

## Information Communication Technology and Physical Education

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### Abstract

India is an over populated country full of sports talent but due to lack of connectivity and proper information India is lagging behind at International medal tally. Information Technology (IT) has a very important role to play as far as bringing transparency and accountability in the system is concerned. The resource sharing facility which the national sports performance and knowledge network is creating by providing connectivity will make a huge difference. So, the technology is the only thing which will provide connectivity to the remotest of the area. Where there is a dire need of spreading awareness, regarding sports culture, health, fitness, sports training, and knowledge through physical education. The goal of this paper is to outline how information technology can help to create an education system that is based on the principles of helping physical education teachers and students to be effective in what they do, improving the quality and relevance of teaching learning process. India is enjoying with flood of technology and has making great strides in improving the education system It will definitely improve knowledge of physical teachers, students and the administration too.

**KEYWORDS** : Information Technology, Knowledge Network, audio-visual aids, training, performance, physical education

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### INTRODUCTION

Physical Education is undoubtedly one of the most important factors that impact the growth and development of a country as well as the future course of the country's people as a whole because apart from maintaining physical fitness, it includes training in the development and care of the human body. It helps a person sharpen overall cognitive abilities and motor skills through athletics, exercise and various other physical activities. Seeing its benefits for the body and its effect on life, the importance of physical education cannot be ignored. The pace of change brought about by new technologies has had a significant effect on the way people live, work, and play worldwide. New and emerging technologies challenge the traditional process of teaching and learning, and the way education is managed. Information technology, while an important area of study in its own right, is having a major impact across all curriculum areas. Easy worldwide communication provides instant access to a vast array of data, challenging assimilation and assessment skills. Rapid communication, plus increased access to ICT in the home, at work, and in educational establishments, could mean that learning becomes a truly lifelong activity, an activity in which the pace of technological change forces constant evaluation of the learning process. Way back in 1995 the computers looked very old fashioned. These big giant were merely used for doing processing work and nothing more. But in the present scenario the computers are equipped with latest technology with very high processing speed. There has been a massive improvement in terms of technology if you examine and compare the computers of 1995 with the present computers. The same holds good for the mobile phone. Way back in 1995 mobiles were expensive, bulky, high running cost, and with very few features. Now if you see the present day mobile they are as good as small

computers, again a dramatic and drastic change of technology but for the betterment. Well so far so good. During 90's the teachers use to explain a topic via black boards. Students on the other hand could hardly find any extra reference or material on that very topic easily. Teachers and text books were considered to be the source of knowledge. Even the teachers used to stick to the contents of text books which was infrequently updated and contains many errors. Many other problems also need to be addressed but even in the present scenario most of the schools are not much has changed. Use of black board, contents of text books which are too old to needs updating are still going on. Teachers are referring to the same text books are the only source of information and knowledge available to most of the students as well as teachers. So we see that almost nothing has changed ever since. So when a computer technology can change and when a mobile technology can change why can not the educational technology?

### **Method**

Keeping in view the nature of the study, the literature was collected from the secondary sources including magazines and websites related with ICT.

### **Analysis**

The collected information has been critically examined, discussed and presented here to provide information on the options available and importance of ICT in physical education.

### **Results**

When computers are brought into an educational setting just because they are there, the entire pedagogical setting of the classroom was changed. This is known as the "Everest Effect", which leads to more "technology-driven" teaching. The learning environment is always a complex system where the interplay and interactions of many things impact the outcome of learning." Consequently the world of education especially physical education is also changing as the modern world continues to grow. With so much progress happening, it's important that scientific way of knowledge, training must be able to reach to each physical education students and sportspersons in new ways so that their students are get prepared for the future. The students of today are the elite sportspersons, leaders, inventors, teachers, of tomorrow. Without the proper skills, these people will not have the preparation needed to survive. Information and communications technology is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communication and the integration of telecommunication i.e. communication lines and wireless signals, computers as well as necessary enterprise software middleware storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information..

