Perceived Influence of Information Communication Technology on Academic Performance of Social Studies Students in Secondary Schools in Port Harcourt Metropolis

ISAIAH Joy Kiri¹ & WAGBARA, Obinichi²

Rivers State University,
Nkpolu-Oroworukwo, Port Harcourt, Nigeria
08053407247/08039694018
howabinichi@yahoo.com

ABSTRACT
The study investigated the influence of information and communication technology on the academic performance of social studies student in secondary schools in Port Harcourt Metropolis Rivers State. Four research questions and two null hypotheses were formulated to guide the study; the study adopted a descriptive survey research design. The population of the study was 22,703 respondents, which consist of 2,019 teachers and 20,684 students of the 36 junior secondary schools in Obia-Akpor and Port Harcourt local government Area of River State. The sample size of 677 from 10 junior secondary schools which is 10% of the population was drawn using the simple random sampling technique. Data collection instrument for the study was the researchers developed questionnaires titled, “Influence of information and communication Technology on the Academic performance of social Studies students. Data collected were analyzed using the mean statistics to answer the research questions, while Z-test statistical tool was used to test the null hypothesis at 0.05 level of significance. Findings of the study revealed that information communication technology influence student’s academic performance in social studies, there is no significant difference between the mean scores of teachers and students. Further findings revealed that computer, projector, Television and Telecom-equipment influence academic performance of social studies students. Based on these findings, some recommendations were made. There is a need to maintain internet connection in secondary schools in Rivers State and connect more computers to the internet. The secondary school in Rivers State should then liberalize accessibility of internet and email in the institution in form of establishment of Information Communication Technology resource centres where all software can be accessed, students’ packages and all versions of technology. Students should also endeavour to acquire themselves what can be afforded or visit commercial ICT providers like internet café to access ICT facilities.

Keywords: Perceive, Influence, Information, Communication Technology On Academic Performance Social, Studies, Students, Secondary, Schools, In Metropolis,

INTRODUCTION
During the last two decades, higher educational institution has invested heavily in information and communication technology (ICT). ICT has had major impact in the Secondary school context, in organization teaching and learning methods. One puzzling question is the effective impact of these technologies on student achievement and on the returns of education. Many academic researchers have tried to answer this question at the theoretical and empirical levels. They have faced two main difficulties.
On one hand, student performance is hard to observe and there is still confusion about its definition. On the other hand, ICT is evolving technologies and their perceived influences are difficult to isolate from their environment.

There is no standard definition for student performance. The standard approach focuses on achievement and curricula, how students understand the lessons and obtain their degrees or their marks. However, a more extensive definition deals with competencies, skills and attitudes learned through the education experience. The narrow definition allows the observation of the outcomes of any change in higher education, while the more extensive definition needs a more complex strategy of observation and a focus on the labor market. The outcomes of education are mainly validated in the labor market.

The influence of ICT on learning is currently in relation to use of digital media, primarily computers and internet to facilitate teaching and learning. ICTs are the technologies used in conveying, manipulation and storage of data by electronic means, they provide an array of powerful tools that may help in transforming the present isolated teacher-centered and text-bound classrooms into rich, student-focused, interactive knowledge environments.

To meet these challenges, learning institutions must embrace the new technologies and appropriate ICT tools for learning. The relationship between the use of ICT and student performance in secondary education is not clear, and there are contradictory results in the literature. Earlier economic research has failed to provide a clear consensus concerning the influence on students’ achievement.

Starting from this point, the aims of this project are two-fold: first, we summarize the main findings of this extensive literature and second, we give two complementary explanations on the contradictory results. Our first explanation is that most of the literature has focused on direct influence of ICT while it is more appropriate to look at the indirect influence through the traditional channels. Since student performance is mainly explained by a student’s characteristics, educational environment and teachers’ characteristics, ICT may have an influence on these determinants and consequently the outcome of education. The differences observed in the performances of students are thus more related to the differentiated influence of ICT on the standard determinants.

The direct link between ICT use and students’ performance has been the focus of extensive literature during the last two decades. Several studies have tried to explain the role and the added value of these technologies in classrooms and on student’s performances. The first body of literature explored the impact of computer uses. Since the Internet revolution, there has been a shift in the literature that focuses more on the impact of online activities: use of Internet, use of educative online platforms, digital devices, use of blogs and wikis, etc.

