

# COMPUTER TECHNOLOGY AND MULTIMEDIA IN TEACHING PROCESS OF SPORT SKILLS FOR OPTIMUM PERFORMANCE OF SECONDARY SCHOOL STUDENTS IN SPORTS IN EKITI STATE, NIGERIA

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**ABSTRACT:** *The study investigated the use of computer technology and Multimedia in Teaching Process of Sport Skills for Optimum Performance of Secondary School Students in Sports in Ijero Local Government Area, Ekiti State, Nigeria. The design for the study was descriptive survey type of research. The target population for the study comprised of all public secondary schools students in Ijero Local Government Area of Ekiti State, Nigeria. Simple random sampling technique was used to select twenty (20) students from each of the five (5) selected secondary schools from Ijero Local Government Area of the State. A total of one hundred (100) students were used as samples for the study, these comprise of sixty one (61) male and thirty nine (39) female. Five null hypotheses were tested at 0.05 level of significance. The research instrument used for this study was a self-structured closed ended questionnaire designed by the researcher. The instrument was subjected to validity and reliability mechanism. The reliability co-efficient obtained was 0.91. The questionnaires were administered to the students with the help of two (2) trained research assistants and was collected back immediately. The data collected were subjected to Chi-square ( $X^2$ ) statistical analysis. The findings showed that application of ICT in the teaching and learning process of sport skills is relevant. The results also show that visual and audio aids are not available for the teaching and learning of physical education. Conclusively, the study has exposed a highly reliable body of information about the relevance of ICT in the learning process of sport skills. It was therefore recommended that government should help the college in building computer laboratory with adequate electricity supply. The school management should help equip the departmental laboratory with computer system and provide human resources.*

**Key Words:** *Computer technology, multimedia, teaching process, sports skills, performance*

## Introduction

Information and communication technology (ICT) is an indispensable part of the contemporary world. In fact, culture and society have to be adjusted to meet the challenges of the information age. Information and communication technology (ICT) is a force that has changed many aspects of people's ways of life. Considering such fields as medicine, tourism, travel, business, law, banking, engineering and architecture, the impact of ICT in the past two or three decades has been enormous (Adamu, 2001).

ICT encompasses a range of applications, communications and technologies which aid information retrieval and research communication and administration. These include: Internet access, electronic-mail, CD-ROMS, telephone, online databases, library services and fax machines. It has become a global phenomenon of great importance and concern of all aspects of human endeavour, spanning across education, governance, business, labour, market, shares, productivity, trade, agriculture, commerce and others (Bob, 2013).

Multimedia typically refers to the presentation of material in two forms: auditory/ verbal and visual pictorial (Mayer, 2001). Multimedia is a media and content that uses a combination of different forms. The content forms include a combination of text, audio, skills, image, animation, video, or interactively content form. Henich, Molenda, Rusell & Smaldino (2002) reported that multimedia is usually recorded and played, displayed or accessed by information content processing devices such as computerized and electronic device but can also be part of a live performance. Multimedia is distinguished from mixed media in fine art, by including audio. The strategies have included power point and computer - assisted video learning in a Variety of content areas (Mayor & Johnson, 2008). In addition to auditory and video media, using multimedia will appeal to the sense of learners either athletes or students to perform optionally. Application of computer technology and multimedia is a common phenomenon in the teaching and learning process in education for many courses in which physical Education is one of them and it really helps to optimize the performance of athletes. Wong, Shsriffidin, Mislán, Julian & Guan (2007) asserted that information and communication Technologies (ICT) applied to the teaching learning process offers the student, athlete and

teachers many advantages such as easy access, flexibility, teaching centred on the students and better opportunities for collaborating. For this reason, their integration in educational and training system constitutes one of the main concerns for all (Valle & Naya, 2004).