ICT is a tool, a way for fact-based learning and allows students to do a lot of the research using the internet and various other tools and at the same time these students are learning very valuable research skills which they can be transplant at high levels of education, at classroom, play field, universities and beyond. It can be used to enhance critical thinking on various aspects of sports trainings, infrastructure, equipment and critical literacy skills, evaluating the legitimacy and accuracy of online content is the central part of physical education. That can be used effectively in the coaching centres, play fields, a classroom that help slow learners to catch up fast, to occupy quick learners and allows everyone to review the matter and especially assessment in broader and deeper ways. Consequently it has greater impact on coaching, teaching and learning that rapidly and profoundly altering brains and improving sports performance. Since the aim

of physical education is the optimum development of the physically, socially and mentally integrated and adjusted individual through guided instruction and participation in selected total-body sports, rhythmic and gymnastic activities conducted according to social and hygienic standards and develop the motor skills necessary to participate successfully in a variety of physical activities so present status will throw light on the advantages of ICT and availability of the tools in physical education. From the convincing point of view some benefits of using information technology in physical education are:

- It induces scientific, economic, technological, information and multicultural literacy and global awareness.
- It promotes inventive thinking.
- It develops effective communication which leads to teaming, collaboration and interpersonal skills. Moreover, it induces personal, social and civic responsibility.
- It leads to high productivity which given the ability to plan and manage results. It also gives a sense of using real-world tools with effective, relevant, and high quality results. Now suppose a decision is taken to use technology in the field of education shifting the focus from traditional teaching to educational technology then a question still needs to be answered? How and where do we fit in? For this to answer, here is dire need to explore the various ways of clubbing and implementing information technology in education in general and physical education in specific.

**Globalization has increased:** With improvements in information technology, globalization has increased. The world is brought closer, and the world's economy is quickly becoming a single interdependent system. Information can be shared quickly and easily from all over the globe, and barriers of linguistic and geographic boundaries can be torn down as people share ideas and information with each other.

**Communication has become an easier, cheaper, and faster system:** Using the internet, physical educationists can speak to each other all over the world using video conferencing. Skype is one helpful application that allows users to communicate to other Skype users for free. You can also pay a small fee to call regular lines.

**Social Medias:** Social Medias like Facebook allows people to share ideas. Digital media can be kind of medium at the push of a button which can give students a voice when they wouldn't otherwise have been heard, and at the same time as I mentioned before about critical thinking I feel that students also need to be told about how to deal with criticism, how to give criticism and how to deal with a host of other issues concerning self-esteem with online content.

**Visual learning:** Many of the videos on Youtube are about just that. Although some of these videos cover other ideas, technology still seems to be the central focus.

**Access to variety of learning resources:** ICT aids plenty of resources to enhance the teaching skills and learning ability. With the help of ICT now it is easy to provide audio-visual education. The learning resources are being widens and widen. Now with this vivid and vast technique as part of the ICT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work.

**Immediacy to information:** ICT has provided immediacy to education. Now in the age of computers and web networks the pace of imparting knowledge is very fast and one can be educated anywhere at any time. New ICT has often been introduced into well-established patterns of working and living without radically altering them. For example,

the traditional office, with secretaries working at keyboards and notes being written on paper and manually exchanged, has remained remarkably stable, even if personal computers have replaced typewriters.

**Easy-to-access course materials and various training methods:** Now in the age of computers and web networks the pace of imparting knowledge is very fast and one can be educated. One can study whenever he wills irrespective of whether it is day or night and irrespective of being in India or in US because of the boom in ICT. Course material and training methods on a website allows learners to study at a time and location they prefer and to obtain the study material very quickly.

**Collaborative learning:** Now ICT has made it easy to study as well as teach in groups or in clusters. With online we can be unite together to do the desired task. Efficient postal systems, the telephone (fixed and mobile), and various recording and playback systems based on computer technology all have a part to play in educational broadcasting in the new millennium. The Internet and its Web sites are now familiar too many children in developed countries and among educational elites elsewhere, but it remains of little significance to very many more, who lack the most basic means for subsistence.

**Multimedia approach to education:** Audio-Visual Education, planning, preparation, and use of devices and materials that involve sight, sound, or both, for educational purposes. Among the devices used are still and motion pictures, filmstrips, television, transparencies, audiotapes, records, teaching machines, computers, and videodiscs. The growth of audio-visual education has reflected developments in both technology and learning theory.

