EFFECTIVE TEACHING AND LEARNING OF PHYSICAL EDUCATION THROUGH ICT

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ABSTRACT

Information and communication technologies (ICTs)—which include radio and television, as well as newer digital technologies such as computers and the Internet—have been touted as potentially powerful enabling tools for educational change and reform. When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by, among others, helping make teaching and learning into an engaging, active process connected to real life.However, the experience of introducing different ICTs in the classroom and other educational settings all over the world over the past several decades suggests that the full realization of the potential educational benefits of ICTs is not automatic. The effective integration of ICTs into the educational system is a complex, multifaceted process that involves not just technology—indeed, given enough initial capital, getting the technology is the easiest part!—but also curriculum and pedagogy, institutional readiness, teacher competencies, and long-term financing, among others.

Key Words: Information, Communication, Technology and Educational Quality.

INTRODUCTION:

"Learning to learn," i.e., the acquisition of knowledge and skills that make possible continuous learning over the lifetime. "The illiterate of the 21st century," according to futurist Alvin Toffler, "will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."

The International Labour Organization defines the requirements for education and training in the new global economy simply as "Basic Education for All", "Core Work Skills for All" and "Lifelong Learning for All".

The term, information and communication technologies (ICT) refers to forms of technologies that are used to create, store, share or transmit, exchange information. This broad definition of ICT includes such technologies as: radio, television, video, DVD, telephone (both fixed line and mobile

phones), satellite systems, computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing and electronic mail. (UNESCO 2002).

This primer is intended to help policymakers in developing countries define a framework for the appropriate and effective use of ICTs in their educational systems by first providing a brief overview of the potential benefits of ICT use in education and the ways by which different ICTs have been used in education thus far. Second, it addresses the four broad issues in the use of ICTs in education—effectiveness, cost, equity, and sustainability. The primer concludes with a discussion of five key challenges that policymakers in developing countries must reckon with when making decisions about the integration of ICTs in education, namely, educational policy and planning, infrastructure, capacity building, language and content, and financing.

➢ ICTs help expand access to education-

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

• Anytime, anywhere. One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

• Access to remote learning resources. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning

materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons—mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

The ICT brings more rich material in the classrooms and libraries for the teachers and students. It has provided opportunity for the learner to use maximum senses to get the information. It has broken the monotony and provided variety in the teaching – learning situation. The ICT being latest, it can be used both at school and higher education levels in the following areas:

- Teaching
- Diagnostic Testing
- Remedial Teaching
- Evaluation
- Psychological Testing
- Development of Virtual Laboratory
- Online Tutoring
- Development of Reasoning & Thinking
- Instructional Material Development

➢ ICT to improve student learning-

ICT should be utilized selectively within the learning context and should focus upon improving students' understanding and enthusiasm. The prime goal must reside with effective teaching and learning with ICT contributing to such a dynamic process. It is important to remember that ICT is not a tool for learning but a medium for delivering pre-determined content. Lessons must be avoided where students simply search for and retrieve information with no prior learning outcomes being set by the teacher.

ICT allows the teacher to reconsider teaching and learning and frees the teaching from the constraints of the classroom and traditional teaching strategies. ICT is appealing to students and must surely be the preferred learning mode, given that the computer is often viewed as the 'child's

machine'. If learning materials are designed around technologies, the student should be motivated by such opportunities.

The integration of ICT should promote and enhance learning by:

• Accessibility – bringing the world to the classroom.

• Involvement with technologies distinct from conventional methods.

• Accommodating the various paces of learning.

• Encouraging students to access and evaluate information from various sources.

ICT offers a range of tools so that pupils can analyse, evaluate, and compare performance. This includes:

• using performance analysis software and hardware

• using ICT to record and analyse performance

• using ICT to track participation, involvement and improvement in physical activity

• access, select and interpret information

• recognise patterns, relationships and behaviours

• model, predict and hypothesise

• test reliability and accuracy

• review and modify their work to improve the quality

• communicate with others and present information

• evaluate their work

• improve efficiency

• be creative and take risks

• gain confidence and independence.

