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## Information technology application model in sports

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### ABSTRACT

The economic development of the society promotes the use of information technology in various industries. In the new era, the contact of sports and the information technology becomes closer and closer, and all kinds of high-tech products are widely used in sports activities, such as: the location tracking system in long-distance running item, motion graphics technology, strongly interactive sports games, sports technology monitoring, diagnosis and intervention system based on the network information technology, etc. All these make the people who pursue leisure and entertainment experience fashion and the charm of science and technology when participating in sports activities. Meanwhile, they bring new momentum and information model for the sports development, so as to complete the various tasks in a convenient and quick way. In sports education, the use of information technology has changed the teaching process and pattern. PE teachers can use information technology to improve the teaching quality; adopt corresponding teaching methods reasonably, for example, the sports instrument of monitoring pulse, heart rate and energy metabolism. Using information technology to design the teaching process is a new mode of the future PE teaching, which can promote the sports education reform. So, the paper uses action research, literature, comparative analysis and other research methods to study the application of modern information technology in sports, to explore the status and role of information technology in Society and in teaching. According to the different groups in sports participation and the change of time and space, three integrated modes are constructed to introduce modern sports means. Adopt different teaching methods and contents to improve participants' sports interest, sports knowledge and sports skills, so as to improve the sports effect and push forward the sports development.

### KEYWORDS

Information technology; Physical education; The value of the mode; Sports.



## INTRODUCTION

With the rapid socio-economic development, people's living standards improving, enhance physical fitness, improve health has become goal of the present people. As an important part of education, the purpose is to enhance the physical fitness of college athlete, to enhance physical and mental health, to teach knowledge, culture consciousness, develop consciously exercise habits through scientific and rational teaching methods and means, thereby to achieve the goal of lifetime. However, in the process of full implementation of quality education and nurturing the talents of all-round development, subjected to the constraints of the traditional teaching methods, the realization of teaching goals and teaching effectiveness are facing challenges. The rapid development of information technology multimedia technology, information technology is not only a sign of the arrival of the knowledge economy<sup>[1]</sup>, but also be the main symbol of education in the era of knowledge economy; left the education information, education innovation will lose carrier; while so-called "innovation" without this carrier, it also cannot meet the requirements of the knowledge economy era of education. As an important part of education<sup>[2]</sup>, Physical education exists as a discipline, and also to adapt to the requirements of the times of the "knowledge economy". IT can provide a wealth resources and environment, is able to break through the limitations of the book which is as the main source of knowledge, can take advantage of a variety of resources to enrich a closed, isolated classroom teaching; promote the combination of information technology and physical education curriculum, then reach progressive realization of the PE Teaching and modern knowledge. Action research, literature, comparative analysis and other research methods are used in the thesis. by the use of information technology tools and the optimal combination of traditional teaching methods, the Internet, multimedia and other information technology tools for teaching, deepening the theoretical basis and factual basis of the information technology in college to explore the status and role of information technology in the College Physical Education.

## IT VALUE IN SPORT GAMES

First, important role of information systems. Multi-sports is an important concern in today's society of social and cultural activities and participation constantly increased. With the high development of computer and information technology, information technology in sports, especially in large-scale comprehensive sports should be in, it has a very broad and deep. Comprehensive sports games in the competitive level that "higher, faster, stronger" requirements, but also for a comprehensive information technology system placed Games is more accurate, faster, more stable, more detailed" service expectations. IT is important to the success of large-scale comprehensive modern technical means indispensable to sports events, in preparation for the tournament, the whole process of events running an extremely important service support functions. Important aspect of this work is also focused on preparations for the organization to reflect the standard of the tournament and tournament operation management level.

Second, The Games data network. EAG-based networks and communication systems will make full use of communication resources in Tianjin, the construction of a dedicated data communications backbone. Private network based on SDH multiservice transport platform (MSTP ring network) to connect the city's various venues, physically-based backbone network to regional metropolitan area, consisting of three venues LAN network architecture. Relying on the entire private network Tianjin Ring network that dramatically improves the security, network redundancy, and greatly reduces the erection of the past events alone cost the cable connecting the various venues. In addition, with the continuous development of 3G technology, we use 3G VPDN technology event dedicated network backup, ensuring high-speed, secure and stable transmission of data in the case of game information private network failure.

Third, what is the core of the East Asian Games IT systems is. East Asian Games IT system consists of a number of applied technology system structure, which is a multi-sport competition information system information technology systems core systems. I will only make a brief introduction Competition Information System.