**Authentic and up to date information :** The information and data which are available on the net is purely correct and up to date. Internet, a collection of computer networks that operate to common standards and enable the computers and the programs they run to communicate directly provides true and correct information.

**Online library:** Internets support thousands of different kinds of operational and experimental services one of which is online library. We can get plenty of data on this online library.

**Distance learning:** Distance Learning, method of learning at a distance rather than in a classroom or playfield. At the same time, it appeals to students who prefer learning at home. In addition, it appeals to organizers of professional and business education, providing an incentive to rethink the most effective way of communicating vital information.

**Student motivation:** It is the fact that who studies the effectiveness of computers used for instruction, students usually learn more in less time when receiving computer-based instruction and they like classes more and develop more positive attitudes toward computers in computer-based classes. Teachers must be aware of their students' motivators in order to successfully implement technology into the classroom. Students are more motivated to learn when they are interested in the subject matter, which can be enhanced by using technologies in the classroom and targeting the need for screens and digital material that they have been stimulated by outside of the classroom.

**Wide participation :** Learning material can be used for long distance learning and are accessible to a wider audience.

Using computers or other forms of technology can give students practice on core content and skills while the teacher can work with others, conduct assessments, or perform other tasks. The Internet itself has unlocked a world of opportunity for students. Information and ideas that were previously out of reach are a click away.

Sportspersons physical educationist and students of all ages can connect, share, and learn on a global scale.

### **TECHNOLOGY USED IN THE FIELD OF PHYSICAL EDUCATION**

ICT has brought innovations to teaching learning process. The quality of education and coaching skills in sports can easily be improved with the help of latest technological devices. Teachers can improve their knowledge about recent developments which help them to become critically aware of the new opportunities for increasing accessibility to physical education and maintaining the quality of education. It also helps the teachers in classification of students, preparing of time-tables, preparing and maintaining of progress records and provides useful feedback. Technology in the form of teaching aids helps the teacher to make their teaching more interesting and also improves the teacher-taught relationship and helps to save time and energy as well as make the subject matter more interesting. In simple words we can say that due to technology the modern teachers have come a long way from those old days when “chalk and talk” were the only means of teaching available to them. Modern technology has placed different types of instructional aides at their disposal. Apart from text books, magazines, models, charts, pictures, drawings etc. there are many latest and modern amenities which help the teachers in making teaching more effective. While on the other hand in sports field, technology helps physical educationists, coaches, trainers to enhance performance level by employing innovative techniques, hence as a result new records are made in the field of physical education and sports. Some of the commonly used devices are as follows:

**Telemetric:** Telemetric typically is any integrated use of telecommunications and informatics, also known as ICT (Information and Communications Technology). Telemetric is originally coined to mean the convergence of Telecommunication and information processing, the term later evolved to refer automation in automobiles. This includes dial up services to the internet as well as all type of networks that rely on a telecommunication system to transport data.

**Multimedia:** The term multimedia describes a number of diverse technologies that allow audio and visual media to be combined together in new ways for the purpose of communication. It is used exclusively to describe multiple forms of media or it is media which only utilizes a combination of different content forms. The term is used in contrast to media which only utilizes traditional forms of printed or hand written text and still graphics. Basically multimedia includes a combination of text, audio, still images, animation, video and interactivity content forms. The presentations through multimedia can be live or recorded. It may be divided into two categories.

**Linear:** Linear active content progresses without any navigation control for viewer such as a cinema presentation. **Non-Linear:** Non Linear content offers user interactivity to control progress as used with a computer game or used in self paced computer game or used in self paced computer based training.

Nearly every P.C (Personal Computer) built today is capable of multimedia because they include CD-ROM or CD Drive and video card etc.

**Television:** Television is one of the best means of mass communication. It brings us sounds and sights simultaneously. It combines photo and voice. The picture can also be seen while hearing. It is also known as “electronic blackboard of the future”.