➢ Technologies in Physical Education-

ICT incorporates a vast array of hardware and software. The following technologies should be considered for use within PE for planning, administrative and teaching purposes:

• Internet – A global network providing the capability to communicate, share ideas and access information and resources from around the globe.

• Intranet – Similar to the Internet, but information from within a school or organisation.

• CD-ROM – Information is presented in the form of graphics and text with sound and moving video.

• Wristwatch/heart rate monitors – Usually a strap fits around the chest and contains a radio to transmit the heartbeat to the monitor in the wristwatch.

• Digital camera – The pictures taken are stored in computer memory rather than on film as in an ordinary camera. They can be displayed directly onto the computer monitor or imported into a graphics/art package for editing.

• Generic software – The most common forms are word processors and spreadsheets.

• Video capture – A video camera which can be connected to the computer. Video sequences or still images can be stored on disk and edited.

• Data handling – Information can be stored in a database.

• Desktop publishing – A combination of text, graphics and layout to produce a document.

• Presentation software – For example, Microsoft® PowerPoint – software displaying information in slide form.

ROLE OF ICT-

  Information and communication technology has a role in the learning and teaching process as a teaching tool. The use of ICT by learners offers enormous potential to enhance learning in all subjects, as well as for physical education & sports. Developing an ICT culture is an important part of the process of integrating ICT into a school's learning and teaching programs. ICT involves both teachers and students in the learning and facilitation process.

- Teachers: ICT is an aid in the teaching process: evaluation, administrative help, source, special education.
- Students: to acquire information in an independent manner, communication & interaction between: students - students and students - outside world. Self-

Directed learning, develops students' IT and ICT abilities and it motivates

students for greater learning and promotes independent thought.

Key concepts that can be applied and developed in PE

•   Using data and information sources

•   Models and modelling

•   Control and monitoring

•   Refining and presenting information

practical use of internet as a tool in the learning process of physical education

The use of technology in the learning process of physical education may not be a goal of it's own,

but it is a tool with which to reach objectives.

A) Intergradations of ICT into learning and teaching PE:

1.   Administration: to produce documents/ lesson plans, to convert scores (Excel, Word,

etc...).

2.   Management: this involves everything from discipline to class organization and time

management

3.   Feedback: video, P.C., heart rate monitor.

4.   remedy: heart rate monitor, educational software.

5.   Evaluation: video, use the digital camcorder to analyze students in action.

6.   Professional development: lifelong learning/ continuing education, sharing experiences.

7.   Public relations: communication via internet with the outside world.

Internet is a computer mediated communication (CMC).

For the purposes of this article, I'll define CMC as the process of interactivity through the direct use

of computers and communication networks. It is a 'two-way communication' and critical

conversation' in the active learning process.

B) Effectiveness and efficiency in the learning process of physical education through ICT.

1. e-mail:

a) Educational applications for students: students have the possibility to email their questions or comments concerning: health, nutrition, fitness, physical education program, courses etc. to the p.e. teacher/ academic staff.

- To communicate with the outside world: find international pen pals for pupils to email about sport & physical education.

b) Applications for p.e. teachers/ faculty members:

- Curriculum Development in Physical Education.

- to take contact with experts/ organizations

- to involve parents and students by p.e. school activities

- to co-operate with colleagues world-wide

- to assist students in their learning process

2.   Mailing list archives: Older articles can be found in the mailing list archive.

3.   Newsgroups: newsgroups related to physical education & sport.

4.   Chat-Interactive chats improve communication with customers and community members. Chat allows groups of people to simultaneously communicate publicly or privately on your Web site, intranet, and extranet. Team members from different locations can easily conduct online meetings with managers, suppliers, and buyers. Customers can gather in intimate groups to discuss issues related to your business or gather together in large Online Events to interact with experts and celebrities. Instructors, teachers, students can access chat groups on an academic subject.

5.   Videoconferencing- Video conferencing technology allows two or more people at different locations to see and hear each other at the same time. This rich communications technology offers new possibilities for schools, colleges, and libraries including formal instruction (courses, lessons, and tutoring), connection with guest speakers and experts, multi-school project collaboration, professional activities such as meetings and interviews, and community events.

6.   Recording and analysis of performance data.

7.   Modelling performance using images. digital images present models for children to copy and can provide precise feedback.

