

# UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN TEACHING AND LEARNING OF PHYSICAL EDUCATION IN SECONDARY SCHOOLS IN NSUKKA L.G.A, ENUGU STATE

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## **Abstract**

The study was on the utilization of ICT in teaching and learning of Physical Education in Nsukka L.G.A. Three research questions guided the study. The population for the study is 30 public secondary schools in the area and there was no sampling because the population is manageable. Data were collected with close ended questionnaire and analysis was done using frequency and simple percentages. The findings showed that ICT resources are not available and that those tools which the teachers can lay their hands on, are used mainly for personal purposes and not for teaching and learning. It was recommended that governments and concerned individuals should help in providing ICT facilities in the school as well as organizing ICT training for teachers through workshop, seminar etc.

The culture of Information and Communication Technology is fast penetrating into all spheres of life including education. ICT has been noted as indispensable tools for effective teaching and learning. This is why the federal government over the years had the intention to provide ICT facilities in schools (FRN 2004), though this has not been fully realized.

Information and communication technology has been defined as the application of technologies to teaching and learning (Ejionueme 2012). According to Olaleye (2015) ICT are tools that are necessary in all educational institutions, that is, from primary, secondary and tertiary institutions. Olaleye further stated that these tools comprise electronic devices such as computer (hardware and software), networking, telephone, video, multi-media, internet services, television, satellite discs, photocopy, CD Rom, fax machines and so on.

The use of ICT is virtually universal as it is being applied in every field of endeavour, even in the field of Physical Education. Physical Education is defined as a process of education through physical activities which aim at the development of the individual through the acquisition of skills while experiencing motion (Disposkan, 2011). Studies have shown that the use of ICT in teaching physical education increases students' motivation and knowledge acquisition (Ferrara. 2013).

Tearle (2005) also noted improvement of performance, recording and monitoring of activities and development of independent and group learning as some of the roles of ICT in physical education. ICT can also be used by physical education teachers to support them in their wider professional role, including planning and preparation and administration (Conway, 2000). For example locating information from the internet, recording students performance, arranging sports fixtures are all referenced when ICT use is discussed.

In classroom situation, utilization of ICT tools for teaching and learning is imperative. PE teachers are expected to adequately equip themselves with professional skills in ICT that will help to enhance teaching and learning. ICT tools which can enhance teaching and learning of physical education according to Tearle, Golder, Moore and Ogden (nd) include; video camera and video

analysis software for analyzing, assessing and improving performance; power point for presentation and demonstration of pupils' ability to select and synthesize information; internet to find resources to support teaching; heart rate monitors and other health related equipment to develop students' knowledge and understanding of what happens to their body during exercise; and interactive CD Roms and DVDs that enable students to learn new skills or develop existing skills through visual and auditory demonstration. Other areas to utilize ICT include; evaluation of learning outcomes and classroom management (Oayeleye 2015). According to Olayele, ICT facilities could be used to prepare lesson plan, write student's reports, store data, collect and analyze students' achievements, recent research findings in a particular subject area could be easily obtained through the internet and e-learning.

The issue of utilization of ICT by teachers in secondary school should be of paramount importance to school administrators, state and federal government. However studies have identified hindrances to teachers use of ICT to include; lack of ICT materials. Olaleye and Oyebanji (2010) reported that computer and all allied tools were not available. Nworgu and Oyim (2003) also reported that teachers lack the necessary skills required for ICT application. According to Ajogwu (2012), it was observed that teachers' literacy in the use of ICT and its associated resources are very poor. This simply means that the teachers do not possess the necessary skills in the use of ICT resources to teach, even when ICT resources are available.

Teaching and learning with technology has been shown to have significant positive effects on students' outcome when compared with traditional instruction (Waxman & Mtchko 2003). In spite of the known benefits of ICT in education, the use of ICT in Physical Education has not had the same high profile as in other curriculum subjects (Office for Standard in Education 2004). This study is, therefore, out to investigate the utilization of ICT for effective teaching and learning of Physical Education in Secondary Schools in Nsukka L.G.A.

To ascertain this, the study was guided by the following research questions:

- (1) What are the ICT tools available for teaching and learning of Physical Education in Secondary Schools in Nsukka Local Government Area?
- (2) What are the ICT tools used by Physical Education teachers in the area of study?
- (3) What are the purposes of using ICT tools by Physical Education teachers in the area of study?

