

RESEARCH ARTICLE

LECTURE NOTES OF RESEARCH ON VOLLEYBALL TEACHING BASED ON ARTIFICIAL INTELLIGENCE

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ARTICLE DETAILS

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ABSTRACT

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.

1. INTRODUCTION

Along with the computer in the teaching becomes more and more important, combined with artificial intelligence (Brooks, 1991) to volleyball teaching is closer and closer. The application of computer science technology and artificial intelligence principle, study of volleyball technique teaching. Over the years, intelligent tutoring system model in the field of AIED occupies a dominant position (Grimm et al., 2006). This is primarily because it the intelligent CA system is very low or even no intelligent at all, relatively has certain reasoning ability; second, the research and development of ITS involves almost all aspects of artificial intelligence, this naturally attracts

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 and figure1.

Table 1: Two groups of people performance statistics

	Excellent	pass	fail
traditional methods	1	5	4
Artificial teaching	4	6	0

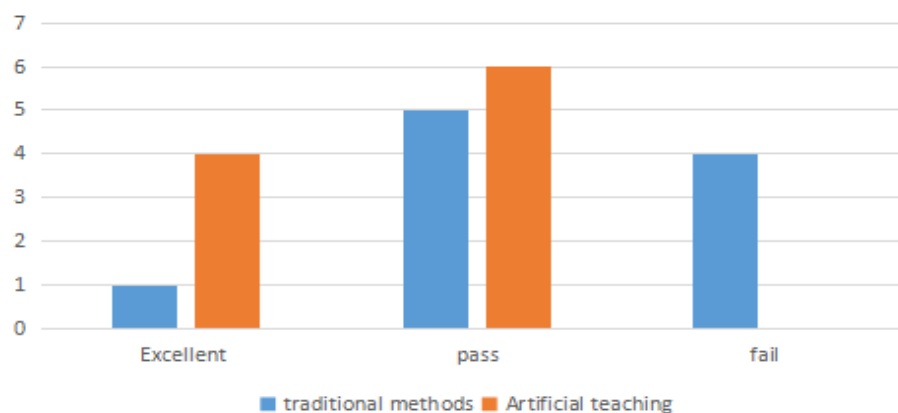


Figure 1: Two groups of people performance statistics

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2. STATE OF THE ART

2.1 The related research on the formation process of volleyball skills

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. This 7 is the profile information as in table2.

Table 2: Chinese journal title contains "volleyball skill" article be positioned above the tables.				
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

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 .The following figure2 is the field of artificial intelligent Volleyball Teaching.



Figure 2: The field of artificial intelligent Volleyball Teaching

3. METHODOLOGY

3.1 Intelligent agent model

Intelligent agent is computer system in a certain environment. Obviously, a ITS (Yu et al., 2004) with 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. Intelligent teaching (Hartley and Sleeman, 1973) agent is 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. This effect is often through dialogue intelligent teaching agent and students "Teacher - student" 1 to 1 forms to achieve our system. In fact, teaching is a very complicated process.

3.2 Innovation intelligence stage

The volleyball movement skill formation process innovation intelligent stage refers to the learner in the training or competition. 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. Secondly, intelligent stage side Focus on the learning of the content and innovation of training methods of intelligent stage of learning content. Content and methods of mental skill training in innovative intelligence stage be positioned in the table 3.

Table 3: Content and methods of mental skill training in innovative intelligence stage be positioned above the tables.			
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.
	Sense of defence	protect	anticipation, white I protect, the protection of the companion
		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.	

4. RESULT ANALYSIS AND DISCUSSION

Intelligent innovation stage (Glynn et al., 1996) 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 cannot 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 (Hallinger et al., 2011) 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.

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.

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