical fitness is affected by genetic variation, nutrition condition, physical activity, living environment and life rule. Among the factors affecting the constitution, physical activity is the most active and active factor, and it is the direct motive force of physical development. PE teachers in Colleges and universities sports teaching practice, with how to teach the students to understand and master the equilibrium shape of body shape, enhance and maintain a high level of physiological function, improve the body movement ability and cultivate excellent adaptability and psychological quality of sports literacy education should teach students with feelings; to understand the identity, have strong physique, improve self-confidence, broaden their horizons and dreams, from disease, publicity of the quality of life of physical education essence and mission of feelings.

3.2. High sense of social responsibility

The sense of social responsibility of education is embodied in the concept of education, educational feelings, educational skills and teaching style. In school sports, the top-level design of long-term sports curriculum teaching and 8 times after the curriculum reform, have not changed the constitution of teenagers in China declining trend, although this is affected by a variety of schools, students, parents, social and other factors, but also reflects the sports teachers lack the sense of social responsibility. In guiding the programme of action for the great rejuvenation of the Chinese nation and leading the "health plan" in 2030 Chinese, facing the students’ physical health status cannot be improved, PE teachers should possess a high sense of social responsibility and mission, in the face of various factors on the physical education influence and interference, face all sorts of problems in the course of implementation, to the courage to play, strengthen the positive spirit of innovation, actively adapt to the national health priority development strategy, the school sports into the location to build health Chinese strategy, committed to get rid of the school sports status marginalized.

Figure 3. Sports activities
3.3. Deep theoretical foundation

The basic concept of the theory restricts the basic concepts and categories of the subject, and the understanding ability of judgment and reasoning. Physical exercise is not only physical activity, but also social and psychological activity. In knowledge structure, we should have broad knowledge, deep knowledge of ontology, innovative and efficient conditional knowledge and rich practical knowledge. For college physical education teachers, the level of knowledge structure will determine whether teachers can "teach", "teach right", "teach well" and "teach thoroughly".

3.4. Advanced education concept

After 8 times of physical education curriculum reform, formulated a series of policies and regulations, still can not stop the constitution of teenagers in China declining trend, which is not only the school, students, parents and social factors caused by the impact, but greatly affect the physical education teachers and the rational knowledge of sports teaching practice and educational thinking and subjective requirements.

The essence of sports is education, its attribute is to strengthen the Constitution and strengthen the body. Physical education is not the essence of teaching motor skills, and should teach students to master health, health care, nutrition, protection and assistance of knowledge, cognition of fitness, enhance physical fitness and master the methods and means of maintaining health, participate in physical activity habits, to cultivate students' independent thinking ability, which requires college sports teachers to enhance students' physique, maintain the vitality of the all-round development of humanism to design practical teaching activities.

3.5. High teaching skills

Teaching skills of teachers teaching effect play an important role from the external performance, is the success of PE teachers and creative students to complete the task of physical education, teaching methods to achieve the teaching purpose and effect; internal performance, is the sports teachers' subject knowledge, professional quality, psychological quality and personality characteristics the comprehensive, is the teacher's personality, creative and teaching ability is an important symbol of the. Teaching skills including design skills, management skills, teaching skills and evaluation skills, research skills, physical education teachers should form their own teaching style, to achieve the artistic teaching level, we must follow the human growth and development, physical development and movement skill formation rules to explore teaching skills, constantly explore based on the mastery of teaching skills and innovation.

3.6. Rationalization of Sports Technology

In the sports world, most people use sports skills and sports skills as synonyms, and first explain the difference between them. Motor skill refers to proficiency in the use of some body movement, is obtained through acquired practicing body perception; and the motion technology can refer to body movement specific to display, can also use text or language to express, is the rational cognition of sports skills.

The current teachers' basic physical education course is blue was originally designed to contest rules, it is very important for a contest for the purpose of students, but these courses are not in competition for the purpose of guiding the students think only according to the specific rules and forms of action is the movement of technology. This is deviated from the goal of school sports and the essence of sports education. Physical education is not the purpose of training all students to participate in sports competitions. A sports skill is only a choice for students to participate in physical activities in the future, not a necessary condition for their physical development. Physical education teachers should focus on the rational understanding of the mechanisms,
principles and processes of body movements, physical functions, physical fitness, mental and adaptive abilities, and design physical education.

4. THE PRACTICE AND EXPLORATION OF THE DEVELOPMENT SYSTEM OF THE CORE LITERACY OF PHYSICAL EDUCATION TEACHERS

4.1. Setting up the concept of lifelong learning and promoting the humanistic feelings of sports education

Montaigne said: learning is not to adapt to the outside world, but to enrich yourself. Education is a profession, but the teacher can not only regard it as a profession, nor can it be regarded as a task. Teachers should have persistent commitment to motivate students, help students acquire self-confidence, predict future and shape personality responsibilities. They should invest their lives in education and take education as a matter of their lifetime. PE teachers should establish the concept of lifelong learning, take students as "purpose" instead of "means". In sports teaching, we should pay more attention to training students' interest in sports, consciousness, habits, and paying attention to the differences and development of students. We should understand that students' participation in sports can not only enhance their physical fitness, but also satisfy their interests, cultivate their psychological quality and team spirit. Physical fitness is only one of the values that students achieve in sports.