Looking at the link between ICT and student performance seems nowadays a misunderstanding of the role and nature of these technologies. In fact, since ICT is general purpose technology (GPT), it needs to be specified in order to meet the needs expressed by students and to be adapted to the local context and constraints (Antonelli, 2013; Ben Youssef, 2016). A variety of models of usages can be identified leading to the same outcome. ICT brings widened possibilities for the learning processes that are independent from place and space. ICT also allows more flexible (asynchronous) and more personalized learning. It offers new methods of delivering secondary education. Taking advantage of these opportunities needs a profound change in the organization of the secondary education system.

**Statement of the Problem**

For many years, educational researchers have maintained an interest in the effective prediction of students’ academic performance at school. The prediction and explanation of academic performance and the examination of the factors relating to the academic performance are topics of greatest importance in different educational levels. Studies have shown that prior academic performance is an important predictor of performance at other levels of education. Similarly, cognitive ability was found as the strongest predictor of academic performance. However, some studies confirm that the correlation between cognitive ability and academic performance tends to decline as students’ progress in the educational system.
Thus, many researchers have emphasized the need to include non-cognitive factors such as personality, motivation, learning strategies and beliefs in investigations of individual differences in academic performance. In other words, contemporary researchers are interested in whether or not other individual differences than cognitive ones (for example; intelligence, cognitive ability) may be used to predict academic performance. The present study aims at determining the predictors of academic performance of student ICT teachers (formerly called computer teachers) with different learning styles.

The direct link between ICT use and students’ and academic performance has been the focus of extensive literature during the last two decades. Some of them help students with their learning by improving the communication between them and the instructors Valasidou and Bousiou, (2015). Leuven et al., (2014) stated that there is no evidence for a relationship between increased educational use of ICT and students’ performance. In fact, they find a consistently negative and marginally significant relationship between ICT use and some student performance measures. In support to these, some students may use ICT to increase their leisure time and have less time to study. Online gaming and increased communication channels do not necessarily mean increased performance. Based on the extended usage of ICTs in education the need appeared to unravel the myth that surrounds the use of information and communication technology (ICT) as an aid to teaching and learning, and the impact it has on students’ academic performance in Port Harcourt Metropolis, Rivers State.

Purpose of the Study

The study aims at determining the influence of information communication technology (ICT) on academic performance of social studies students as perceived in secondary schools in Rivers State.

The objectives of the study are specifically to;
1. To identify the extent computer influences academic performance of social studies students in secondary schools in Rivers State.
2. To identify the extent Projector influences academic performance of social studies students in secondary schools in Rivers State.
3. To identify the extent Television influences academic performance of social studies students in secondary school in River State.
4. To identify the extent Telecom-equipment influences the performance of social studies students in secondary schools in River State.
5. Recommend necessary solutions in solving the problems of information and communication technology (ICT) on the academic performance of social studies students in secondary schools in Rivers State.

Research Questions

The following research questions were formulated to guide the study
1. To what extent does Computer influence the academic performance of social studies students in secondary schools in Rivers State?
2. To what extent does Projector influence the academic performance of social studies students in secondary schools in Rivers State?
3. To what extent does Television influence the academic performance of social studies students in secondary schools in Rivers State?
4. To what extent does Telecom-equipment influence the performance of social studies students in secondary schools in River State?
5. What are the necessary solutions for solving the problems of ICT to the academic performance of students in secondary schools in Rivers State?

Hypotheses

The hypothesis of this study are stated in null forms and tested at 0.5 level of significance.
1. There is no significant difference between the mean perspective of teachers and students on the extent computer influence the academic performance of social studies students in secondary schools in Rivers State.
2. There is no significant difference between the mean perspectives of social studies students on the extent projector influence the academic performance of students in secondary schools in Rivers State.

3. There is no significant difference between the mean perspective of social studies students on the extent Television influence academic performance of social studies students in Rivers State.

4. There is no significant difference between the mean perspectives of social studies students on the extent Telecom-equipment influence academic performance of students in Rivers State.

REVIEW OF RELATED LITERATURE
Theoretical Framework
Leavitt’s, Kovacic et al., (2014) Extended model Technological Determinism
Technological determinism is a reductionist theory that presumes that the technological process defines the social progress. Technological determinism regards technology as the basis of society in the past, present and future. New technologies transform society on all levels: institutional, social and on the individual level.

