Application Analysis of Computer Technology in Physical Training and Competition

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Abstract. With the development of the national economy, China's scientific and technological level has gained rapid progress. In today's society, advanced science and technology is widely used in every corner of society, practices the scientific concept of development, promotes the adjustment of industrial structure, optimizes the allocation of resources, and promotes economic development. In physical training and competition, the application of computer technology has become the trend of the times. From the specific circumstances of today's physical training and competition, this paper further analyzes the application of computer technology in physical training and competition nowadays.

Introduction

With the development and progress of the international community, competitive sports today faces much more intense competition. How to get larger training room for growth and competitive advantage in physical training and competition, and fully guarantee the objectivity of the game, has become the objective needs of the competitive sports in new era. The application of computer technology in physical training and competition has not only greatly improved the efficiency and science in physical training, but also improve the fairness and orderliness of the game.

Application analysis of computer technology in physical training

In modern competitive sports, its training trends more scientifically. Scientific training plan and arrangement can greatly dig out their physical potentials and maximum realize effective training for muscle groups and physical fitness to achieve an efficient operation of training. The application of computer technology in physical training is not only the inevitable trend of modern competitive, but also the realistic requirement of competitive physical training.

The application of computer technology in physical training is mainly reflected in the collection, processing and analyzing of training information and the establishment of athletes' training program computer management system. The collection of training information, like the records of each target information in the overall training process, the record of athletes' body indicators and the record of various training information and other projects are finally entered into the computer management system. The computer management system through its internal system program, handling and operating the information, and analyzing its underlying nature and laws to provide scientific and constructive comments on physical training. In the institute of training programs, the application of computer technology is capable drawn the optimal solution through the operation of internal software and significantly saving labor costs. By the computer management system, we can intuitively understand and master various indicators of athlete's body and the degree of completion

of training, which is very convenient to make appropriate adjustments and addition for training, thus scientifically and soundly promoting their physical fitness. In the determination and data statistics of indicators of athletes like seed, resistance, strength, flexibility and others all mixed in computer system to forming a specific individual, matched with the body condition of athletes which enable teachers fully institute a scientific exercise load, training intensity and training round.

Concerning with action skills, the application of computer technology could clearly break down the technical movements, dismantling and detailed analyzing each movement segment which become a good reference for athletes. In addition, when athletes make technical actions themselves, the system can also base on the changing physical indicators and related gravity, centripetal force, height, angle and other parameters, to reflecting their deficiencies in detail, meanwhile, through the knowledge of biomechanics to found its correlated physical conditions which acquires to be improved.

Application analysis of computer technology in physical competition

In physical competition, the accuracy of the competition data is the most important prerequisite of all the work. The application of computer technology in competition can fully ensure the fairness and accuracy of the data. In current field events, the advanced camera relying on computer technology through more than two thousand times scan per second, accurately crawl the moment the players reach the end and calculating the precision competition data. Comparing with traditional measure tools, the application of computer technology greatly improved the fairness and accuracy of physical competition, also guarantee the vital interests of the contestants.

In the tennis competition, the high-precision instrument can clearly capture the running track of tennis in air, and playback at any time or pause to watch tennis's coordinates change and direction change in three-dimensional space. And in football match, electronic recording instrument can accurately record athletes' shot opportunity and the position of accurate force, to facilitate the determination of the corresponding results of the competition. In addition, for some full marathon sports competition, the installation of electronic sensing device in the sole of athletes, by which can upload athletes long distance real-time situation to the server, monitoring whether athlete are completed the sport within the constraints of the rules throughout the race. The computer technology is also widely used in basketball games, doing the processing, storage, transmission and represent of the video and audio signal in the competition, realizing data information's conversion toward media information, and finally achieve a wide range of real-time dissemination of events. In sports competitions, the application of computer technology is fully reflected in movement races and providing a stable guarantee for sporting events at the technical level, and roundly promoting the smooth development of competitions.

In some larger sporting events, the system integration of information management system relying on computer technology plays an important role. Information management system as the core of the information processing system, widely accepted the input of various information in the games and by the high-frequency and high-efficiency analysis and calculation, quickly draw out the fair results. Information management system generally have many features like reliability, security, real-timely, high fault tolerance, adaptability, etc. that can make sure the game situation was timely spread in a wide range.

Application analysis of computer technology in the Beijing Olympic Games

The Olympic Games is an international sports event of all mankind, in the 2008 Beijing Olympic

Games, computer technology has been fully and classically applied. In the Games, the Olympic information system is established relying on advanced computer technology, it makes the Olympic sports broadcast timely, meanwhile timely present specific game score, athletes personal information and related technology statistics and others, intuitively and particularly ensure the crowd who attention to the Olympics get adequate and effective competition information. The application of computer technology is widely reflected in the Olympic management systems, sporting events broadcast system, the stadium broadcasting system, results evaluation system, information display systems, radio frequency coordination systems, mobile communication system and others, and in the technical level guaranteed the normal operation of Olympic Games the international sports event.

During the Beijing Olympic Games, Lenovo Group providing nearly 30,000 units of IT equipment for the Beijing Olympics, extensive coverage the seven tournament host cities in the county, supporting about 400 race projects and related activities. Related technical staff developed an information management system exclusively for Olympics. This system promoting the scientific and efficient undertake of Olympic-related works in many aspects like spatial planning, the use of materials, venue operations and comprehensive services.

To ensure the Olympic Games can be normally and stably carry out, and timely avoid the bad effects of weather, the Olympics also uses a supercomputer of Beijing Meteorological Bureau carrying the weather forecast program, which can predict the weather data 44000Kmz per hour. In addition it also has the ability to forecast air quality, avoiding the impact of bad weather on the event timely.

Olympics as a sporting event of all mankind, has a high demand on the relevant technical support broadcast, event recording, data processing and analysis capabilities. In the process, the highly integrated information management system based on computer technology has fully supported the normal and order undertaken of the Games.

Conclusion

Computer technology has greatly promoted the development of physical training and competition, and the comprehensive reform and restructuring of the sports industry, optimize resource allocation, saving the redundant costs. In the process of social progress and development, the emphasis of computer technology is an inevitable demand of the times, and the objective needs of reality. Only with the development of computer technology and promoting its usage in physical training and physical competition, can we promote the development of physical competition fundamentally, enrich people's growing material and cultural needs, and promote advancement of the whole society.

References

[1] Hao X. Application of computer technology in physical training and competition. Journal of Sports and Adult Education, 2009, 02: 59-60. (In Chinese)

[2] Xu J, Qu M, Xiong Ji. Review of the application and analysis of data mining technology in physical training. Computer Knowledge and Technology, 2012, 22: 5492-5495. (In Chinese)

[3] Hong X. Application of computer technology in physical competition. Automation and Instrumentation, 2015, 10: 142-143. (In Chinese)

[4] Lin J. Application of Information Technology in Physical Training. Electronic Test, 2014, 09: 134-135. (In Chinese)