

# New Trends in Technology & its Integration within Physical Education

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**Abstract:- Physical education is that field of education which helps in the development of an individual's personality through different aspects of life. Although this paper comprises of a different aspect of physical education i.e, the application of technology in physical education itself. Physical education is that area within the field of education where technology can play an important role. Whether technology is integrated into physical education probably depends on the individual, institution, organization, school or teacher education program. This paper addresses the use of technology in physical education for both teacher as well as student. Here both computer and other electronic devices are taken into consideration. This paper will primarily be informative where current uses of technology and some possibilities are discussed. Current uses of technology in physical education include using computers for word processing and data management, assessment, attendance and teaching, performance and motor skill development computer and video-assisted instructions, and telecommunications and many more.**

**Keywords:-** Utilities, Assessment, Computer Assisted Instructions, Positive Impacts.

## I. INTRODUCTION

Life without technology is like living in darkness. Technology has such an impact on our day today lives that it is quite impossible to imagine life without technology. Cell phones, computers, iPods, and the Internet are only a few technological tools used daily by children and adults all over the world. However, research shows that 91% of students in India access the internet for collecting information about colleges, universities, courses with placements, study material and other educational content. As a result of the integration of technology in the daily lives of students, it has become a concerning matter for the teachers to be prepared to teach with technology. It is exciting and stimulating for teachers and students to use technology resources in physical education and sports. However, it is all up to the teachers regarding how they will manage and provide instruction to students when using technology resources within physical education lessons.

Currently, the innovations of computerized gadgets and digital apparatus in physical education are noticed all around the globe. One such gadget prevalent within students as well as general masses is Pedometer. It counts the steps taken by students each day and motivate them to adopt a more physically active lifestyle (Lubans, Morgan, & Tudor-Locke, 2009). Heart rate monitors on the other hand provide teachers with vital information on the level of activity output of their students in order to efficiently design systematic instruction catering the needs of particular students (Kirkpatrick & Birnbaum, 1997; Ratey, 2008).

Digital video is used to help teachers observe, assess, and provide specific feedback to children regarding kinesthetic perception in order to support motor skill development (Fiorentino, 2004; Lim, Pellett, & Pellett, 2009). Also there are various mobile apps like MyFitness Pal, Map-MyFitness etc. which help in formulating the training schedule and daily diet of students as well as the individuals engaged in physical activities considering in mind the individual differences. Google earth is another such example of the innovations used in physical education which provides the satellite imagery of the particular area being used either for educational camping or mountaineering and trekking. The advancement in use of technology in physical education has moved beyond counting steps and calculating calories since more advanced equipments have been in use for analyzing and improving athletic performance. These devices include accelerometer, gyroscope and blast motion's sensor etc. Above all, the use of computer and internet have made the education system especially physical education more scientific and lively as using technology in physical education has proved to be an ergogenic aid for both teacher and student.

### Latest Uses of Technology in Teaching Physical Education

There is a diversity in the uses of technology in physical education. They can be categorized as;

- using technology in the form of computers
- using technology in the form of other electronic devices.

In some cases, computers and other devices are used together (e.g. computer- assisted instructions). In order to make the paper more simpler and understandable, we have first discussed the utilities of computers followed by the application of other electronic devices.

➤ Utilities of computers in instruction and learning:

Computers make it easier for the physical education teacher to pass on any kind of instruction to the students regarding the daily or weekly training schedule or assignments. It is only through computers that students can use Power point slides, word documents or web pages for better concept clarity and for making different practical and theoretical assignments.

Online encyclopedias, E-books and online libraries help in minutes to guide the students and save precious time and resources. It gives them the pleasure to save the document as soft copy for future use. Computers are also the means of simulated learning for them which provides them an idea of the real situation.