However, such a definition contains the view, which assumes that technology is more or less independent from social matters. Here we speak of so-called hard determinism. On the other side, soft determinism appeared as a response to the strict principles of hard determinism, and it emphasizes the increased roles of inclusion and selection by an individual. According to this softer view, technology is placed within complex social, economic, political and cultural networks. Even within soft determinism, technology is still the leading factor of social studies development, but it allows for an individual to adopt a decision regarding the predicted outcomes of a specific situation. It is interesting that within social studies research dealing with modern technologies such as the internet, computer, projector, we are witnessing the appearance of tendencies towards explaining the relationship between information and communication technology and society in a relatively deterministic manner. If we place technological determinism within the context of the organization, the technology in an organization is the factor that directs the transformation of organisations and their elements. Socio-Technical Theory Socio-Technical Theory developed in the mid 20th century when researchers examining the perceive influence of technologies on academic performance and productivity of secondary school students across some cases where employees resisted the introduction of new technologies through not achieving expected results and so on. Therefore, supported by sociological, psychological and anthropological sciences, the researchers established that the solution to such problems lies in combining the technological and sociological system. Socio-Technical Theory regards an organization as a socio-technical system built from two correlated systems – social and technical. The technical system is composed of the processes, tasks and technologies needed to transform input into output, whereas the social system is composed of people their believes, skills, values, knowledge, needs, the relationships between them, remuneration systems and authority structures. Every transformation of an organization as a system must consider these two sub-systems. A return to the classic socio-technical principles provides an environment for successful organizational changes following the implementation of new technologies. As can be seen from Leavitt’s view of organization and Socio-Technical Theory is heavily intertwined, which makes Leavitt one of the founders of this theory. Critical Analysis of Technological Determinism
In accordance with technological determinism, technology directs the transformation of public sector organisations, which means that technology or its potential cause changes in processes, structure, people and organizational culture. These elements are separate and all they allow is a free choice regarding the use of potentials, which are enabled by modern ICT. In this case, technology is an independent variable, whereas processes, structures, people and culture are dependent variables. In that sense, ICT in e-government period is seen as a tool for the reform and influence academic performance of secondary school students. Jain e.g. analyses social studies from two perspectives using the objective of Weber’s bureaucratic model; first, as a tool for the “reform” of ICT and second, that unsuccessful implementation of ICT is a result of learning. ICT as a tool of social studies is also defined by the OECD, which claims
that ICT is a key factor in the reform of government and that ICTs support this reform in many areas. Bellamy and Taylor also justify such perspective by claiming that government can be transformed on the basis of technology, because information technology enables a new flow of information that endangers old norms and abilities. However, some highly cited authors strongly oppose these “optimistic” perspectives regarding the reform potential of technology and support their skepticism through numerous studies and empirical research that was conducted in 1980s and 1990s in the US. Furthermore, within the last decade, there emerge authors who establish that the transformational function of technology is not deterministic, because in practice equal inputs often give completely different results in various environments within the development of social studies. It can be said that the Theory of Technological Determinism is too one-dimensional and one-sided and does not provide enough formal framework for examining the influence of ICT tools regarding educational changes.

**Conceptual Framework**

**Concept of Information Communication Technology (ICT)**

ICT is an augmented term for information and communication technology (ICT) which accentuates on the role of integrated communications Murray, (2011) and the integration of telecommunications (telephone lines and wireless signals), computers and other necessary enterprise software Foldoc, (2008). Singh (2013) defines ICT as a collection of technical devices and resources which are used to transmit, store and manage information; however, the utilization of ICT in the instructive process has been partitioned into two general classifications: ICT for education and ICT in education. ICT for education suggests the development of ICT particularly for teaching and learning purposes and ICT in education includes the adoption of general parts of ICT in the instructional process Okoro and Ekpo, (2016). ICT in education the emergence of ICT has transformed the existence and activities of contemporary man particularly in the setting of globalization Evey, Emmanuel, Joseph, Denis and Asinde, (2010). In recent times, there has been an extraordinary advocacy both nationally and internationally for the use of ICT in instructional and learning process Okoro and Ekpo, (2016). The educational field has been influenced by ICT, which has explicitly influenced instructional process and research. Davis and Tearle, (2014) as cited in Yusuf, (2015) believe that ICT has the strength to speed up, improve and extend aptitude reforms as it has the capacity to boost teaching by inspiring and engaging learners, and help schools reform by assisting schools in understanding financial and functional practices. Ashley (2016) reiterates that technology helps educators in preparing students for the real world setting and stresses that as our countries turn out to be progressively more technology dependent, it becomes significantly more essential that to be good citizens, students must figure out how to be well informed about ICT. The utilization of ICT in teaching is a pertinent and practical method for providing education to learners that will enrich them with the required abilities with regards to the world of work.