The computer – aided learning (CAL) is also the key content and main technological means of the application of modern information technology to all aspects of education. This has also been widely applied to each field of teaching and learning except in physical education and sports (Wong, 2011) especially in Nigeria. However in research areas of sports, physical activity, technologies are widely used as educational tools to collect data as a basis for the development of better coaching methods and performance techniques (Lockyer, 2007). Multimedia learning systems have been developed for sport or disciplines of sport sciences such as sport biomechanics (Baitzoponlos & Papdoponlos, 2001). In addition inter discipline solutions have been strived for. Beca (2005) have designed and implemented a comprehensive modular system falling into these categories. Their starting points are sport. Questions related to these sports are answer from the perspective of sport scientific discipline in a highly interdisciplinary way. Modules are organized in form of matrix of sport and sport scientific disciplines. Multimedia materials and learning environment have also been developed for technical and tactical education. The system mentioned above Beca (2005) for example manifold animation and video sequence to assist instructors and students to comprehend sports motions and technical/tactical actions as applied in game sports. One specific emphasis lays in the methodical organization of the learning process of sports techniques. Leser (2009) present an application for learning tactic in soccer. They presume that dynamical visualization is advantageous when communicating tactical behaviour. This assumption is supported by the method analysis performed by Hoftler & Lenthner (2007) which confirm the effectiveness of such instruction material for comprehending dynamic phenomenological situation. Wiemeyer (2008) asserted that there are some students which examine how multimedia technology impact learning in the area of sport and sport science in the cognitive domain. However, such intervention impact on students' outcome in the motor domain. Audio visual is also well documented to be the best medium of learning of any concept by people and students generally. Sports skills entail the process of learning motor skills and require change in motor behaviour. This instruction approach had been used in the process of teaching and learning for many school subject including physical education and sport skills. Katz (2003) Recruit evidence suggests that demonstration by expert may not always provide the best learning condition for athletes and students. This is because athletes and students may not get good posture of the performance nor may hence poor conception of the whole skills. At times, demonstrator may also demonstrate the performance missing out some major parts of the whole speed of performance or doing wrongly leading to poor learning the difference in the body make-up of the demonstrator, level of maturity and speed of performance and of the student may also affects techniques being learnt right (Darden ,1997). Adewumi (2005) stated that the use of multimedia and computer technology will equip the teacher and coaches on how to make good impaction into the students to optimize their performance and in teaching and learning in physical education and sports.

Despite the fact that the invention of computer technology and multimedia is very good in the teaching and learning process of sport skills at all level of the studies and possess capability to optimize performance of students and athletes, still there are a lot of noticeable challenges facing it's suitability everywhere most especially in Secondary schools in Ekiti State, Nigeria which is restricting both the teachers/coaches and the students in making use of it for teaching and learning sport skills. Therefore, there are some problems observed such as; inadequate power supply, lack of computer technology laboratory in the department, lack of multimedia aid, exclusion of information communication technology (ICT) from the curriculum of physical education, inadequate motivation for the lecturers and students by the government, lack of textbooks on ICT and physical education, low level of knowledge and understanding of the students about computer among others.

The invention of computer technology and multimedia expected to serve as source of information needed by the students and means of better exposition to local and foreign sports activities and competition. This is not realistic in physical education as a result of students little knowledge of computer about the usefulness of computer technology and multimedia for effective optimization of their performance, learning sport skills in game, rules and regulation guiding the successful education of physical activity and sport skills for both the lecturers, students in physical education department and the entire university are not met. The use of computer technology and multimedia will enlighten the students academically, becoming well expose and increase in knowledge of operating computer system. Likewise in the field of internet they will not be left out. If the student can change their orientation and put more interest in the use of computer technology and multimedia. Hence, this prompted the researcher to investigate the use of computer

Technology and Multimedia in teaching process of Sport Skills for Optimum Performance of Secondary School Students in Sports in Ekiti State, Nigeria.

### Research Hypotheses

The following null hypotheses were generated for the study and tested:

1. There is no significant application of multimedia in sport skills in department of physical health and recreation
2. There will be no significant justification for the use of CAL in physical education and sports.
3. Multimedia and CAL will not be significant in the teaching of physical education in the department of physical health and recreation.
4. Video tape feedback will not be significantly available for the teaching of physical education and sport in the department of physical health and recreation.
5. There will not be any significance in the role of ICT, learner, and teacher/instructor in teaching and learning process of sport skills in the department of physical health and recreation.

### Review of Literature

Computer is a programmable machine designed to perform arithmetic and logical operation automatically and systematically on the input given by the user and gives the desired output after process. Computer is important because of their ability to save money, improve efficiency and facilitate communication between people around the world. Computer often have wide-spread household use for both education and entertainment (Ajelabi, 2000).

Knirk (2009) opined that technology is the branch of knowledge that deals with the creation and use of technical means and their interaction with life, society, and the environment, drawing upon such subjects as industrial acts, engineering, applied science and pure science.