Competition Information System to contest information services as the main clue as competition management, event scheduling, game process control, results processing, information dissemination and other aspects, to provide efficient and stable applications. Its main function is to complete the Games contest registration, timing and scoring, results processing and information dissemination and other work, including the acceptance of race registration information, planning the Games scale, define events, choreography competition schedule, overall race plan, acquisition and processing performance information, generate Print various competitions report, published information about the Games and so on.

According to the East Asian Games in demand, competition timing and scoring systems into information systems, on-site treatment system performance, integrated processing system performance of three subsystems. Electronic timing and scoring system as an auxiliary referee, assistant referees become a strong, truly fair and equitable competition. Live Scores processing system to provide first-hand information on the contest for the referees, sports teams, media and the public. Consolidated results processing system is to collect and integrate all competition venues contest information, external information service platform to provide comprehensive information on events, but also multi-sports Games important difference with single sign.

Fourth, information technology major work. Last year, the Ninth National University Games held in the city, we had a very good attempt at comprehensive Games IT system construction and operation aspects. East Asian Games will be international multi-sport events, competitions and more widely distributed competition venues, tournament information and data scale, timeliness, accuracy, security, information on race events data acquisition, processing and integration of statistics released and a higher level of information systems operation and management requirements. To this end, the committee established the IT department, according to adhere to high standards, and strive to do high-level tournament goal, a team of experts in all aspects of intensive, scientific plans IT systems, careful organization and implementation. Currently, the general scheme of the Sixth East Asian Games IT systems has experts; specific embodiments are step by step design. Stadiums network access, cabling survey has been completed; race registration enrollment, timing and scoring, results processing, data exchange, information dissemination and other information systems design contest is being refined; events command system, exciting tournament points / live applications such as planning and technical systems Main Press Center, the primary data center, the main operation center site selection and other preliminary work smoothly.

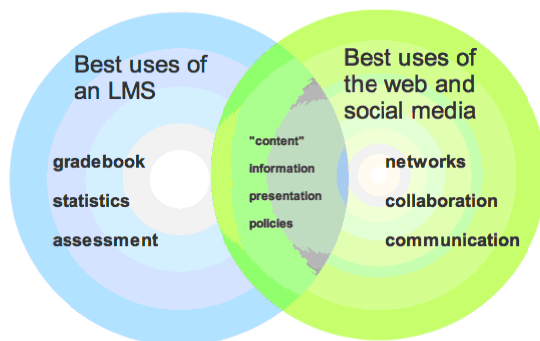
Large events IT system is a complex system engineering, but also organize international events hosted important and difficult, we must, under the municipal government leadership, adhere exchange all resources, set the wisdom of all parties to build an economic and practical, technologically advanced, secure and reliable IT system events to ensure the success of the East Asian Games will be held, to provide convenient, fast, stable and secure tournament IT security services.

## **CHARACTERISTICS OF INFORMATION IN THE SPORT GAMES**

Using a variety of information services it provided, according to established procedures, users access to various forms of information resources to meet their needs. At the same time, teachers can also take advantage of a variety of information technology to establish LAN and related space which are used as a tool of learning guide and communication and to guide athlete to effectively explore learning. Integration : Taking advantage of network technology, a variety of media can be linked organically, specific media information can be collected, collated, storage<sup>[3]</sup>, processed via text, voice, image, image.

Interactivity : It refers to human-computer talk. Thus, contributing to teachers to effectively access and use information through the use of modern information technology, and a broader field has been opened up. Diversity refers to the media information which can be spread through diverse forms of text, sound, graphics, and image, animation, no longer limited to numeric, text and graphic images. The Internet has become the largest electronic information repository in the world. Diversity is conducive to teaching methods, content is more humane. As strong operational disciplines, for the purpose of human growth, development, health, it is not good only following the premise of the body's own law of motion exercise, so the Master of Science education is particularly important. Aim of College Physical Education is not only to enhance the physical and mental health of college athlete, it is more important to teach the concept of lifelong<sup>[4]</sup>. The same time, by means of multimedia technology, some rules of the PE, the essentials are introduced in order to facilitate athlete a better understanding of live. Based on computer and network, as means of multimedia, modern information technology achieves sharing resource of information media<sup>[5]</sup>. Rapid development and wide using, modern information technology not only improve the promotion of educational thinking and educational philosophy in the field of education, but also contribute to the improvement of educational methods and means. Network and multimedia-assisted used in teaching and education has become an innovative teaching methods, and the introduction of modern information technology, electronic audio-visual technology and shaped audio materials to teaching program has greatly enriched the teaching methods, optimize structure of class, and make it be full of fun, situational, interactive.