8.   Using ICT monitoring to collect and record real-time data.

9. ICT can support teachers: to improve lesson design --- to transform teaching & learning----to engage and motivate pupils more effectively.

10. The Video Based Learning In Physical Education.

a. 65% of all learning in PE is through visualization

b. Most technology used in PE slowed down the pace of lessons

c. Many teachers have a limited vision of what is possible with the latest software

✓ Impact as whole

1.   Centralise ICT within PE to increase learning for all.

2.   The aim is to spark enthusiasm, change practise, raise standards and improve learning.

3.   Founded upon the notion that Physical Education is a visual and practical subject

4.   Not just for the minority of children, aiming to impact at all levels of Physical education, including those with low motivation and low levels of achievement

5.   Looking to engage children through actual subject content changes

6.   New vision, Change the vision of what is possible

7.   Very much focused on relating to learning objectives and child cantered learning.

8.   Let them to the analysis of their own performances.

✓ Challenges for PE.

1.   Maximise the use of ICT in PE based work

2.   Develop the skills needed by PE teachers to use Digital Image feedback effectively.

3.   Be clear about the impact of digital Image feedback on learners in PE.

4.   Be clear about the benefits of the use of Reference Images to support learning in physical education.

5.   Teaching strategies can be varied when integrating ICT and consideration should be given to.

6.   Group work.

Other issues to be considered when attempting to integrate ICT in teaching include:

• The confidence levels of students in using ICT.

• Classroom management.

• The importance of focusing on the learning process not the tool.

• Diversity of the student group must be accounted for in planning.

✓ Managing Resources

•   Organising the teaching space

•   Clip management

•   Reference/Teaching clips

✓ Impact on Teachers

•   Clip selection at lesson planning stage

•   Highly efficient video clip management

•   Clarified expectations

•   Highly motivated pupils, = increased pace of learning/mastery

•   Potential to share video content on line

•   Improved subject knowledge

✓ Impact on Pupils' Learning

•   More precise feed back

•   Learning = more focused

•   Better understanding of technical skills

•   Better motivation (all ability groups)

•   Improved understanding from evaluation of own movement and comparison of others.

•   "Kids are motivated by it

•   They love it

•   It puts them more in charge of their own learning"

✓ Challenges for the PE Profession

•   To up-skill PE Teachers' ICT/image management skills

•   To resource teaching areas to provide for digital image feed back

•   To develop digital content

•   To be precise about what clips we need for particular teaching situation

•   To ensure that the new generation of physical educators are skilled

•   To create A DIFFERENT TEACHING CULTURE

•   Parental permission

- Defining the use of content
- In House use of video/digital stills
- Publishing images
- Filming Guidelines

ICT applications can improve the learning process in physical education. The students and the educators can both benefit. It is an integral part of education.

References:

Brito, C.& Duarte, J. (2005). ICT and in-service teachers´ training: numbers and trends. Interactive Educational Multimedia, 11, 67-77.

Matos, J. P. (2005), ICT in pre-service teacher education in Portugal: trends and needs emerging from a survey. Interactive educational multimedia, (11), 153-167.
.
Momodu, A. (2000), Academic learning time in senior secondary school physical education classes in Nigeria, Journal of the International Council for Health, Physical Education, Recreation, Sport and Dance. 36 (3),51-54.

Monica Stanescu, Marius Stoicescu, Corina Ciolca, Computer Use In Physical Education And Sports Teaching, 7th International Scientific Conference E-learning And Software For Education, Bucharest, 2011.

Sansanwal, D.N(1978), An Experimental Study in Programmed Learning for Teaching Research Methodology Course at M.Ed. Level. Ph.D. (Edu.), M.S. University of Baroda.

Verma, A.S., Use of ICT in Education, http://asverma.wordpress.com/

Vikram Singh(2009), Impact of Information and Communication Technology on Public Life, Laxmi Publications, Ltd., pp. 30.

Whitaker, D.F. (1990), Comparison of Tutor Retrieval text, Computer Assisted Instruction, and Programmed Lecture in teaching Statistics to Physical Education Majors. Dissertation Abstract International, Vol. 51, No. 11.