Education technology is defined as the systematic application of the people, ideas, materials and equipment to the solution of educational problems to the process by which the learning materials are selected or produced, by which the need of communication are designed and arranged in the learning environment and the strategies by which human and non-human resources are utilized to improve the efficiency and effectiveness of education.

Media is a channel through which message, information, ideas, and knowledge are disseminated. Educational media refers to all forms of information comer that can be used to record, store, preserve and transmit or retrieve information to promote and encourage effective teaching and learning activities. They are equally self- supporting devices that can be used by educator to present a completer body of information in the teaching process. (Babalola, 2004).

Rodriguez (2001) opined that today we live in a world in which everybody has to use new technology, it is not an option but a must and even more for the teacher, who is supposed to have a close relationship with any innovation that occurs in their specific field of work in general area that have a relation to them.

Lockyer (2007) argued that within teacher education programmes, computer technology must be integrate with curriculum pedagogy and field experience to model what the pre service teacher might use in their own practice. However, conventionally physical education is a discipline that does not rely heavily on written discourse and yet where multiple representations are needed for the construction of understanding. This blog is designed to give teachers further insight to know how that can utilize computer technology and multimedia in their physical education classes. Written the broad areas of sport, physical activity and health, technologies are widely used as educational tool; to collect data as the basis for the development of better coaching methods and performance techniques.

Another aspect of using computer technology and multimedia in physical education is that revolutionized the way people use the internet and the interest in their utilization in higher education is increasing (Papastergiou, Germodimos & Antonion, 2011). This is evident in the use of the blogs, wikis multimedia, social networks that allows for the extensive collaboration amongst its user. In a study to explore the education in which a class was utilized as a means for physical education students to reflect on and show case their performance of specific basketball skills and receiving comments from their instructor, peers and an external experts. As it had been hypothesized, participating in the blogging activity did hence a positive impact on students computer technology self – efficacy, multimedia processing and blogging self – efficiency (Papastergiou et al, 2011). In another study by Thomas & Straiton (2006) on measuring the attitude, training, ability of equipment and approaches taken when using computer technology in physical education. This study concluded the lack of inclusion of computer technology and multimedia in lesson was

regarded as the most common weakness and stated “teacher often see the use of computer technology and multimedia in physical education and sport skills as a distraction from what they regard as the more important practical, derive focus of the subject”. Combining the new interest of these students with the age – old institution of the physical education lesson and sports practices could see results escalate and levels of interest and attainment intensity. Where budgets permit, teachers should be willing to look at interdicted games such that from Nintendo will games incorporate the computer technology into physical education and sports (McMeill, 2010).

Computer technology and multimedia has the potential to offer an existing and challenging environment through which to offer enhance learning (Hall 2001). However, it is impeditive that the physical datively focus is minted, physical educators and coaches more endeavour to use technologies if such integration would promote learning athletes within the detail context allowing students to achieve more efficiently and effectively than they could without computer technology. For the purpose of the blog, I will use the experience of the use of computer technology in physical education of athletes or even students in action can be used to develop pupils understanding and knowledge of the subject by reviewing video footage of their own action, for example, their games or strategies, gymnastics sequences or dance compositions, running and athletes events as well as even swimming events pupils can evaluate and improve their own performance particularly if they are able to look at their performances in slow motion or from a different viewing angel. Within physical education and sport activities, computer technology and multimedia has the potential to contribute of various stages:

- improve a student’s skills and techniques
- assist students in the review and evaluation of their performance
- develop a student’s knowledge and understanding of the subject
- develop a student’s understanding of the human body physiology and health
- Shift time (using slow motion to highlight fine detail with skills (Hall, 2001).

The six (6) skills every athlete must master in every sports. Every coach, athlete, media commentator and every fan will tell you that the fundamental element of all sports skills.

They are as follows:

- kicking and passing in football
- throwing and catching in cricket and baseball
- driving, turning and finishing in swimming
- tackling and passing in rugby and rugby league
- passing and shooting in basketball and netball
- Learning, practicing and mastering the basic skills of sport is of the foundations of coaching, sports performance and athlete training.

However, just learning the skill is only the first step in the sport, few believe that “practice makes perfect” if the goal is to win in competition.

There are different definition of sport “the ability to perform a sporting skill consistently well at speed, under fatigue and pressure conditions in a competition environment” (Wong, Shariffudin. Milan, Julia & Guan, 2011).