It conducive that athlete gets more information in the sound shape and elegant, colorful teaching environment, then finish human cognitive processes: perception rises to rational cognition, the rational cognitive pose role on perception, again and again; sublimation of human rational cognition is achieved. Founding intuitive, vivid teaching situation, creating an immersive, totally realistic learning environment, with real scenes, lifelike picture, attract the attention of athlete, urge athlete to think, to tap its potential, train their practical exercise capacity. Teachers should focus on the training objectives of the college curriculum to start teaching, focused and difficult should be reasonable, proper. In the teaching, the key<sup>[6]</sup>, difficult and common malfunction shooed be made into courseware using modern information technology, through a step-by-step demonstration, slow motion, explaining to discuss with athlete and analyze, thus contribute to the athlete on the proper understanding of the major and difficult, so key actions of the relevant are grasped intuitively, actively, three-dimensional, comprehensively, the actual teaching effectiveness is improved, too. The study shows that, when the interest in learning and learning contents are consistent, best learning effect can be obtained. Integration is a major feature of modern information technology, teachers can make use of the network technology and multimedia technology to transform related courses information into text, sound, graphics, images, and show the information on the screen, then make athlete exposure to the interacting since of sound, light<sup>[7]</sup>, shadow, stimulate the various senses of the athlete through vivid sound, dynamic and realistic picture and brilliant colors, thereby enhance the athlete' interest in learning, induce their motivation and intellectual curiosity, improve learning initiative and initiative. Studies have shown that 94% of information human get is through science of visual and listen, of which 82% is through visual. This shows that visual perception is an important organ of the human accessing to important information. Effective use of modern information technology in curriculum not only stimulate the senses of the athlete, attract the attention of learning, but also provide athlete with a lot of opportunities of information input<sup>[8]</sup>.



**Figure 1 : Analysis of the role of IT in Physical education**  
**APPLICATION OF INFORMATION TECHNOLOGY IN SPORT GAMES**

Physical education curriculum are generally in the outdoor teaching, the site constraints effective use of modern information technology, physical education teachers should design syllabus rationally based on the progress of courses and teaching needs, interactive way of indoor and outdoor not only meet the needs of the outdoor teaching, but also show the advantages of multimedia teaching. In actual teaching, teachers should do the reasonable use, avoid undue reliance on IT, the only reasonable use of information technology can obtain good teaching effect. With the rapid development of modern information technology and its application in the field of education, it provides a beneficial tool for PE course teaching, scientific and rational use of information technology to do physical education help to promote the improvement of teaching effectiveness. However, how to use information technology to make courseware is the teaching key. Practice shows that the courseware should be made thoughtful, in spite of attracting the attention of the athlete. In the teaching, various teaching resources should be used rationally, hardware and software should be combined organically, and entry point should be identified accurately. In the process of information transmission, prioritize; focus and difficult, grasping the teaching content and progress should also be handled properly<sup>[10]</sup>. Affected by China's exam-oriented education, many educational managers have always believed that physical education is dispensable, that identity of the physical education teachers is head of the child, physical education is practicing formations, to give the athlete a few balls, let them play freely. Therefore<sup>[9]</sup>, the investment of facilities of hardware and software in the College Physical Education is small, so development of teaching is restricted. In order to highlight the important status of physical education, concept is updated; the modern information technology is introduced to the teaching of college. Currently, colleges and universities should increase investment, improve the environment of the teaching computer hardware and software, equip teachers with better computer as well as a high level of teaching software to physical education teachers, to provide the necessary foundation to ensure a modern teaching.