➤ Utilities for testing, evaluation process and assessment:

Testing and evaluation is one of the important aspects in physical education, and technology (computers) has a great role to play in it by;

- (a) Keeping the practical and theoretical records of the students for their academic scores
- (b) Keeping monthly/annual record of the performance of the students/athletes for further selection
- (c) Helping to conduct various physical fitness tests, motor ability tests and skill tests.
- (d) Keeping records of the personal history of the students/athletes, and
- (e) Analysis and interpretation of data

➤ Application of computers in research:

- (a) For literature searching.
- (b) For test administration.
- (c) For data analysis.
- (d) For result analysis and general assist

There are various other important electronic devices or computer assisted devices which are helpful in recording the performances of the students/athletes, conducting various physical and physiological tests and acting as audio-visual aids etc. It is difficult to explain all of them in a single paper however; a few are discussed under the following headings:

➤ *Pedometers*

Whenever we discuss technology in relation to physical activity, the first example that come to our mind is apparently, Pedometers. One among the simplest ways to determine physical activity is to measure the steps and pedometers can be used by almost all age groups who can record their physical activity at their own. Pedometers are worn on the belt or tied around wrist and by detecting the motion of the person's hands or hips, it can record how many steps the wearer has walked that day. GPS receiver is used directly to measure the distance travelled (by walking, running or any other means).

➤ *Heart Rate Monitors*

The heart rate monitor has two working parts - a transmitter attached to a belt which is tied around the chest, and receivers worn on the wrist like a watch. Basic heart rate monitors may only show the heart rate at a particular time. However, much advanced monitors not only show the heart rate, but can be set to record time, calculate average and utmost heart rate for an exercise period, and can sound an alarm or bell when a runner reaches or surpasses a pre-established target heart-rate zone.

While the students are engaged in physical activities, heart rate monitors measure their pulse rate. These devices therefore, allow physical educators trainers and students to aim for an individualized target heart rate that might be hard to maintain but by no means tough to achieve. By modifying goals of students, they feel more involved and more enthused to continue with fitness.

➤ *Mobile Apps*

As a result of the outburst in mobile technology, physical educators have a wealth of tools. Such as My-Fitness-Pal and Map-My-Fitness allow for movement tracking as well as nutritional help. These apps help in formulating the particular diet and training plan for different age groups. Another mobile app called Google Earth is used to show students distances and challenge them to walk those distances, for example, during camping, mountaineering and trekking Google earth can be used to have a satellite imagery of the area for better geographical knowledge.

➤ *Apps working with devices*

There are some applications which help in improving athletic activities For example, Blast motion's sensors can be worn by players or attached to Go-Pro cameras to calculate jump height, hang time (the time for which an athlete stays in flight or air) and acceleration for fitness training and action sports. Linked to smart-phone apps via low energy bluetooth, the sensors provide feedback in real time. If out of bluetooth range, they store data for later. Blast Motion's smart video capturing technology, e.g, highlights of a vide session are created automatically, which users can watch later for improving their own skill or share through social media.

➤ *Video analysis*

Video analysis is mostly used for biomechanical and sports science purposes. However it has now being used by different coaches to improve the performance of their players and teams. Slow motion videos are helpful in detecting the possible causes of any injury and their management. Video analysis involves the use of slow motion cameras and apps which slow down the speed of the match. It helps in examining the opposition as well as the strengths and weaknesses of the opponent players. It highlights the possible tactics, strategies and techniques of the opposition.

Besides, it also highlights one's own errors and mistakes so that one can analyze one's own performance.

## II. CONCLUSION

At the end it has to be said the technology has put its impacts and that too positive impacts on physical education and sports. Application of computers in the field of research, assessment, testing and evaluation, instructions and learning process, and other sports related scientific devices help the physical education trainers and teachers to make the coaching as well as teaching more interesting and also enhance the level of performance in sports and physical education. Computer application in physical education helps to produce accurate and desired results and saves time as well. Therefore, there is a need to become familiar with computers and the latest technology, whosoever is connected with physical education and sports.

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