

Lecture Notes of Research on Volleyball Teaching Based on Artificial Intelligence

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ABSTRACT: *In recent years, many countries have been promoting quality education, and promotion of the culture of all the students and the overall quality of research and solve problems of practical ability, and multifaceted Intelligent students also advocated the development of a variety of intelligence, and that the goal of quality education. Incidentally, the theory of Artificial Intelligence quality education provides a theoretical basis, which has given us a lot of inspiration and reflection. Therefore, there is growing concern about how to use artificial intelligent theory to promote the building of our own course, the theory of artificial intelligence through the practice of research, and teaching the various branches of the combined exploration and research. Intelligent teaching system is the main form of the combination of artificial intelligence and education. The volleyball technique teaching is by teachers, students, teaching material, teaching method, field and equipment interconnected, interdependent and mutually constraining, the interaction of various factors combination is with the unity of teaching and the comprehensive behavior based artificial intelligence of Volleyball Teaching can effectively simulate the expert control the process of teaching thinking, to guide and optimize the preparation process, through the examination of teaching experiment, the system auxiliary teaching effect is remarkable.*

Keywords: Volleyball, Artificial Intelligence Technology, Teach.

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1. Introduction

Along with the computer in the teaching becomes more and more important, combining with artificial intelligence to volleyball teaching is closer and closer [1]. The application of computer science technology and artificial intelligence principle, studies of volleyball technique teaching. Over the years, intelligent tutoring system model in the field of AIED occupies a dominant position [2]. This is primarily because it the intelligent CAI system is very low or even no intelligent at all, relative has certain

reasoning ability; second, the research and development of ITS involves almost all aspects of artificial intelligence, this naturally attracted many researchers interest. Therefore, these years, the research of ITS has a great development. We randomly selected a school 20 boys, ten people in a group, to them the volleyball teaching and a group of traditional methods, a set of artificial teaching. Related data charts following shown in the table1.

	Excellent	Pass	Fail
Traditional methods	1	5	4
Artificial teaching	4	6	0

Table 1. Two groups of people performance statistics

Artificial Intelligence is a new technology to study and develop the theory, method, technology and application system for simulation, extension and expansion of human intelligence[3]. Artificial intelligence is a branch of computer science. In order to understand the intelligence essence and produce an intelligent machines which react like human being. The research in this field has become more and more mature. The application of this technology is also expanding[4]. Nowadays, artificial intelligence has been applied in sports area and teaching area.

2. State of the Art

2.1 The Related Research on the Formation Process of Volleyball Skills

Name of document	Author	Journal Title	Time	Type
An experimental study on the acquisition of volleyball skills of 14-16 year old girl	He Ping	Journal of Wuhan Institute of Physical Education	2005-04	experimental research
Study on Application of Microteaching in the Volleyball Skill Teaching	Qing Changhui	Journal of Nanjing Institute of Physical Education	2004-10	application research
The teaching strategies of the high altitude period in the formation of volleyball skills	Zhang Jianwen	Journal of Jilin Institute of Physical Education	2004-04	method study
The role of volleyball skill learning in the realization of the goal of the new curriculum standard	Qiu Jinxin	Sports teachers	2004-03	application research
On the perception of the formation of volleyball skills and its training methods	Li Ning	Journal of Guangzhou Institute of Physical Education	2003-03	method study
Analysis on the information feedback of Volleyball Skill Teaching	Xiang Hongyun	Sports Science Research	2000-06	application research
On the role of human perception in the formation of volleyball skills	Wang Bing	Journal of Northwest Normal University	1995-03	application research

Table 2. Chinese journal title contains “volleyball skill” article be positioned above the tables

Through the online search of China Academic Journals Net library, with “1979-2012” as the time node, the title of “motor skills” is the title of the search term, and a total of 934 articles were retrieved. Which contains “in volleyball skill” in the literature only 7 pieces, accounting for 0.75 of all sports skills research literature; In order to “Volleyball” as the title search words, a total of 9132 articles were retrieved, to ensure the accuracy of the data, the author made a manual search of these articles, literature,

confirmed the 7 articles and the accuracy of the volleyball movement skills research literature[5] (see figure 1). This 7 is the profile information as in table2.