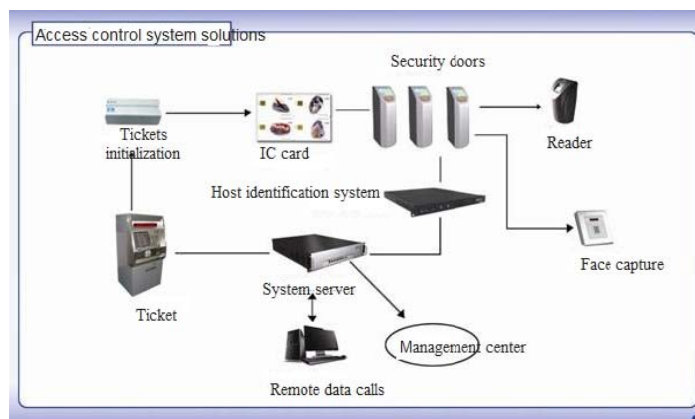


Figure 2 : Access control system solutions

## VALUE MODEL OF APPLICATIONS OF MODERN IT IN SPORT GAMES

Multimedia courseware can take advantage of the design of two-dimensional, three-dimensional space, analysis difficult in the full range<sup>[8]</sup>, complex teaching process has become so aesthetic and vivid, and accelerate the learning speed, improve the learning efficiency. Clear representation of the action is an important foundation for the formation of skills; it comes from the teachers' explanation, demonstration, presentation and teaching process. Some technical action is difficult to describe clearly with words, especially some technical details after vacated, it is very difficult to explain and the effect of the demonstration is not satisfactory. Educational psychology research shows that the most realistic, the most active factor in motivation is raising interest. In the state with interest, the learned often are grasped quickly and securely. In the physical education teaching process<sup>[5]</sup>, using of multimedia courseware, in essence, is to give athlete a new-stimulation, the purpose is to induce athlete' inquiry reflection on the novel stimulus, in other words, is the use of innovative teaching methods means to stimulate athlete interest in learning. The related research shows that the knowledge gained through language to memory is only 15%, while 65% of the knowledge obtained through visual plus auditory is acceptable. In the past teaching of physical education and health, the abstract knowledge is described by language mainly, even with wall charts, models and other intuitive means; it is to be rather dull. Multimedia courseware can easily solve these problems, help athlete understand the action, format the concept, remember the structure and establish a clear action representation in the brain. Analysis and comparison of the modern PE of IT can improve the ability of athlete to analyze and solve problems. Take advantage of modern IT<sup>[2]</sup>, and make use of various technology, technical difficulties, focus, common malfunction to produce courseware, then viewing, analysis and comparison with the athlete, it can improve the athlete' the ability of athlete to analyze and solve problems.

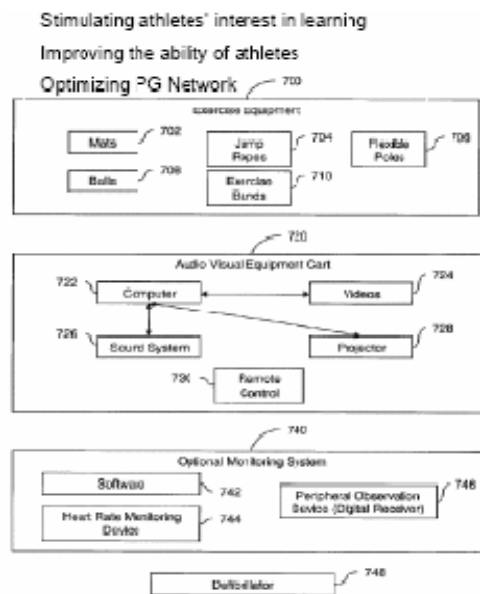


Figure 3 : The value of IT to teaching

College campus network is the most basic level of information networks, it is a regional network, which is characterized by a small communication range, it only belongs to a university and generally within a few kilometers. The establishment of the campus network has added new content to the work of the Information Reference Room<sup>[6]</sup>, it also open a new window for the construction of literature. Using

Campus Network to create teaching web, it can provide good service for teaching, research, training, competitions, groups and others

### CAUSE OF HINDERING THE INTEGRATION OF MODERN IT AND SPORT GAMES CURRICULUM TEACHING

An aircraft data management system provides a passenger seated on the aircraft with a number of entertainment and productivity enhancing options. Such options include, without limitation, video, audio, internet, airplane systems data and power. Located proximate to each seat group is an integrated seat box that includes a network interface card that identifies a requesting passenger for proper directing of the required data and/or power from devices that interface with a network controller back to the requesting passenger. Both on-aircraft and off-aircraft devices may be accessed by the system. While particularly drawn to aircraft, the data management system is also applicable to other venues have identifiable seating locations such as buses, passenger ships, hotels and auditoriums.