### **Methods:**

The survey research design was used for the study. The design was considered appropriate because according to Thomas (2002) it helps to describe, record, analyze, and interpret conditions as they exist.

The population for the study comprises all the Physical Education teachers (subject heads) in public secondary schools in Nsukka L.G.A. They are thirty (30) subjects (PPSMB, Statistics Unit, 2014). Close ended questionnaire was the instrument for data collection. The questionnaire has two sections 'A and B'. While section 'A' sought for information on the personal data of the respondents, section B sought for information which addressed the three research questions. The questionnaire was validated by three experts in the department of Physical and Health Education, at Federal College of Education, Eha-Amufu. Copies of the questionnaire were administered by the researcher and two other research assistants. The completed copies were collected on the spot with hundred percent (100%) return rate. Frequency and percentages were used to answer the research questions.

**Results and Discussion:**

**RQ1:** What are the ICT tools available for teaching and learning of Physical Education in Secondary Schools?

**Table One: Response on the available ICT tools in secondary schools:**

S/N	Items	Frequency(F)	Percentage (%)
1	Computer	12	40%
2	Video Camera	0	0%
3	Still Camera	0	0%
4	Heart rate monitor	3	10%
5	Internet	5	16.7%
6	Stopwatches	25	83.3%
7	White board	13	43.3%
8	Motion Analysis System	0	0%
9	Power Point Projector	2	6.7%
10	C.D. Roms	3	10%
11	DVD and Television	2	6.7%
12	Satellite	0	0%
13	Printers	12	40%
14	Mobile Phones	30	100%
15	Interactive White Board	0	0%
16	Pedometers	3	10%
17	Fitness Softwares	0	0%

Table 1 shows that among the ICT tools listed, stopwatch and mobile phone are available in majority of the schools with 83.3% and 100% percent respectively. Computer and printer have 40% availability respectively and white board available in 43.3% of the schools. Other tools available as indicated in the table are those in items 4,10 and 16 which have 10% respectively, items 9 and 11 are available in 2 of the schools representing 6.67% respectively, while 5 schools representing 16.7% respectively, indicated to have internet. Such tools like video camera, still camera, motion analysis system, satellite, interactive white board and fitness softwares are shown to be non-available in the schools.

**RQ2:** What are the ICT tools the Physical Education Teachers can make use of?

**Table 2: The ICT tools used by Physical Education Teachers:**

S/N	Items	Yes	Percentage (%)
1	Computer	12	40%
2	Video Camera	10	33.3%
3	Still Camera	11	36.7%
4	Heart rate monitor	3	10%
5	Internet	20	66.7%
6	Stopwatches	25	83.3%
7	Motion Analysis System	0	0%
8	Power Point Projector	0	0%
9	C.D. Roms	7	23.3%
10	DVD and Television	30	100%
11	Satellite	10	33.3%
12	Printers	10	33.3%
13	Mobile Phones	30	100%
14	Social Networking Platforms	18	60%
15	Interactive White Board	0	0%
16	Pedometers	5	16.7%
17	Fitness Soft wares	8	26.7%

Table 2 shows that majority of the subjects can make use of internet (66.7%), stopwatch (83.3%), D.V.D and Mobile Phones 30(100%) respectively. 18(60%) game masters indicated that they can use social networking platforms. 12(40%) can make use of computer, 10(33.3%). Video camera, satellite and Printer respectively, and 11(36.7%) still camera. It was shown that other tools in items 4,9,16 and 17 can be used by very few of the subjects with percentage scores of 3(10%), 7(23.3%), 5(16.7%) and 8(26.7%) respectively. It was also indicated that none of the game masters can make use of motion analysis system, power point projector and interactive white board.