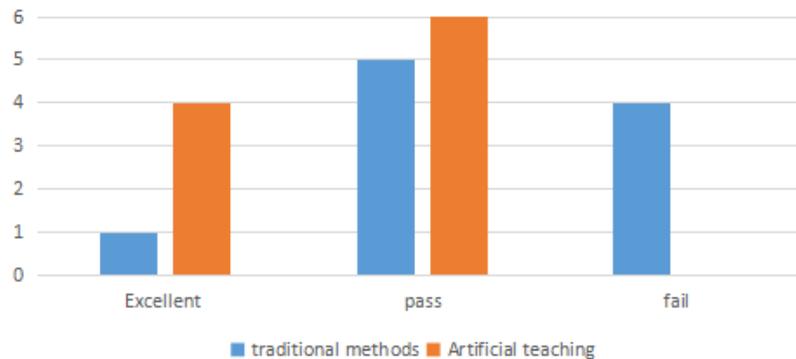


Figure 1. Two groups of people performance statistics

With the help of artificial intelligence, teachers can teach with advanced multimedia to fully display the contents of the teaching material, which is advantageous for students to understand more clearly the action structure and deepen the understanding of the key technical aspects [6]. Students can establish the corresponding cognitive structure of the technical action in the mind so that students learn more about the more difficult technical action and it is the key technology of understanding and structural analysis. The external interests of students into cognitive interest, improve their learning efficiency. In the improvement and perfection of the action stage, the development of intelligence to expand or stimulate the brain to inhibit the gradual development of the part of the brain. And what is more, the quality of action has improved [7].

2.2 Reasons for the Lack of Research on Volleyball Skills

In the research of volleyball, volleyball skills research rarely, is almost blank, not to mention the process of the research on the formation, it proves that the theory and practice of volleyball sports skill learning combination problem does not really cause the majority of the coaches and the attention of researchers, the analysis the main reasons are the following aspects: first, sports skills as an independent discipline in China started late, slow development, attention needs to be improved; second, is currently engaged in sports skills in our teaching and research work [8]. The following figure 2 is the field of artificial intelligent Volleyball Teaching.



Figure 2. The field of artificial intelligent Volleyball Teaching

In Volleyball Skill Teaching in volleyball technique and tactics is an important aspect of sports teaching and the main teaching form[9]. We know that the volleyball technology refers to all kinds of athletes in the game the rules under the condition of reasonable strokes and cooperation with the general term [10]. It is the basis and an important part of volleyball, divided into ball and without the ball technology [11]. The ball technology includes passing and digging, smash, service and block; and technology including preparation posture, movement, and various take-off cover action etc [12].

3. Methodology

3.1 Intelligent Agent Model

Intelligent agent is a computer system in a certain environment. Obviously, a ITS [13] with an intelligent agent should also have the same characteristics, so the intelligent agent technology with the construction of ITS is a promising direction a product is the combination of intelligent teaching agent [14]. Intelligent teaching agents are able to handle the teaching process as a human as a teacher role in teaching system. The students have different knowledge bases, proficiency and learning style, so students' behavior is difficult to predict, to include these uncertain factors environment [15]. This effect is often through dialogue intelligent teaching agent and students "Teacher - student" 1 to 1 form to achieve our system. In fact, teaching is a very complicated process (see figure 3).



Figure 3. The scene of Volleyball matches

3.2 Innovation Intelligence Stage

Stage	Content	Target	
Form Of consciousness	sense of attack	serve a ball	Find someone, someone, etc.
		smash	a large, small slash, heavy, light buckles for blocking hand, when asked the poor.
		processing ball	when asked to find the gap, etc.
		protect	anticipation, white I protect, the protection of the companion
	Sense of defence	return of service ' smash ' block back ball	on the ball to the pre sentence, and so on.
		intercept	the Internet, block protection etc.
	Sense of organization	follow the ball	peer error ball shot each other
		dig pass	Pre sentence, mobile, etc.
		pass	Pre sentence, arc, direction, etc.