One of the challenging aspects of teaching motor skills in providing demonstration which best guide students to optional techniques and performance (Darden, 1997). According to Julismah (2006) opinion that the part of the traditional teaching method is not sufficient and became of the lack variety in teaching aide and credibility of the teachers, students interest in physical education as becoming more and more deteriorated. Therefore, multimedia CAT may be a solution as the students can learn independently and repeatedly in an interceptive environment and in a meaningful way. Most of the presently used course was for sports were developed based on general learning theory and did not consider psychomotor skills learning theories (Wong, 2011). Multimedia ICT therefore has the potential to offer an exciting and challenging environment through which it enhance teaching – learning especially in teaching sport skills and physical education (Hall & Leigh, 2001). Numerous research studies hence found that learning time is reduced and mastery increased for students who use multimedia instructional programs in subjects ranging from language are science, physical education. These studies also have shown that students exhibit greater motivation and enjoyment when they use such software, they are more datively involved in lessons and attention is more focused (Mohnsen, 1995).

Quintal (2012) said that today, we live in a world in which everybody has to use new technologies and this is not an option but a must and even more for the teacher, who is supposed to hence a close relationship with dry innovation that hence a relation to them. Rodrigues (2011) reported that Physical

educators, coaches and experts in ICT must therefore take up these new challenges to optimize not only their own job performance but also students/athlete's performance. Wong (2011) reported that computer technology and multimedia have long been applied in the teaching and learning process with its promising advantages in academic course. Though this is not a common feature of a regular class of physical education especially when teaching sport skills. The implication is that utilizing the right combination of multimedia element will influence the way students athletes learn, increase their interest, enhance their performance and affect the learning environments (Dhariffnddin, 2009). The positive contribution point out the importance of developing a vision for technology use (Ertmer, 1999; Wong, 2009) reviewed that teacher of physical education and coaches especially for teaching sport skills. Therefore, teachers also need to create and expose themselves to activities that will optimize their teaching and learning process. This will go a long way to achieve expected goals in physical education and sports programme with outcome of excellent result both in academic and motor performance.

In physical education, Quiadsall (2011) stated that ICT has the potential to contribute at various stage of learning skills and concept in Physical Education and Sports. She highlighted these advantages to include improving a student's skills and techniques; assisting students in the review and evaluation of their performance; developing a student's knowledge and understanding of the human body, physiology and health. Students can still re-visit the techniques by watching and receiving positive feedback to correct their wrong perceptions and wrong learning of skills.

According to Aribamikan (2007) there are many way by which knowledge and skills could be imparted on the students such as lecture, reporting, experimental, whole-part-whole, directing, progression and demonstration. For the purpose of this study, attention would be focused on methods of teaching that are practical - oriented. This whole - part - whole, field trip, demonstration, visual aids, individuals or group method, progression, experimental and directing method.

- **Whole - part - whole - method:** the teacher demonstrate the whole skills to the students and then it is broken into part or unit as the teacher show steps in each part and then the skills is taken altogether again. The first stage is to address the mind of the learner to the skill as a whole, while the part stage is to make teaching and learning easy especially when it comes to laying emphasis on major areas relating to the skill. The third stage (the second whole) is a way of joining or combining the parts into one after mastering of the unit. For example, spiking in volleyball can be broken into run up, take off, hand action, spiking the ball and landing. Audio visual can be effectively used here.
- **Field trip method:** this method requires the teachers to take his/her student out from their school to a place where there is equipment and facilities for practical purpose e.g. a teacher may take the student to a stadium for a basketball practical class or swimming pool for a practical class. The place to be visited must serve as a teaching device and there must be discussion before and after the trip e.g. stadium where the use of big screen can be seen.
- **Visual aid method:** involve the use of material such as video - tape, slide, films, drawings, moving picture and others that may improve the learning of any skill.
- **Demonstration method:** Involve showing the student what you want then to do by demonstrating or oral description of the exercise. Demonstration provides a type of visual incentive that enhances retention often line expert (resource person) are invited to the classroom to demonstrate a skill. This method would enable student to duplicate the correct movement pattern. The internet could be effectively used here.
- **Individual method of teaching:** The teachers practice the skill first and ensure that student carry out the skill one after the other. He can then correct individual mistakes. Here, he gives attention and solves students problems individually. But in group, there may be 4to 5 student's problems individually. But in group may be 4 to 5 students in a group and the teacher go round to assist student in each group. Computer could be used to teach student and correct fault in carrying out a particular skills.
- **Experimental methods:** students are left with materials to play with and device solutions to problems or task. It requires the creatively of the student to carry out the skills, the teacher is only expected to guide so that the skill could carried out appropriately. Here, internet, television, computer and media lie super sports would be useful.
- **Progression method:** is a method of teaching that breaks skills into stage, such that each successive stage is built in the former. This method has a sequential arrangement from simple to complex and there is an ordered break down bringing out comprehensive links between the previous knowledge and new knowledge. Internet, computer can be used for progression.