It offers a totally new and advanced learning environment for learners; consequently they acquire various aptitude sets in order to be fruitful and successful. Critical thinking, research and appraisal aptitudes are developing significantly as learners have expanding dimensions of information from a number of sources to deal with. The incorporation of ICT in instructional process is believed as a medium in which a number of methodologies and pedagogical theories might be implemented; however, ICT as a teaching aid is more difficult and multifaceted as it needs positive attitude from the educators Salehi and Salehi, (2012). ICT in schools gives a chance to instructors to change their practices by furnishing them with enhanced educational content and more powerful educating and learning techniques.

ICT enhances the instructional process through the arrangement of interactive instructive materials that increase learner inspiration and encourage easy attainment of fundamental aptitudes. Utilization of different multimedia tools such as Television, recordings, videos and computers applications provides more challenging and attractive learning atmosphere for learners of any age Haddad and Jurich, (2014). Furthermore, it enlarges the flexibility of communicating education with the aim that learners can get information on every occasion and from anyplace. It may affect the methodologies through which the learners are educated and how they learn, as the instructional processes are learner driven and they will
therefore be prepared for effective learning and the quality of learning will be improved Moore and Kearsley, (2013). One more advantage of introducing ICT in schools is that the learners who do not have accessibility at homes may have the opportunity to utilize them in schools. It can be utilized as a learning device to give instructions to enhance the students learning and retention Aslan and Dogdu, (2013). This technology motivates and conveys dynamism to the classroom and reduces time in learning. ICT can upgrade the nature of instruction by intensifying learner inspiration and instructor training, which are the establishments of higher order thinking aptitudes Aslan and Dogdu, (2013). Basically, ICT has changed the learning behavior where it has entered the classrooms to be a part of educating and learning process Agrahari and Singh, (2013). It is considered to be the most effective medium of mass communication, which has altered the instructional process in many ways. Poulter and Basford (2013), states that ICT is an instructing device and its potential for enhancing the quality and principles of students’ education is noteworthy. The ICT program is more viable than the conventional teaching approach in term of students’ achievement scores.

Teaching through ICT For effective integration of ICT in instructional process, it can be inferred that the factors that teachers’ attitudes, ICT competence, computer self-efficacy, professional development, teaching experience, education level, technical support, accessibility, leadership support, pressure to use technology, government policy regarding ICT education and technological characteristics positively affect teachers’ and administrators’ use of ICT in education Ali Haolader and Muhammad, (2013). Andoh (2012) conducted a study to review literature regarding factors influencing integration of ICT and found three levels of factors: (a) teacher-level, (b) school-level, and (c) system-level barriers. Teacher level hindrances comprise teachers’ incompetency of ICT use, lack of teacher self-confidence, lack of teacher professional and pedagogical training and lack of differentiated training programs. School-level hindrances include lack of specially designed infrastructure for ICT use, old or ineffectively maintenance of equipment, absence of appropriate instructive programming and software; poor accessibility to ICT, poor project related understanding, and lack of ICT mainstreaming into school’s policy. System level hindrances embrace unbending structure of conventional education systems, traditional appraisal, obstructive curricula and limited organizational structure. Knowing the degree to which these hindrances influence people and organizations may help in deciding how to handle them Andoh, (2012).

Safdar, Yousuf, Parveen and Behlol (2011) conducted an experimental study to identify the effectiveness of ICT in teaching social studies at secondary level and they found that information and communication technology is very effective in teaching social studies as compared to traditional teaching method. Ziden, Ismail, Spian, and Kumutha, (2011) carried out an experimental study and concluded that ICT has a positive effect on the academic accomplishment of students in science subjects. This study additionally endeavored to decide the distinctions of accomplishment between the female and male participants. The study found that male students showed better performance as compared to female students. Carrillo, Onofa and Ponce (2010) carried out an experimental study on information communication technology and students’ achievement and they found that ICT has a positive effect on the achievement scores in social studies test, but failed to increase achievement scores in language test. Badeleh and Sheela (2011) inferred that generally to study chemistry, component based achievement, retention of learning and comprehension, ICT was more successful than the laboratory training model of teaching. Avinash and Shailja (2013) discovered that the ICT program is more compelling and effective than the conventional teaching approach in terms of students’ achievement scores in social studies.

