



Physical Education and Computer Application

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Abstract

In the digital age, computers are being used to augment and ease all areas of human activities. In the field of physical education and training too, computers have come to be instrumental in all possible areas. The range of applications of computers in physical education is wide- from educational software, activity designing and planning, motion examination, biomechanics video analysis, performance comparing and synchronizing, distance and time measurements and activity evaluation to predictions of best possible outcomes through permutations and combinations of players and their methods. The intersection of Computer science in physical education and training creates an interdisciplinary field that opens a wide area of methods and methodologies with the goal of enhancing the quality of physical development and specialisation. The interdisciplinarity of the field is not limited to computer applications but also extends to mathematical techniques in sports science, biomechanics, health and so on. The aim of the paper is to systematically study the various applications of computers in the field of physical education and training and their effects on the same. Although it is generally agreed upon that the digital-revolutionization of the field is needed, it is important to understand the possible methods of the same. The methods of application of computer technology into physical education and training will shape the future of its trends and development.

Keywords: physical education, computer application, sports science and future prospects.

Introduction:

Technology influences health, physical education, amusement, and dance educators in the areas of research, classroom teaching, and distance education. While the overall effect is not yet fully decidable, the presence of technology in so many different aspects of the profession make it important to more clearly recognize and appreciate its current and probable role. Commercial and free trial programs are available to track grading, student athletic performance, and fitness; conduct health assessments; provide simulations of disease; and monitor research projects, among other functions. The accessible links, where selected words in the text of a document can be used

as links to other points in a document, has made such software development much easier. Information and communication technology represents more than a simple computer to us, because it also forces us to use some measurement and evaluation electronic devices, some audio-visual aids for the subject's and teacher's performance evaluation or even some series allowing us to organize and objectively assess the final results. The quick technological progresses have also been integrated into the physical education lesson to the point that nowadays they seem to threaten the basic education tools. The age of Information and Communication Technology becomes more and more enormous, that is why we, as teachers, need to change the way we teach. ICT helps physical education students to learn by promoting and increasing their work in the chosen directions and this may have positive effects upon their motivation and degree of participation in the activity. At the same time, it helps them to decide on their learning style, which gives them more freedom. So, the traditionally acknowledged physical education lesson will have to adapt to this pattern shift, by keeping to the teaching-learning process development. It is really difficult to conceive the possibility of joining physical education and ICT without losing our discipline essence, as both of them are varying and conflicting interests. The physical education teacher must consider this task as an ideal opportunity to raise physical education learning to a higher platform. This paper aims at emphasizing the positive influences upon physical education and sports. Teaching will get new dynamics, as lessons will be greatly enhanced by the technology tools. The use of multimedia instructional tools will significantly enrich the teaching content that will become more dynamic and extremely interesting. With such facilities, teachers will be able to modify chapters according to their preferences, by using a selected text, sound, animation and video, in order to capture learners' imagination. This is but one of the educator's many exciting investigation tools he uses to reconsider his teaching method. The education shape is changing, that's why physical education will have to adjust with its traditional teaching learning pillars which are deeply rooted into the motor skill development. Traditional physical education lesson since many years, many schools of thinking have tried to define what physical education should presuppose. But besides defining the physical education, it is important for us to study the teaching process, its content and results. By considering the subject's learning, we could get a deeper insight into the lesson content improvement and this would support us to develop and structure more effective programs. Nowadays, the physical education teaching is deprived of the high technologies that are able to enhance teaching, probably except for a few isolated cases. The subjects traditional teaching greatly depends on the use of established forms of sports devices as learning and instruction tools. Presently, the assisted-learning technology traces are revealed by the use of video and some other forms of visual aids. Physical education is not merely concerned with the individuals body aspect. With the subject's and the profession progress, a greater and greater emphasis is put on the improvement of knowledge and attitudes favorable to lifelong learning and lifespan activity. PE and ICT Physical education and ICT are two entities so different that it is difficult to observe them as being highly related or even synonymous within the educational sphere. Recent technology advancements have introduced computers in many people's life and education, as their price has gradually become affordable, their processing power has increased and their size has extremely lessened. These have helped the blending of sports with the information technology sector. The physical educator should use the ICT many advantages: It provides a