- **Directing method:** require the teacher to give instruction and allows the students to carry out the skills. Watching super sports programmes on television makes students and athletes learn on their own.

Adeyanju (2005) asserted that athlete and coaches hence to apply facilities and equipment to training situation, which have yielded tremendous result. There are now available stop watcher, electronic starting blocks, and electronic score timing scoreboards. Photo finish equipment and wild range of precision while electronics device now measure distance in the throws.

Video tape feedback in the educational classroom has been a widely used and accepted technique of teaching and assessment since the invention of the video camera in the early 1960's. video tape feedback has been pack aged in many shapes and forms over the past four decades many schools are using VTFB as a viable feedback method to students when learning how to conduct a proper history and perform appropriate physical exams slants on patients. The field of coaching has been utilizing VTFB for years to analyse opponents playing styles and tendencies as well as their own terms. Today's physical educators are taking what was so obvious for these team and utilizing VTFB within their own teaching areas, both indoor and outdoor, in order to improve learning and assessment of psychomotor tills relative physical education activity course work (Juslisah, 2006).

#### **Benefits of videotape feedback**

1. Isolating the most difficult aspect of specific movement patterns.
2. Introducing associated cognitive processes (e.g. self-talk) that influences performance.
3. Serving as an effective modelling condition to provide visual images and increase observation learning.
4. Promoting valuable cognitive effort in the learning process. Basically, thinking before you act. Eventually, through repetition and positive self – review, the correct sequence of events can be performed with little cognitive effort.
5. Increasing motivation, enthusiasm and effort in learning by the simple documentation of progress, albeit in small increment at times.
6. Assisting in changing in grained negative behaviour working in mirror, like we do with VTFB exposes flaws. Using self-modelling techniques effectively can help assist with changing a desired behaviour. (Julismah, 2006).

#### **The roles of ICT in teaching and learning process of sports skills**

1. Through engaging learners in joint endeavour, ICT can help to make the classroom and training a more inclusive environment.
2. ICT plays an important role in stimulating interaction and discouraging passivity.
3. ICT will help to debate teaching and learning from the constraints of the linear curriculum.
4. ICT can provide a bridge between learning at school and learning outside, a home or further field, giving substance to the learning to live together. (Jenlams, 1999)

#### **Methodology**

The design for the study was descriptive survey type of research. The target population for the study comprised of all public secondary schools students in Ijero Local Government Area of Ekiti State, Nigeria.

Simple random sampling technique was used to select twenty (20) students from each of the five (5) selected secondary schools from Ijero Local Government Area of the State. A total of one hundred (100) students were used as samples for the study, these comprise of sixty one (61) male and thirty nine (39) female. The simple random sampling technique was also used to select students from each of the schools and sixty respondents were randomly selected from each of the selected secondary school. The selection cut cross both male and female students from SSS I, SSS II and SSS III classes. Five null hypotheses were tested at 0.05 level of significance.

The research instrument used for this study was a self-structured closed ended questionnaire designed by the researcher. The questionnaire is designed to elicit relevant information. The instrument was subjected to validity and reliability mechanism. Reliability of the instrument was ascertained using split half method. One of the schools that did not form part of the study was used. Twenty (20) students were randomly selected. The instrument was administered to the selected respondents and two sets of data were generated from the split. The data collected was analysed by using inferential statistics of Pearson's Product Moment Correlation (PPMC) and Spearman Brown's formula. The co-efficient obtained was 0.91. The

questionnaires were administered to the students with the help of two (2) trained research assistants and was collected back immediately.

The data collected were subjected to Chi-square ( $X^2$ ) statistical analysis.

**Results and Discussion**

**Hypotheses testing**

**Hypothesis 1:** There is no significant application of multimedia in sport skills in department of physical health education and recreation.