4.2. Strengthening the sense of social responsibility

Strengthening the education of teachers' morality and shaping the professional spirit: Teachers' morality is the embodiment of teachers' knowledge literacy and cultural taste, and teachers' morality needs both education and teachers' self-cultivation. Noble morality of teachers, dedicated to teaching, to the education of teachers' occupation loyalty, love, love students, friendly colleagues, consciously assume responsibility of morality education. The influence of teachers on students, in addition to knowledge and ability, and the values of teachers in the world, in the country and in the people and in the public. Therefore, we should organize teachers' Moral Education in order to shape the spirit of patriotism, dedication, devotion and dedication, pioneering and innovation, honesty and self-discipline.

Starting with cognition and strengthening the social responsibility consciousness of Physical Education Teachers: Marx and Engels's view of human responsibility: "as a certain person, the real person, you have a rule, there is a mission, there is a task." The social responsibility of man exists in the actual working life, and is a reflection of the relationship between the individual and nature, society and others. The goal of school physical education in our country is to enhance students' physique, promote their physical and mental health development, and serve the builders and successors of the Chinese nation's physical quality and the development of moral, intellectual and physical development in an all-round way. In order to build long-term mechanism for training of physical education teachers, physical education teachers to help correct understanding of the new national school sports goal, teaching new ideas, strengthen the sports teacher's state and national responsibility, clear national mission and social responsibility, enhance social responsibility consciousness.

4.3. Lay a solid foundation for the theory of Education
Make great efforts to promote scientific research and improve academic theory: Qian Weichang once pointed out: "there is no scientific research in teaching, it is a kind of education without views". Scientific research mainly produces profound theoretical knowledge, theoretical basis is the teaching practice of teachers to implement the source and foundation, higher theoretical level of teachers, to grasp the knowledge more accurately, thinking of the teaching content is more profound and thorough, and timely is the most cutting-edge academic achievements to enrich the curriculum, according to the needs of teaching the specific historical conditions and the value of education and standard selection, the formation of the wisdom of teaching practice. Cape, a famous professional training expert in the United States, stressed in the book without any excuses: "the more understanding of things, the higher the angle you stand. The higher you stand, the more you can perform your execution." Teachers in Colleges and universities should take the responsibility of teaching, scientific research and social services as their responsibilities, consciously carry out academic research, and deeply understand the relationship between scientific research and teaching and social services, and strive to carry out them. Colleges and universities should create good environment and conditions, improve scientific research assessment system, improve reward and support policies, and strengthen academic exchanges, so as to encourage PE teachers to conduct scientific research.

Build an exchange platform to enhance the level of practical theory: Theoretical basis and knowledge base dominate teachers' thought and behavior. No matter academic or teaching university, teachers who can excel in academic research and teaching practice are few and far behind. Academic research is mainly for explaining and explaining phenomena, revealing rules and summarizing ideal models. Practice research is a normative theory which provides guidance for action according to practical needs and specific conditions. Academic research (scholars) and practical research (teachers) should not be the relationship between guidance and guidance, but should be equal cooperation and dialogue. Communication and dialogue will not only enable scholars to see the barrier of theory in practice, but also to enhance the insight of academic research. It will also provide teachers with broader vision, enhance their understanding level of academic theory, and make it more prudent in teaching behavior.

China's teacher law also stipulates that teachers have the right to carry out educational and teaching activities, carry out education and teaching reform and experiments, engage in scientific research, academic exchanges, and participate in professional academic groups. In order to build the Advisory Council, senior experts forum, frontier forum, forum, seminar, teacher lectures, teaching competitions, training and other forms of all levels of communication platform, providing communication and cooperation for scholars and teachers in the interaction space, to achieve the exchange of experience, wisdom, thinking collision, the formation of complementary advantages, the mechanism of equal dialogue platform.