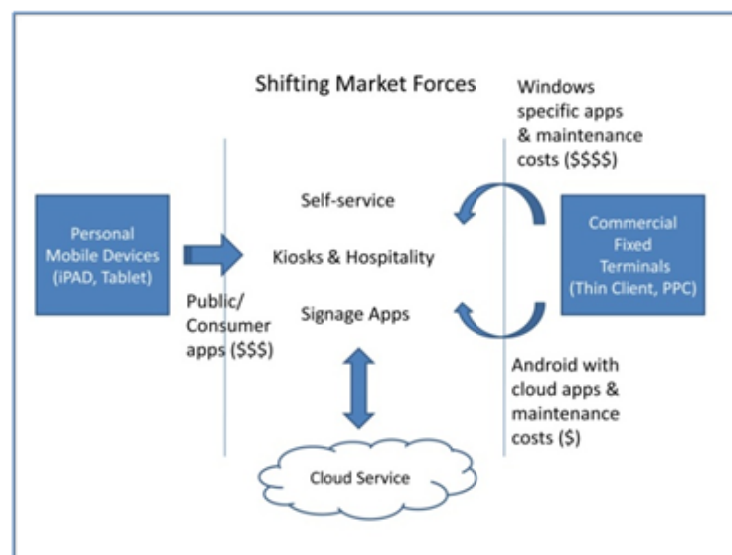


Figure 4 : Analysis the cause of hindering IT in PE

### THE FEASIBLE SUGGESTIONS OF INTEGRATION OF MODERN IT AND PHYSICAL GAMES CURRICULUM

When teachers use modern information technology to teach, there is no focus on the process continuation, supervision, feedback and adjustment of athlete PE ability, a lot of time they are as a temporary use for some projects and information technology, except for using information technology to record, analysis and improve athlete' physical fitness or skills coherently. Avoid copying the mode of others in ignoring the specific circumstances, or repression the experimental and promotion of teachers 'creative teaching'; advocate teachers use common information technology tools to integrate a variety of economic-based curriculum resources through the instructional design, creating learning environment of comprehensive and conducive to arouse athlete' thinking or inquiry. We should further edit modern information scientifically and reasonable. According to the purpose of teaching, different goals, modern different IT textbooks should be designed and courseware to better plays the modern PE IT role in the school teaching process. With the intervention of modern information technology, it put forward higher

requirements to the majority of college teachers, yet only a handful of people can apply these devices. Avoid the wrong practice of trying to "replace teachers or control teaching with IT"<sup>[10]</sup>.

Currently, some of the key institutions have been equipped with modern teaching equipment, which includes computers, databases, networks, communications, microelectronics, image processing, video capture, simulation, and other technical equipment, but most of the faculty are also difficult to master these high-tech teaching tools in a short period of time, and to a certain extent they are not accustomed to or even reject to. It cannot be replaced by any information technology that Physical Education Teaching should give full play to the leading role of teachers. It is an inevitable trend using the modern information technology to assist the completion of the teaching tasks now and in the future, we must increase the teaching software development and train aids software, software development and application of management, focusing on the integration and utilization of information resources, give full play to the network advantage of technology to accelerate the construction and development of physical education. We should use IT teaching of modern in reason. The way of time and spots is an important tool that school teaching process should be used to. Eliminate PE information overall electric Physical Education thus depriving of the athlete opportunity of hands-on<sup>[11]</sup>. Secondly, teacher's innovate ability should be improved. Since the national launching of reform of the education system, it was the strongly concerned by the majority of athlete, but physical education reform failed to receive equal attention that attached to the reform of the education system.

### CONCLUSIONS

Information technology in teaching is a trend in the development of education, and physical education curriculum has its own particularity. Under the guidance of such a long-term negative social awareness, teachers and athlete are very difficult to quickly accept such a new type of educational philosophy and mode in a short period of time. No doubt this ideological twist also needs a process. The application of modern information technology are scattered and are not contacted in most cases, it have not formed a continuum. Many schools, there are only a few people make use of some resources, at the same time it is not very common in the field of electronic teaching, such professional teachers is still relatively small. A high demand of the student innovation capability is in the context of the Physical Education Reform, the indicators of enhancing an essential premise are enhancing the innovation capability of teachers. In the new era, teachers must not only have the ability to preaching Tuition FAQ, but also fully grasp the new tools, new tools and new ways. Applying the optimal combination of information technology tools and traditional teaching methods, using modern application of information technology in the Physical Education, it can stimulate athlete' interest in knowledge and learning skill. Integrate the teaching resources and select teaching methods to involve in the curriculum reform. To this end, taking into account of the teaching temporality and spatial of process, extensive of content, the physical education curriculum is divided into curricular teaching, extra-curricular learning and teaching three sections, and to construct three integrated mode, on this account, to promote further effective integration between information technical and college physical education curriculum. It can also broaden the horizons of knowledge and improve the quality of teaching, promote the development of physical education teaching. Modern information technology is the main symbol of the era of knowledge economy education, IT also play a huge role in the promotion of physical education development. Action research, literature, comparative analysis and other research methods are used to study the application of modern information technology in college teaching, and explore the status and role of information technology in college.

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