Table 3. Content and methods of mental skill training in innovative intelligence stage be positioned above the tables

The volleyball movement skill formation process innovation intelligent stage refers to the learner in the training or competition [16]. Firstly, the operational goals of innovative intelligence innovation in intelligent stage of the operational objectives: to improve the volleyball skill use control and innovation ability, optimize performance, achieve the action of low consciousness control, change of concentration field on the environment and competitors[17]. Secondly, intelligent stage side Focus on the learning of the content and innovation of training methods of intelligent stage of learning content [18]. Content and methods of mental skill training in innovative intelligence stage be positioned in the table 3.

The application of artificial intelligence in the volleyball course, from the aspects of teaching design, teaching plan and teaching methods to mobilize the students' intelligence [19]. Which can help to enable the students to understand their own shortcomings and advantages, then stimulate their enthusiasm and initiative that will help strengthen the learners' mastery of volleyball sport technique and sport skill as well.

4. Result Analysis and Discussion

Intelligent innovation stage is in the race to improve technology comprehensively, the use of tactical control ability and self organization innovation ability, and continuously improve the performance of individual and collective, the competition environment of the instability and unpredictability of the environment is an important feature of this stage, should pay attention to the environment regulation shows low control features at this stage first, adaptation and control skills performance mainly depends on learners to environmental change; secondly, because of the environmental instability and unpredictability of volleyball skills with occasional and repeatability, provided in the first three stages of learning can not provide conditions for skill level to improve the environment, characteristics of self organization innovation intelligence may be provided; finally, the unstable character of environment, can be targeted, consciously exercise the exercise of volleyball skills, Efforts to form a highlight personal style and expertise, for example, in actual combat improve smashing power, flexible direction of the ball, seize the opportunity to play the ability of light fastball.

In the intelligent teaching at the same time, pay attention to the intelligent training, focus on the development of students' personality. Pay attention to the characteristics of students personality characteristics and learning style based on artificial intelligence, to adapt to the characteristics of students in the teaching mode, which not only with the spirit of quality education is consistent, but also for a new round of curriculum reform provides strong theoretical support and the practical education.

Volleyball Teaching based on artificial intelligence with the students as the center, the multimedia teaching and the artificial intelligent teaching tools, creatively to promote students' intelligence development skills and unity in the teaching practice, improve students' proficiency in the use of its various intelligence (especially intelligence ability). On the other hand, it can effectively develop students' thinking, and with their watching, listening, speaking, thinking, practice abilities combination, which can improve their learning enthusiasm and initiative.

In conclusion, the multiple intelligent teaching on students' learning complex action unit review or to stimulate the learning interest of the students with low interest in learning is particularly effective, and can also realize the interaction between teachers and students in the interactive teaching, make students' emotional participation will gradually get training in practical courses.

5. Conclusions

To sum up, the volleyball skill teaching intelligent preparation system design and application, the volleyball technique teaching preparation process more scientific, automation and standardization, to achieve the optimization of teaching process and to improve the teaching effect. With the development of the times, the application of artificial intelligence has been overwhelming and its application in volleyball teaching, the teaching is more and more convenient.

The application of artificial intelligence in the volleyball courses teaching, make up some shortcomings of the traditional intelligence theory which help to guide the teaching. But change the traditional teaching content is not broad enough. Based on the artificial intelligent teaching mode has expanded the scope of the course, "teach for multiple intelligence", "through artificial intelligence" around seven intelligent organization of teaching. The implementation of artificial intelligent volleyball teaching causes need more time, energy, creative thinking and practical action. In addition, the teachers should pay attention to the sustainable development of the students.

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