Information and Communication technology (ICT) is a term that encompasses all forms of technology used to create, store, exchange, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived). It’s a convenient term for including both telephony and computer technology in the same word. It is the technology that is driving what has often been called the information revolution. Rouse, (2005).

ICT refers to anything related to computing technology, such as networking, hardware, software, the Internet, or the people that work with these technologies. techterms.com, (2014). Information
communication technology (ICT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as Projector, television and telephones. Several industries are associated with information technology, such as computer hardware, software, electronics, semiconductors, internet, telecom equipment, e-commerce and computer services. Wikipedia,(2014).

According to Association for Computing Machinery (ACM) (2008) Information Technology (ICT) in its broadest sense encompasses all aspects of computing technology. ICT, as an academic discipline, is concerned with issues related to advocating for users and meeting their needs within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies. According Merriam Webster Dictionary (2011) ICT is the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data. Information technology (ICT) is a Set of tools, processes, and methodologies (such as coding/programming, data communications, data conversion, storage and retrieval, systems analysis and design, systems control) and associated equipment employed to collect, process, and present information. In broad terms, ICT also includes office automation, multimedia, and telecommunications. Ozoji in Jimoh (2007) defined ICT as the handling and processing of information (texts, images, graphs, instruction etc) for use, by means of electronic and communication devices such as computers, cameras, telephone. Ofodu (2007) also refer to ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. Software was developed and became more widely available during the 1980s. Most of the early software was “subject specific” mainly of the Computer Assisted Learning (CAL) type which social studies departments in secondary schools made use of. Later in the 1980s general purpose, generic or content-free software began to be more commonplace, which could be used in a sociological context such as databases and spreadsheets to handle and analyze data and word processing software to present information. An early and significant work by Shepherd, Cooper and Walker published in 1980 was written for and organised into three distinct parts to meet the needs of several types of reader. These are identified as the uncommitted teacher who knows nothing about computers or the role they can play in social studies teaching, for the teacher of social studies who is already interested in using the computer in his work, but doesn’t know where to begin, and for the teacher who is at present using the computer, but wants to know more about what can be done with it in social studies Shepherd et.al., (2000). These three broad categories of teachers still exist today, and in the questionnaire I used as part of my research I asked teachers to identify their ICT capability from Beginner, Intermediate or Advanced. Indeed the successful use of the machine requires a partnership to be struck between this relatively new technology and other more traditional teaching methods. Used in a vacuum, or as a complete substitute for a carefully thought-out curriculum, computer methods will be both disappointing and unrewarding. We must make it clear from the outset that the computer is not a substitute for teacher involvement. Shepherd et.al., (2000).

Performance of Students in Social Studies
The use of technology in teacher education to improve classroom efficiency have been supported by several scholars among which are Chickening and Erhmann (2004) Freeman (2006), Leat and McAleavy (2008), Hepp et.al., (2004). According to Kozma et al (2004) those advocating for the use of technology, describe a range of potential impacts that new technologies have when applied to education. According to Leuhrman and Bull et-al (2007) technology application in classroom may be in the area of computer assisted instruction under this, Social studies teachers may use the new technologies for word processing, grading, record keeping, web page production and lectures. There are numerous and good prospects for the use of ICT in teaching and learning in secondary schools in Nigeria. The following major areas suggest the range of applications that computer can serve lecturers/teachers and learners in Nigeria. First, computer can enhance educational efficiency. The efficiency in teaching various subjects could be improved. For instance, many higher institutions lecturers
are already teaching large classes of students. In this situation, students no longer receive the much desired individual assistance. Furthermore, English language is taught and learned as a second language in Nigeria and many teachers of English are weak. It is possible to use carefully prepared computer programs to ensure that learners are accurately and systematically instructed. Also, the computer can enhance problem-solving skills of the learners by focussing on thinking skills especially in subject such as Social Studies or Geography.

Second, computers can serve administrative functions. They can replace the laborious exercise of filing papers in filing cabinets and shelves where records accumulate dust over a long period of time. Another administrative application of the computers is their use for budget planning, accounting for expenditure, writing correspondences and reports, assigning students to classes, reporting students’ progress and testing students and scoring tests which help to reduce paper work. It is true that many of the tasks above are not effectively and efficiently done in higher institutions in Nigeria.

