The research of Computer assisted sports management system

Fuxue Zhao

Department of Physical Education, Gansu Normal University for Nationalities, Hezuo 747000, China

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Abstract. With the rapid development and improvement of public life and social economy, the whole society has entered into the age of information, which can use common computer assisted control system more and more widely. This paper, proposes the concept of a computer aided sports training management system, establishes the system model and brief statements on the design and application of computer assisted sports training system.

Introduction

Computer Assisted Instruction (CAI) is an assistant teaching method, which has been widely used in various teaching activities with the rapid development of computer and network technology since the early 1990s. By means of using a variety of software processing tools, such as PPT, FLASH, 3DMAX, PREMIERE, the teaching contents are optimized in sound, image, graphics, video and other information processing, then the courseware's characteristics of richness, novelty, interestingness, figurativeness and organization are eventually obtained. Application of computer assisted sports training system is very extensive, which has played an important role in various industries and various areas, specifically in the following aspects: (1)Office: Automatic control system can automatically start and run, which can ensure the whole process of work conducted in the automatic mode. At the same time, it can automatically repeat records of operation, which can be used in products and software presentation. It can completely replace the human operation, assisting the allocation of human resources. Therefore, the computer program can easily improve the efficiency of the office automation in many aspects. (2) Application of family: as people's living standards and cultural accomplishment enhanced, people have paid more and more attention to the quality of life to face the fast pace of life, the computer assisted sports control system is applied more and more widely in family life. Moreover, the computer automatic control system can broadcast any multimedia entertainment, which can connect with an environmental sensor, automatic operation control system. This article makes brief statements on the design and application of computer assisted sports training system.

The Principles of Constructing Expert Sport training System

With a further recognition on the experimental features of economic management, we have a deep thinking about the principles of constructing sports training system, and summarize the following principles:

Systemic Principle. Due to involving many disciplines and covering many majors, the construction of sports informatics sports training system is a complex systemic project. In order to build a complete and reasonable system, we must follow the system theory, especially the points of view about the integrity, the interrelation, and the dynamic evolution. In addition to the orderly planning and integration among the knowledge in the sports training, the sports training must be combined with other practice teachings, such as theory teaching, teachers' scientific researches, and advantages of school disciplines and the development of local economy.

Modular Principle. The sports training of sports informatics should include the teachings of computer software and hardware technique, database technology, data acquisition technology, information retrieval, data mining technology, artificial intelligence technology, simulation technology and other disciplines and relevant professional experiment teachings. According to the

objective differences among contents of various disciplines and majors and the unified planning based on the disciplines, breaking traditional methods based on courses, the system divides the integrity into modules scientifically and reasonably, therefore the students of different disciplines and different majors can choose related modules to learn [3]. In the process of dividing the modules, we should abide by the principles of high aggregation and low coupling of module contents to fully embody the differences and relations among disciplines.

Hierarchy Principle. In addition to making a lateral distinction, according to the different teaching aims and the deep analysis of sports training, we should map out different vertical hierarchies scientifically and reasonably, and build a hierarchical and gradual sports training system to meet different learning needs of students in different grades, different periods and different purposes.

Profitability Principle. No matter how to divide horizontally or vertically, the standard to check the sports training system is reasonable is benefit. There are three aspects of benefit: first, it is the technical benefit to meet the talent training target; second, it is the economic benefit under the software and hardware environment; the last one is the social benefit that can demonstrate, radiate and lead the development [4]. If the three aspects are noticed, the integration and completion of constructing sports informatics sports training system can be guaranteed.

Multilevel Sport Expert Training Control System

With the current social and economic development, the computer assisted sports control system is playing an increasingly important role in all walks of life. It can be said that all aspects of the application of automatic control system can actively liberate the workforce, which can improve labor efficiency, system programming and design of the software as well. The common computer assisted sports can affect the operation of computer as well as the control of the computer, which can enable the computer to replace human operation automatically, so as to achieve the purpose of management more efficiently. Therefore, it can greatly improve the application of science and technology through designing the assisted sports systems, which can make good use of common computer to develop computer deeply and make the computer more convenient for daily life and production.
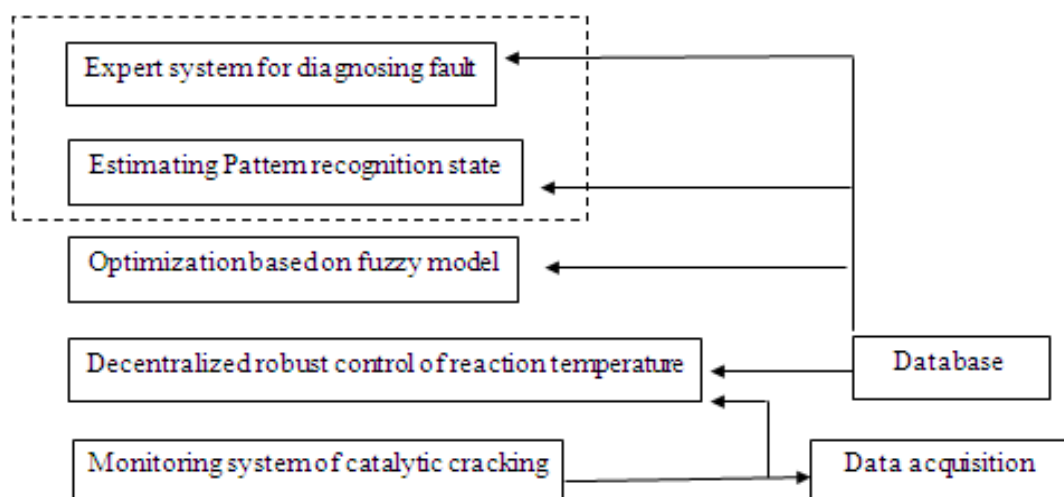