**Table 1:** chi- square Analysis of data on application of Multimedia in sport skills

S/N	Items	Yes	No	df	x <sup>2</sup> cal	x <sup>2</sup> cri	Result
1.	Will the application of computer technology make the teaching of sport skills more effective	82	18	1	12.16	3.84	S
2.	Will the use of multimedia in teaching sport skills help to optimise performance	77	23				
3.	Are there sufficient computer technology resources in the department	49	51				
4.	Can multimedia promote good teaching of sport skills in the department	68	32				

S= Significant

Table 1 shows the chi - square analysis of data on application of multimedia in sport skills. The chi - square calculated value was 12.16, the Chi - square critical value was 3.84 and degree of freedom is 1 at 0.05 level of significance. Since the x<sup>2</sup> calculated value was greater than x<sup>2</sup> critical value, hypothesis 1 which started that there will be no significant application of multimedia in sport skills in department of physical health education and recreation was rejected. Therefore, the result is significant to the researcher concluded that there will be significant application of multimedia in sport skills in department of physical health and recreation.

**Hypothesis 2:** There will be no significant justification for the use of CAL in physical education and sports.

**Table 2:** Chi-square analysis of data on justification for the use of computer application technology in physical education and sport.

S/N	Items	Yes	No	df	x <sup>2</sup> cal	x <sup>2</sup> cri	Result
1.	Will the use of computer technology aid the teaching of physical education?	72	28	1	9.22	3.84	S
2.	Dose the use of multimedia help to acquire adequate sport skills?	68	32				
3.	Will students show interest in the use of computer technology for teaching and learning process?	76	24				

S = Significant

Table 2 above shows the Chi - square analysis of data on justification for the use of CAT in physical education and sports. The chi - square calculated value was 9.22, the chi - square critical value was 3.84 and degree of freedom is 1 at 0.05 level of significance. Since the x<sup>2</sup>calculated value was greater than x<sup>2</sup> critical value, hypothesis 2 which stated that there will be no significant justification for the uses of computer application technology in physical education and sports was rejected. Therefore, the result is significant the researcher concluded that there will be significant justification for the use of CAT in physical education and sport.

**Hypothesis 3:** Multimedia and CAL will not be significant in the teaching of physical education in the department of physical health and recreation.

**Table 3: Chi- square analysis on the method of teaching physical education**

S/N	Items	Yes	No	df	x <sup>2</sup> cal	x <sup>2</sup> cri	Result
1.	Does the use of computer technology help in the effectiveness of teaching physical education?	71	29	1	14.23	3.84	S
2.	Will the use of computer technology make the method of teaching sport skills less difficult?	67	53				
3.	Will multimedia suit the appropriate teaching of sport skills?	82	18				

S= Significant

Table 3 above shows the Chi – square analysis of data on method of teaching physical education. The chi – square calculated value was 14.23, the chi – square critical value was 3.84 and degree of freedom is 1 at 0.05 level of significance. Since the x<sup>2</sup> calculated value was greater than x<sup>2</sup> critical value, hypothesis 3 which stated that there is no significant method of teaching physical education in the department of physical health education and recreation was rejected. Therefore, the result is significant the researcher concluded that there is significant method of teaching physical education in the department of physical health education and recreation.

**Hypothesis 4:** video tape feedback will not be significantly available for the teaching of physical education and sport in the department of physical health education and recreation.

**Table 4: Chi-square analysis on the use of videotape feedback in physical education and sport**

S/N	Items	Yes	No	df	x <sup>2</sup> cal	x <sup>2</sup> cri	Result
1.	Can learning be more effective through the use of video tape feedback?	76	24	1	9.78	3.84	S
2.	Can the use of videotape feedback increase the knowledge of the student?	91	9				
3.	Can different sport skills be acquired through the use of videotape feedback?	66	54				
4.	Will the use of videotape feedback be of good help to the student?	76	24				

S = Significant

Table 4 above shows the Chi – square analysis of data on video tape feedback. The chi – square calculated value was 9.78, the chi – square critical value was 3.84 and degree of freedom is 1 at 0.05 level of significance. Since the x<sup>2</sup> calculated value was greater than x<sup>2</sup> critical value, hypothesis 4 which stated that videotape feedback will not be significantly available for the teaching of physical education and sport in the department of physical health and recreation was rejected. Therefore, the result is significant, the researcher concluded that videotape feedback will be significantly available for the teaching of physical education and sport in the department of physical and health education.

**Hypothesis 5:** There is no significance difference in the role of ICT, learner and teacher/ instructor in teaching and learning process of sport skills.