Third, computers can be used for individualized learning in higher institutions in Nigeria. Due to large classes and differences in individual learning style and pace, microcomputers will enable the student to progress at his or her own pace and receive continual evaluation feedback and corrections for errors made. In this way, computers allow the development of partner-like interactive and individualized relations with the user. Computers play the role of the tutor and present the learner with a variety of contents and symbolic modes.

Fourth, computers can change current pedagogical practices in Tertiary Institutions in Nigeria, which depended heavily on the traditional lecture method. It is universally accepted that computers allow more independent exploration, more personally tailored activities, more teamwork, and more significantly, less didactic instruction. The role of the teacher, therefore, changes from information dispenser to that of information manager, from authoritative

Fifthly, computers will offer the Nigeria lecturers improvement in the techniques of research. The cumbersome exercise of searching by hand through the library’s card catalogue or periodical indexes can be made easier by typing few key worlds pertinent to the research topic into a computer and the researcher can receive extensive list of related sources of articles in books and journals in just a matter of minutes.

Video/ Teleconferencing

According to Chika (2005) electronic conferencing system has been developed to permit many participants to engage in one or two way communications without actually having to travel to a common site. Nwachukwu (2004) defined it as a meeting of geographically apart to meet and work together. It is recognized today as one of the most important communication tools for organizations worldwide because it enables people to meet and talk via live video connection no matter where they are in the world. This system is designed to eliminate the travel expenses and discomforts of valuable time, and incurred accommodation costs that are inherent in bringing participants physically together for a meeting. However, researchers revealed that video conferencing is useful when participants all know themselves and when the meeting should last for short time.

Chisenga (2006) described video conferencing as an activity where user’s converse with others in real time, “speaking” through their keyboard is and “hearing” through the screen. To enhance this, Nwachukwu (2006) said the meetings are conducted in rooms equipped with computers, television camera and receivers with the participants in one room viewing those in other rooms via a television screen. Each participant must be equipped with video conferencing equipments including a screen, video camera and microphone. The connection is made over a phone line using the H.320 standard. The group can communicate in real time even if they are thousands of miles away from each other. This type of meeting is becoming very popular because it saves time travel and money to talk to other video conferencing system worldwide.
Video conferencing also transmits graphics through cameras connected to computer in which the parties involved see themselves as they speak to one another. What makes video-conferencing so attractive is sharing and discussing with colleagues regardless of their location. The secretary has acquired the skill of video conferencing and this equipment made available will reduce costs involved in travelling and also manage his time better. The time saved by not travelling to attend meetings can be applied in other areas of work to increase work output. Video conferencing is invaluable to secretaries as no business is lost due to poor communications or difficulties of working at a distance.

**Roles information Communication Technology (ICT) in Social Studies Students**

There is so much that students can do with the information communication technology (ICT). Not only can they communicate social studies ideas, they can gain from others knowledge and experiences, participate on chat scheme of social studies. The likely roles can be conceived in:

1. Having profound effect on the way students think about uses information technologies in their learning prospects.
2. Improve the ways of learning in new learning fashions.
3. Expand the ability and skill of applying their learning in real situation’
4. Working in groups for cooperative and collaborative learning.
5. Developing self-learning habits at their own pace d time.
6. Develop inquiry-learning habits.
7. Use right information at right time to achieve right objective in social studies setting.
8. Review and explore qualitative data as related to social studies.
9. Exchange learning experiences and information with other student teachers living anywhere in the world. The implication is that information technologies facilitates student in their learning process.

Other roles can be conceived in:

a. Class work scheduling around the students.
b. Students may have the option to select learning materials that meets their level of knowledge and interest.
c. Students can study anywhere they have access to a computer and information communication technology (ICT) connections.
d. Self-paced learning modules allow students to work at their own pace.
e. Flexibility to join discussions in the bulletin board threads discussion areas at any hour, or visit with classmates and instructors remotely in chat rooms.
f. Instructors and students both report of e-learning foster more interaction among students and instructors than in large lecture courses.
g. E-learning can accommodate different styles and facilitate learning through a variety of activities, develop knowledge of the information communication technology (ICT) and computers skills that will help learners throughout their lives arid careers.
i. Successfully completing online or computer based courses builds self knowledge and self confidence and encourages student to take responsibility for their learning.

Learners can test out of or skill over material already mastered and concentrates efforts in mastering areas containing new information and skills.