Fig 1.The main structure of the training system

The expert control system is a hot topic in the study of assisted sports control, there are a great deal of systems both in domestic and foreign development. In fact, multilevel expert control system is a hierarchical structure, which can be divided into two stages, namely the global decision level and the local decision level. The global decision is a man- machine system, which is mainly to solve the decision problem of global, long-term. While the local decision is also a man--machine system, but it is decided by local decision makers and optimal coordinator, which is mainly to solve the daily, local

channel and short-term problems. As far as assisted sports computer control system is concerned, a lot of universities and units such as: Tsinghua University, Zhejiang University, Chongqing University, Central South University, Academy of Sciences Institute of Automation, Shenyang Institute of Automation, Institute of Computer Institute, and Chengdu Institute of Computer Application, etc have many researches on it. So the units have conducted a lot of researching work, which has made some theoretical and practical achievements in scientific research, such as catalytic cracking unit (FCCU) computer control system. The system is mastered by Professor Lv Yongzai, Zhejiang University, who introduced a method of artificial intelligence to set up a non-traditional training mode as the main structure of the system, as is shown in Fig. 1.

Hierarchical Structure of Sports training Assisted sports Control System.

Professor Saridis, the internationally renowned scholar, who presented a hierarchical assisted sports control system structure for a representative. It consists of three stages. The first stage is the organization level, which can realize the decision of system, operation planning, learning, communication between man and machine, etc.

It can receive and explain the input instructions, collecting feedback information of the system, by means of analyzing the decision and determining the execution of the task, which can be based on the appropriate execution order for the next stage of implementation of the sub task. It requires information processing ability and knowledge process capability, which can be called a convenient man-machine interface. The second level for the coordination level, which is between the organization level and the third interface, accepting the controlled information of feedback received from the control instruction sent by the organization level and the coordination control instruction level. The third level is the executive level (or direct control level), whose task is to control the input from the coordination level in accordance with the performance requirements to achieve closed controlled variable control. The hierarchical system of assisted sports distribution is followed with a high intelligence, low precision and low intelligence, high precision designing principles. Fig.2 shows us the diagram of the system structure.
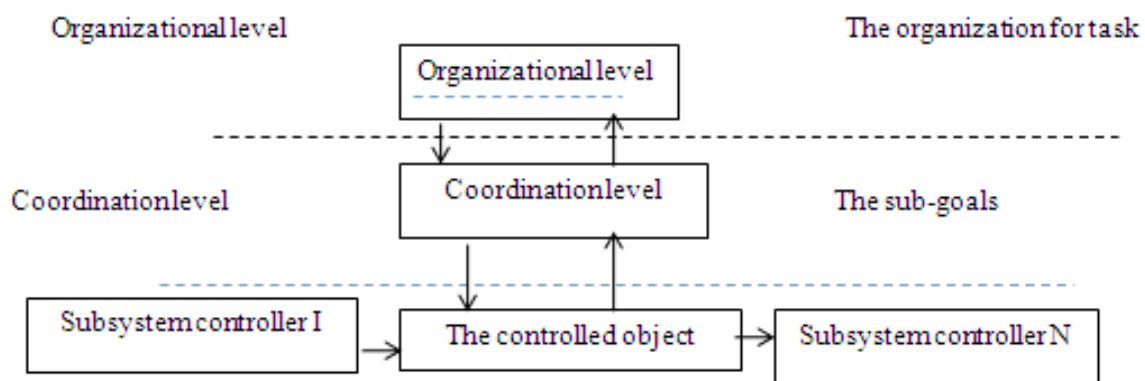

Fig. 2 Hierarchical structure of sports training assisted sports system

Conclusion

Computers have been more and more used in a deeper level in modern society. And the applications of the computers with the performance have realized the computer assisted sports control system. It actually has achieved good results in many aspects such as family life, medical field, education and so on, which has had great effects both on the commercial exchanges and some other aspects.

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