**Table 5: Chi- square analysis on the role of ICT, learner and teacher/instructor in teaching and learning process of sport skills**

S/N	Items	Yes	No	df	x <sup>2</sup> cal	x <sup>2</sup> cri	Result
1.	Can ICT help to make the classroom and training arena a conducive environment	83	17			3.84	S
2.	Will ICT give the learner a means to learn accurate sport skills and optimise their performance	93	7				

3.	Will the teacher become good facilitator through the use of ICT in teaching physical education?	67	33	1	7.98		
4.	Does ICT bring good relationship between the teacher, learner and the materials to be learn	84	16				

S = Significant

Table 5 above shows that Chi – square analysis of data on roles of ICT, learner and teacher / instructor in teaching and learning process of sport skills. The chi – square calculated value was 7.98, the Chi – square critical value was 3.84 and degree of freedom is 1 at 0.05 level of significance. Since the  $\chi^2$  calculated value was greater than  $\chi^2$  critical value, hypothesis 5 which stated that there will not be any significance in the roles of ICT, learner and teacher/instructor in teaching and learning process of sport skills in the department of physical health education and recreation was rejected. Therefore, the result is significant the researcher concluded that there is significance in the roles of ICT, learner and teacher/instructor in learning and learning process of sport skills in the department of physical health education and recreation

**Discussion**

Based on the hypotheses tested for this study, hypothesis one which stated that there will be no significant application of multimedia in sport skills in department of physical health and recreation was not rejected the researchers upheld that there will be significant application of multimedia in sport skills in department of physical health and recreation.

In support of the above statement it was reported by Lockyer (2007) that within teacher education programmes, computer technology must be integrates with curriculum pedagogy and field experience to model what the pre service teacher might use in their own practice. However, conventionally physical education is a discipline that does not rely heavily on written discourse and yet where multiple representations are needed for the construction of understanding. Another aspect of using computer technology and multimedia in physical education is that revolutionized the way people use the internet and the interest in their utilization in higher education is increasing Papastergiou, Germodimos & Antonion (2011). This is evident in the use of the blogs, wikis multimedia, social networks that allows for the extensive collaboration amongst its user. In a study to explore the education in which a class was utilized as a means for physical education students to reflect on and show case their performance of specific basketball skills and receiving comments from their instructor, peers and an external experts. As it had been hypothesized, participating in the blogging activity did hence a positive impact on students computer technology self – efficacy, multimedia processing and blogging self – efficiency (Papastergiou et al, 2011). In another study by Thomas & Straiton (2006) on measuring the attitude, training, ability of equipment and approaches taken when using computer technology in physical education. Computer technology and multimedia has the potential to offer an existing and challenging environment through which to offer enhance learning (Hall, 2001). However, it is impeditive that the physical datively focus is minted, physical educators and coaches more endeavour to use technologies if such integration would promote learning athletes within the detail context allowing students to achieve more efficiently and effectively than they could without computer technology. For the purpose of the blog, i will use the experience of the use of computer technology in physical education of athletes or even students in action can be used to develop pupils understanding and knowledge of the subject by reviewing video footage of their own action, for example, 3, their games or strategies, gymnastics sequences or dance compositions, running and athletes events as well as even swimming events pupils can evaluate and improve their own performance particularly if they are able to look at their performances in slow motion or from a different viewing angle.

Furthermore, the result of findings for hypothesis two which state that there will be no significant justification for the use of computer application technology (CAT) in physical education and sports was not rejected. The researcher concluded that there will be significant justification for the use of computer application technology (CAT) in physical education and sports. In accordance with this hypothesis According to Julismah (2006) opinion that the part of the traditional teaching method is not sufficient and became of the lack variety in teaching aide and credibility of the teachers, students interest in physical education as becoming more and more deteriorated. Therefore, multimedia CAT may be a solution as the students can learn independently and repeatedly in an interceptive environment and in a meaningful way. Most of the presently used course was for sports were developed based on general learning theory and did

not consider psychomotor skills learning theories (Wong, 2011). Multimedia ICT therefore has the potential to offer an exciting and challenging environment through which it enhance teaching – learning especially in teaching sport skills and physical education (Hall & Leigh, 2001). Numerous research studies hence found that learning time is reduced and mastery increased for students who use multimedia instructional programs in subjects ranging from language are science, physical education. These studies also have shown that students exhibit greater motivation and enjoyment when they use such software, they are more datively involved in lessons and attention is more focused (Mohnsen, 1995). In physical education, Quiadsall (2011) stated that ICT has the potential to contribute at various stage of learning skills and concept in Physical Education and Sports. She highlighted these advantages to include improving a student's skills and techniques; assisting students in the review and evaluation of their performance; developing a student's knowledge and understanding of the human body, physiology and health. Students can still re-visit the techniques by watching and receiving positive feedback to correct their wrong perceptions and wrong learning of skills.