Information communication technology (ICT) delivery of education provides many roles to both the student and the educational institutions. Accordingly, some of the roles of information communication technology (ICT) based courses to the student include;

a. Flexibility to pursue education personally convenient times.
b. Ability to take time to compose thoughts contributed to class discussions on newsgroups or list servers (asynchronous communication).
c. Ability to interact with classmates in different locations using real time text, audio or video (synchronous communication).
d. Reduction or elimination of travel cost to attend lectures
e. Wider range of students in a class {regional, national or global participation} resulting in a wider range of opinions and a class discussions.
f. Ability to progress in the course material at the students own pace {self-paced learning} and in order of their personal need (non-linear learning).

**Benefits of Information Communication Technology (ICT) to Social Studies Students**
The following are the benefits of Using ICT in teaching Social Studies:
1. Sociology Information Systems (SIS) simplify many sociological concepts and present large amounts of non-sequentially related data in simple and readily accessible formats, allowing pupils to concentrate on interpreting and analyzing data (West, 1999)
2. Using SIS software enhances spatial awareness and decision-making skills (Audet and Paris, 1997; Taylor, 2003; West, 1999)
3. Using simulations and modeling tools can lead to enhanced understanding of sociological topics such as erosion and agriculture (Cox and Abbott, 2003)
4. ICT enables higher level thinking skills, especially for pupils using SIS (West, 1999)
5. Using digital photography in a classroom mapping activity helps develop recall, reflection and self assessment skills (Storey, 2002)
6. Interactive ICT such as email enables the exploration of a sense of place, through communicating with people as well as through pictorial features (Storey, 2002)
7. Using emails alongside postcards to make comparisons of places helps pupils to gain a better appreciation of other cultures (Storey, 2002)

**Benefits for Teachers**
The following are the benefits of Using ICT in teaching Social Studies:
1. Using SIS can significantly enhance social studies teaching and learning environments (Audet and Paris, 1997).
2. Digital photography allows teachers to record students work undertaken on field trips and other learning outcomes not readily recorded in traditional ways (Storey, 2002)
3. ICT enables teachers to engage and motivate students about sociological concepts to a greater degree (Halocha, 2002; Taylor, 2003)
4. Using SIS software to produce and manipulate maps at a range of scales can save lesson time and give better quality results (Taylor, 2003)
5. The internet increases access to authentic sociological data and information sources (Taylor, 2003)
6. SIS software can enable teachers to focus more closely on teaching sociological skills, in addition to developing a sense of location and place (Keiper, 1999)

**Limitations of Using Information and Communications Technology (ICT) for Studying of Social Studies.**
However, not all problems are suited for information communication technology (ICT) based education. Below are some problems, difficulties and limitations of information and communication technology (ICT) based courses for the students of social studies.
a. Lack of motivation can lead students to drop out: this is a case whereby the students are exposed in the use of information and communication technology (ICT) but cannot be skilful because of lack of personal computer for frequent practices.
b. The information and communication technology (ICT) methods of communication (mail and newsgroups) maybe intimidating or awkward to use for some students. Some students even see the use of information communication technology (ICT) as boring, uninteresting and unattractive for their learning activities.
Students may not be able to express themselves as well using the computer based communication methods as they would in either direct conversation with their professor or in classroom discussions. As a result, not all questions may be asked by the student using computer mediated communications.

d. Cost computer equipment and communications infrastructure may limit the number of students that can afford information communication technology (ICT) based course presently, the economic situation harsh hence affecting the possibilities of affording a computer by the students.

e. Students will have a lack of technical support in their homes to use the software tools needed in the course. Poor technical support or tutorial help can lead to incorrect usage of software tools needed to do assignments.

METHODOLOGY
Design of the Study
The study employed a survey research design. The research design adopted in this study was survey research design that is aimed at examining the influence of ICT on academic performance of Social Studies Students in Port Harcourt Metropolis, Rivers State.

Population of the Study
The population of the study consist of all the 36 public junior secondary schools, students and teachers in Obia-Akpor and Port Harcourt metropolis. Statistical information from the state ministry of education and the library as at August 2018 puts the figure of the junior secondary schools at 22,703 respondents of which 2,019 are teachers and 20,684 are students.

Sample and Sampling Technique
A sample size of 677 respondents was used for the study, which consist of 76 teachers and 601 students, which is 10% of the population. Simple random sampling technique was used to select samples of students and teachers from 10 junior public secondary schools in Obia-Akpor and Port Harcourt Local Government Areas of Rivers State.