wide range of programs assigned to develop the physical education teaching. It provides a direction for a variety of teaching styles. It engages the student on a particular topic. For example, ICT can help pupils to develop and enhance their abilities to think in newer ways, which supports them to select and apply skills, tactics and compositional ideas. But to assess and improve their performance, collect, analyze and understand data, take on many roles and responsibilities related to physical education and sports so that they can have access to a variety of information resources to improve their knowledge of physical education and its connections and applications in other areas of learning and improve their knowledge of anatomy, physiology, sports, health and well-being in the community, physical education related to specific skills and methods related to various activities, access to a wide variety of information resources and to make them more aware of the impact of ICT on our changing world. It is important for us to remember that ICT is not a teaching tool, but a pre-determined content environment that facilitates teaching. That is why we should avoid lessons where pupils merely search for and restore information, with no prior learning outcomes settled by the teacher. There are definitely much more ICT utilizations, but they are bordered by the human being's imagination. Our present challenge is to depict how CD-ROMs, databases, spreadsheets, word processors, data loggers, digital imaging and other emerging technologies can be comprehensively interweaving with physical education. Biotechnological progress of sports services would also have an effect on physical education as the sportsman techniques can be adjusted according to the genetic behaviour of his body.

Tools and Methods

Although it is not possible to fully augment the present tools and methods with computers due to the heavy costs involved, we have ample cheaper alternatives for a step-by-step augmentation to achieve high levels of improvement in wide ranging areas. The following tools and methods should be used in physical education management and teaching methods. In my opinion these tools and methods will surely enhance the teaching quality of physical education and sports students will get better and healthy results in the playground:

- **Internet** - a worldwide interconnected network of computers which is used to communicate and share data and ideas across the world.
- **Smartwatches** - a strap fits around the wrist and contains a radio to transmit the heartbeat, pulse rate, oxygen level of one's body to the monitor in the wristwatch.
- **Digital camera** - the camera which does not require any film reel and produces digitally accurate photographs depending upon the megapixels in its lens. This type of camera can be used to get frame by frame record of the athlete and improve his/her running speed.
- **Generic software** - these include the software used to process documents and datasheets and the analyst can use the data analysis of athletes and improve his statistics.

- **Video capture** - Video camera equipped with slow motion recording feature can be used to know the errors in a sportsperson and train him better for the sport.
- **Data handling** - information regarding the stats of different players can be compared and improved using the known values.
- **Desktop publishing** - a blend of audio, video and graphics to produce a report on the athlete and its stats on a graphical representation.
- **Presentation software** - Microsoft PowerPoint can be used to present the data in an animated way in a slide show form to highlight the main points of the athlete's performance.

While in action, the players or athletes can't analyse their own techniques. For this they require constant monitoring by a coach. The aids that capture the movements and performance of players in real time help them self-evaluate their skills and shortcomings. At the same time, these aids help them improve their instincts and enhance their techniques on their own. These also help them visualise the minutiae of their movements which is not possible for a human coach. However, these aids are not the substitute of the classical aids and methodologies but simply to substitute them in order to minimise input and maximise effectiveness.

Computers and contemporary research

In this section, we shall briefly discuss the various applications of computers programmes which can possibly enhance the current methodologies of computer systems.

- Software application in the field of exercise physiology exercise physiology research computer helps to monitor minute by minute changes in lactic acid levels in muscular tissue.
- To determine blood pressure, heart rate, pulse rate, analog to digital converter is used by installing it in the computer. Multiple measurements can be entered simultaneously from the contents.
- To calculate the various metrics of fitness such as body fat percentage, maximum oxygen consumption, the percentage of the relevant gases and to read the volume meters for flow rates and so on.
- The fitness professional can write fitness programs with commercially available software that will help you get the job done quickly. Once the software program is installed on the system, the physical stability test results of the content can be recorded in the system and compared with the program. Appropriate exercise is then determined according to the person's outcome.
- Body composition software programmes designed for use in health enhancement programmers offered through medical clinics can be used by coaches and fitness trainers to prepare specialised training programmes aimed at individuals based on their biophysical needs.

Conclusion

At last, it is to be said that computers have become a fundamental part of the entire physical education and sports environment, other than the area of broadcasting and televising sports events. The application of computers in areas such as research, motor practice, exercise physiology, fitness prescription, body composition, biomechanics, sports psychology can help make coaching more interesting and level, along with teaching physical education teachers and sports coaches also increases sports performance among their athletes. Computer application in sports produces perfection in results and also saves time. There is no chance of faulty results of sports events as it bears fair and accurate judgment. So, for those who are connected to the field, there is a need to learn and become familiar with computers and their applications.

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