The result for hypothesis three which stated that there is no significant method of teaching physical education in the department of physical health and recreation was not rejected therefore the researcher there is significant method of teaching physical education in the department of physical health and recreation. According to Aribamakan (2007) there are many way by which knowledge and skills could be imparted on the students such as lecture, reporting, experimental, whole-part-whole, directing, progression and demonstration. For the purpose of this study, attention would be focused on methods of teaching that are practical – oriented. This whole – part – whole, field trip, demonstration, visual aids, individuals or group method, progression, experimental and directing method. Adeyanju (2005) asserted that athlete and coaches hence to apply facilities and equipment to training situation, which have yielded tremendous result. There are now available stop watcher, electronic starting blocks, and electronic score timing scoreboards. Photo finish equipment and wild range of precision while electronics device now measure distance in the throws.

Result for findings in hypothesis four that Video tape feedback will not be significantly available for the teaching of physical education and sport in the department of physical health and recreation was not rejected. It was reviewed by Juslisnah (2006) that video tape feedback has been pack aged in many shapes and forms over the past four decades many schools are using VTFB as a viable feedback method to students when learning how to conduct a proper history and perform appropriate physical exams slants on patients. The field of coaching has been utilizing VTFB for years to analyse opponents playing styles and tendencies as well as their own terms. Today's physical educators are taking what was so obvious for these team and utilizing VTFB within their own teaching areas, both indoor and outdoor, in order to improve learning and assessment of psychomotor tills relative physical education activity course work. Serving as an effective modelling condition to provide visual images and increase observation learning. Promoting valuable cognitive effort in the learning process basically, thinking before you act. Eventually, through repetition and positive self – review, the correct sequence of events can be performed with little cognitive effort.

Finally, the result of hypothesis five which stated that there will not be any significance in the role of ICT, learner, and teacher/instructor in teaching and learning process of sport skills in the department of physical health and recreation was not rejected. The researcher conclude that there will be any significance in the role of ICT, learner, and teacher/instructor in teaching and learning process of sport skills in the department of physical health and recreation. In support of the statement was the opinion of Jenkins (1999) that aside from ICT liberating and learning from the constraints of linear curriculum, the ICT provide a set of tools that help them with schoolwork and thus makes the teacher becomes the leader of the learning process, a helper, partner combining the traditional role of subject expert with of a manager. In consequence of the ensuring seminar online communication and learning through the ICT has the following roles for the teacher.

- I. Change in role from teacher to facilitators, manager and coaches who support learners.
- ii. Change in the content and scope of teaching
- lii. Change in the focus of control from the teacher to the learner
- Iv. Change in relation with learner.

Those changes in roles are somehow dramatic, hence led expert in the teaching profession to wonder aloud the implication of integrating technology into school and classroom is much more human than is technical.

## Conclusions

The finding of the study have shield light on the use of computer application technology and multimedia in teaching process of sports to optimize performance in department of physical, health and recreation.

So it can be concluded as follows: lack of information communication technology in the department will deprive the students of the opportunity of acquiring current physical knowledge and skills. The teacher ineffective use of information communication technology will not help the students to expose to modern method of teaching physical education, the teaching and learning situation is limited to classroom setting, it is not carried out in computer laboratory where television, projector, internet, media e.t.c. can be used to teach physical education classes. High cost of some textbook will make it unaffordable for some students.

## Recommendations

1. The government should help the school to build computer laboratory with adequate electricity supply in the department for the teaching and learning of physical education.
2. The school management should help to equip the department laboratory with computer system and human resources.
3. Both the teacher and students in the department of physical education should show interest in the teaching and learning of sport skills with the use of CAL and information.
4. Physical education teacher should give students difficult works like assignment, group-works, individual and group project with the use of ICT that will make them acquire more physical education knowledge.
5. It is also recommended that parent should provide computer system, application, phone that can make the student have access to the internet for further studies.

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