**Research Question 3:** What are the purposes of using ICT tools by physical Education teachers in secondary schools.

**Table 3: Purposes of using ICT tools by Physical Education Teachers:**

S/N	Items	Yes	Percentage %
1	Assessment of students skills & knowledge	0	0%
2	Giving students assignment on the internet	19	63.3%
3	Print reports for students to see and share with parents	0	0%
4	Presentation and demonstration with power point	0	0%
5	Analyzing performance	0	0%
6	Finding teaching resource from internet	18	60%
7	Using white board for teaching	0	0%
8	Writing students report	0	0%
9	Writing lesson plan	9	30%
10	Storing data	9	30%
11	Recording their responses using voice recording	0	0%
12	Replaying model on video for students to view skill once more	0	0%
13	Communicating with athletes who are role model through social networking platform such as face book, twitter, wassap etc.	0	0%
14	Using pedometer to measure physical activity level	1	3.3%
15	Measuring students fitness level using Heart rate monitor	2	6.7%
16	Using video to give feedback on students' performance	0	0%
17	Personal use	30	100%

In table 3, 30(100%) of the subjects indicated they use ICT tools for personal purposes, 19(63.3) for giving students assignment on the internet, 18(60%) indicated that they find teaching resource from internet while 9(30%) showed that they use ICT tools for writing of lesson plan and storing of data respectively. Pedometer and Heart rate monitor were indicated to be used in Physical Education by 1(3.3%), and 2(6.7%) of the respondents respectively. None of the respondents indicated that they use ICT in Physical Education as stated in the other 11 items.

#### **Summary of Findings:**

1. There is no availability of ICT tools in majority of the schools. This is shown in table 1.
2. Majority of the game masters cannot make use of most of the ICT tools. Only stopwatch, Internet, mobile phones and social networking platforms can be used by over 50% of the subjects. This is shown in table 2.
3. Most of the respondents do not use ICT for the purpose of teaching and learning of Physical Education. This is shown in table 3.

#### **Discussion**

Findings in table one show that there is no availability of ICT tools in secondary schools in Nsukka Local Government Area. ICT tools that can be found in up to 40% and above of the schools include Computer, Stopwatch, White Board, Printer and Mobile Phone. Other ICT materials are more or less not available in all the schools. This result agreed with the report of Olaleye and Oyebanji (2010), who found that ICT resources are not available in secondary schools. This shows that the

schools lack the necessary ICT tools and there is no doubt that this largely affects the use of ICT in Teaching Physical Education.

In table two, the study revealed that the teachers can make use of few ICT materials especially mobile phones, stopwatch, DVDs, internet, computer, and social networking platforms. It was shown that they cannot make use of majority of the ICT tools listed especially those which are specially needed for teaching and learning of Physical Education eg. Heart rate monitor, video camera, still camera, motion analysis system, fitness software, pedometer and power point projector. This result gave credence to Olaleye (2015) who reported that teachers are not adequately well exposed to realities of ICT tools and skills that would assist them in teaching and learning. This finding is also, in accordance with the finding of Ajogwu (2012) that teachers literacy in uses of ICT and its associate resources are very poor. This result could be because the materials are not readily there in the schools.

Table 3 shows that the subjects do not use ICT for the purpose of teaching and learning, but for personal use. This result is not a surprise as it was earlier reported that the use of ICT in Physical Education is less than in other subject areas (OFSTED, 2004). The result showed that in Physical Education instruction, teachers do not use ICT tools such as motion system Analysis, Video Cameras, Power Point and so on which have been reported to have great impact in enhancing virtually every area of Physical Education curriculum (Ladda, Kreating, Adams, Toscano, 2004). This result could be because of the reported lack of ICT skills by physical education teachers.

### **Conclusion**

Physical Education is an integral part of general education which aim at developing all round individual. It has been noted that the old ways of teaching and learning of Physical Education in Nigeria have persisted for several decades with low level of achievement. Research has however, affirmed that teaching and learning with technology has had a significant effect on students outcome when compared with traditional instruction. If ICT has a significant effect on teaching and learning in the regular classroom, it could also enhance instruction, assessment and students performance when it is utilized in physical education.

### **Recommendations**

Based on the findings of the study, the following recommendations were made.

1. The government, non-governmental organizations, school administration, parents and concerned individuals should help in the provision of ICT resources in secondary schools.
2. Government should organize on regular basis professional training to equip teachers with the ICT skills required for teaching and learning through workshops, seminars and conferences.
3. Educational administrators and other government agencies should sensitize the teachers on the need and importance of the use of ICT to enhance teaching and learning in secondary schools.

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