4.4. Pay attention to study and practice the idea of Education

The basic task of sports education is to strengthen the national constitution, improve the level of national health and cultivate qualified citizens. Good learning is the process for everyone to learn constantly, to develop their strengths and avoid weaknesses, to improve themselves and to pursue an ideal state. The educational behavior of PE teachers is produced under the control of certain educational ideas, and the physical education teachers should practice what educational ideas. "Paoing gives Chuang-tzu health master" in a good interpretation, "Minister of the good way, into almost technology." Han Yu's "teacher said" said: "the teacher, so teaching and doubts." Physical education should take "preach" as the first aim and ultimate pursuit, and teach students how to do physical activities according to the principles and rules of sports. And "giving lessons" is to teach students to master all kinds of sports technology, methods and means of exercise, etc. Therefore, teachers should take the initiative to strengthen self training, to break through the traditional ideas, explore the principle and law, understand versed in sports teaching content, the school sports education and evaluation methods creatively, establish advanced educational concepts, and abide by the "technology into practice, in the philosophy of education"

4.5. Strengthen training and improve the level of teaching ability

Abilities are the individual psychological characteristic of the individual's perception, memory, thinking, imagination and imitation, and the skill is the action behavior of the individual. For a long time, most of the sports teachers understand and apply the teaching ability and teaching skills as the same concept in the teaching practice. Compared with other disciplines, physical education is much more complicated than other disciplines. No matter teaching environment, teaching conditions or teaching ability, it is much more complicated than other disciplines. Besides teaching skills, physical education teachers also have certain sports skills.

(1) Teaching skills

Teaching method, teaching method, but it. In recent years, teachers and teachers' teaching skills competitions held in Teachers' colleges and universities all over the country are to improve the teaching skills of teachers and normal students. Teaching skills reflect the personality style formed by teachers on the basis of
their own comprehensive literacy level. It is a necessary education and teaching skill for teachers. There are a lot of research results related to this, and the teaching skills of PE teachers include:

1. Design skills: setting up teaching skills, teaching goal planning skills, teaching process design skills, using teaching media skills, learning skills of affection.

2. Classroom teaching skills: organizational skills, lead-in skills, application of teaching language skills, questioning and questioning skills, teaching demonstration skills, arranging exercises and guidance skills, skills of using devices, protecting and helping skills.

3. Tutoring skills: arranging extracurricular practice skills, hidden danger prevention skills, and monitoring skills.

4. Evaluation skills: determine the evaluation structure and content, system evaluation standard skills, evaluation methods and means.

5. Research skills: to master the basic methods of teaching research, to understand the latest trends in the development of the subject and to the information retrieval skills.

Even if teachers have more teaching skills, but the sports teaching is carried out in the open environment, the implementation of difference, physical quality and skill level of students of the venues and equipment conditions, climate and environment, schools, parents and students' attitude and subjective and objective conditions are directly restricted the teaching skills of teachers, but also affects

(2) Sports skills

No doubt, the sports teachers must master the basic motor skills, in sports teaching mainly play an exemplary role, and there are errors in athletes technical level standard to measure the level of teachers of physical education teachers of physical education teachers, the relevant administrative departments at all levels to encourage retired athletes when school physical education teachers, which is lack of profound understanding of physical education, training of qualified retired athletes not again when the PE teachers of physical education brings more harm than help.

Do not deny that the sport technique of retired athletes sports skills do far more than in the physical education teachers, but the essence of physical education, physical education is to teach students correct understanding the role and influence of physical activity on the body to produce the correct use of scientific means and methods of physical exercise and sports Teachique interest, training exercise habits, form the consciousness of lifelong sports, ultimately enhance physical fitness, improve health, and not to cultivate students to have superb athletic skills of athletes, sports skills and students want to achieve higher levels of energy, should be the teaching to achieve higher cognition, based on the subjective initiative of its subject is to a decisive role, is the so-called master door, rely on individual practice. Besides, the higher motor skills will continue to decrease with the decline of physiology, age and training level. Moreover, the wide application of modern educational technology and media will make sports teachers' sports skills mainly used for demonstration. Even so, sports skills or physical education teachers should have a certain level of skill, because the movement is based on the nervous system and musculoskeletal system, complete the complex, proprioceptive chain reflex motion according to certain technical requirements, this action is moving, and as the center, sensation of the skin and viscera the central neural activities to participate in activities, teachers only in the hands of these techniques and reaches a certain level to obtain a more profound ability to proprioception, the mechanism of action of the body to produce the right to teach the students and can judge the correctness of action.

5. CONCLUSIONS

Education based on core literacy will inevitably require changes in teaching methods. Developing students' core literacy will become the basis and starting point for future physical education curriculum design. College physical education should have the courage to play at a higher level and broader perspective, the school sports into the health Chinese strategy, strengthen the unified guiding ideology of school physical education, to cultivate students' physical and mental health, social responsibility, high quality, innovation and other core literacy teaching goal. The quality of physical education teachers will determine whether the students' core literacy can be implemented in the practice of physical education. Therefore, to establish the education system from the inside and outside of the core of quality education and training system, to explore the mechanism of core literacy cultivation of PE teachers, improve the content and form of teachers' continuing education, and improve the management of school physical education teaching evaluation methods, leading teachers consciously practicing core literacy, encourage teachers to cultivate the core innovation literacy of students.

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