**Overhead Projector:** An overhead projector is a variant of slide projector that is used to display images to an audience. The overhead projector facilitates an easy low-cost interactive environment for educators. Teaching materials can be pre-printed on plastic sheets, upon which the educator can directly write using a non-permanent, washable color marking pen. This saves time, since the transparency can be pre-printed and used repetitively, rather than having materials written manually before each class. The

overhead is typically placed at a comfortable writing height for the educator and allows the educator to face the class, facilitating better communication between the students and teacher. The enlarging features of the projector allow the educator to write in a comfortable small script in a natural writing position rather than writing in an overly large script on a blackboard and having to constantly hold his arm out in midair to write on the blackboard.

**Video Projector:** A video projector is an image projector that receives a video signal and projects the corresponding image on a projection screen using a lens system. All video projectors use a very bright light to project Multimedia: the image, and most modern ones can correct any curves, blurriness, and other inconsistencies through manual settings. Video projectors are widely used for many applications such as, conference room presentations, classroom training, home theatre and concerts. Projectors are widely used in many schools and other educational settings, sometimes connected to an interactive whiteboard to interactively teach pupils.

**Interactive Whiteboard:** An interactive whiteboard is an instructional tool that allows computer images to be displayed onto a board using a digital projector. The instructor can then manipulate the elements on the board by using his finger as a mouse, directly on the screen. Items can be dragged, clicked and copied and the lecturer can handwrite notes, which can be transformed into text and saved.

They are a powerful tool in the classroom adding interactivity and collaboration, allowing the integration of media content into the lecture and supporting collaborative learning. Used innovatively they create a wide range of learning opportunities. However, in many environments they are not being used to their full potential, and in many cases acting as glorified blackboards. In sport studies, you can video tape a sporting event, then the coach can pause the video at a certain point and demonstrate by drawing on the board what the players should have done.

**Virtual classroom :** A Virtual Learning Environment (VLE), also known as a learning platform, simulates a virtual classroom or meetings by simultaneously mixing several communication technologies. For example, web conferencing software such as GoToTraining, WebEx Training or Adobe Connect enables students and instructors to communicate with each other via webcam, microphone, and real-time chatting in a group setting. Participants can raise hands, answer polls or take tests. Students are able to whiteboard and screencast when given rights by the instructor, who sets permission levels for text notes, microphone rights and mouse control. A virtual classroom also provides the opportunity for students to receive direct instruction from a qualified teacher in an interactive environment. Learners can have direct and immediate access to their instructor for instant feedback and direction. The virtual classroom also provides a structured schedule of classes, which can be helpful for students who may find the freedom of asynchronous learning to be overwhelming. In addition, the virtual classroom provides a social learning environment that replicates the traditional "brick and mortar" classroom. Most virtual classroom applications provide a recording feature. Each class is recorded and stored on a server, which allows for instant playback of any class over the course of the school year. This can be extremely useful for students to review material and concepts for an upcoming exam. This also provides students with the opportunity to watch any class that they may have missed, so that they do not fall behind. It also gives parents and auditors the conceptual ability to monitor any classroom to ensure that they are satisfied with the education the learner is receiving.

**Computers, tablets and mobile devices:** Computers and tablets enable learners and educators to access websites as well as programs such as Microsoft Word, PowerPoint, PDF files, and images.

## Conclusion

With rapid developments in ICT, most university students demand more use of ICT in their education may be for two main reasons, one it helps the course material be presented in a more comprehensible way; second it gives them familiarity with the high-tech tools they might be expected to use in their future careers after education is completed. National Council of Teacher Education has already given instructions to colleges to started making necessary changes to their curricula and making arrangements to be more inviting to students by introducing new methods of education such as field trips to big companies, and inviting representatives from such companies to give seminars as part of the curricula so that the students are exposed to practical career scenarios.

It is not too far in the future that classrooms will be equipped with smart touch panels or screens, projectors, sound systems, tele or video-conference systems, television and radio broadcast or receive systems and other high-tech equipments. Such developments in physical education also come with some overhead to utilize such classroom environments require training of faculty and students in order for them to use these tools efficiently and also it is important to have the ability to manage them. The future of India will be fashioned in the classroom. While India has made great strides in improving the education system but much still remains to be done. If you see the current scenario then you will find that there is a flood of advanced technology all over the globe and our educational system is also improving the information communication and knowledge of teachers, students and the administration.

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