Research Instrument
The instrument used for data collection was questionnaire titled @ influence of information and communication technology (ICT) on the Academic performance of students in social studies (ICTAPASS). The questionnaire comprised of two sections: section (A and B) respectively. Section A. elicited information on the personal data of the respondents. While, section B with items aimed at providing relevant information in respect in the research questions. The questionnaire items were designed on a four-point Likert type rating scale strongly Agree (SA) rated fur pints. Agree (A) rated 3 pints. Disagree (DA) rated 2 pints and strongly disagree (SD) rated 1 point.

Method of Data Analysis
Data collected from the respondents were statistically analyzed using the mean statistics to answer the research questions. The decision to accept any item is that if the mean score is 2.50 and above the item would be regarded as agreed but would be regarded as disagreed if the mean score falls below 2.50. The Z-test statistic was used to test the null hypothesis at 0.05 level of significance.

The null hypotheses were accepted if the Z-calculated was less than the Z-critical at 0.05 level of significance.
RESULTS

Research question 1: To what extent does computer influence the academic performance of students in social studies in secondary schools in River State?

Table 1: Computer influence on academic performance of students in social studies

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Teachers</th>
<th>Students</th>
<th>Mean Set</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Computer helps students acquire more skills to improve their academic performance.</td>
<td>N=76</td>
<td>N=601</td>
<td>X1 X2</td>
<td>Agreed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.98</td>
<td>2.87</td>
<td>2.93</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>It provides academic support for new teachers and students.</td>
<td>2.86</td>
<td>2.94</td>
<td>2.90</td>
<td>Agreed</td>
</tr>
<tr>
<td>3.</td>
<td>It enhances interpersonal relationship between the Teachers and students.</td>
<td>2.99</td>
<td>2.81</td>
<td>2.90</td>
<td>Agreed</td>
</tr>
<tr>
<td>4.</td>
<td>It promotes innovation and creativity among students</td>
<td>2.99</td>
<td>2.82</td>
<td>2.91</td>
<td>Agreed</td>
</tr>
<tr>
<td>5.</td>
<td>It provides good teaching practice to the students and teachers</td>
<td>2.96</td>
<td>2.85</td>
<td>2.91</td>
<td>Agreed</td>
</tr>
<tr>
<td></td>
<td><strong>Aggregate mean</strong></td>
<td><strong>2.96</strong></td>
<td><strong>2.85</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In table 1 data shows that items number 1-7 had mean set scores ranging between 2.90 an 2.93 which were above the criterion mean 2.50 and therefore indicates that the respondents accepted that computer influence academic performance of students in social studies. This means that computer helps students acquire more skills to improve their academic performance, it provides academic support for new teachers and students, it enhances interpersonal relationship between the students and students. It promotes innovation and creativity among students and it provides a good teaching practice to the students and teachers.

Research question 2: To what extent does Projector influence academic performance of social studies students in secondary schools in Rivers State?

Table 2: Projector influence on academic performance of social studies students

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Teachers</th>
<th>Students</th>
<th>Mean Set</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Students who use projector are exposed in class</td>
<td>N=76</td>
<td>N=601</td>
<td>X1 x2</td>
<td>Agreed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.99</td>
<td>2.87</td>
<td>2.93</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Projector educative programmes helps students to participate effectively in social studies</td>
<td>2.96</td>
<td>2.89</td>
<td>2.92</td>
<td>Agreed</td>
</tr>
<tr>
<td>8.</td>
<td>Projector is a good source of ICT facility for students studies</td>
<td>2.94</td>
<td>2.87</td>
<td>2.91</td>
<td>Agreed</td>
</tr>
<tr>
<td>9.</td>
<td>Projector help students to be creative in classroom</td>
<td>2.94</td>
<td>2.87</td>
<td>2.91</td>
<td>Agreed</td>
</tr>
<tr>
<td>10.</td>
<td>Projector helps students to remember what they are thought</td>
<td>2.91</td>
<td>2.85</td>
<td>2.88</td>
<td>Agreed</td>
</tr>
<tr>
<td></td>
<td><strong>Aggregate mean</strong></td>
<td><strong>2.96</strong></td>
<td><strong>2.81</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data in table 2 reveals that items number 6-10 had, mean set scores ranging between 2.73 which is the lowest mean score and 2.94 the highest mean score which is above the criterion men of 2.50 arid which implies that the respondents accepted that all the items indicate that projector influence academic performance of social studies students. The items include;
Students who use projector are exposed in class, twitter educative programmes helps students to participate effectively in social studies. projector is a good source of ICT facility for students studies, projector help students to be creative in classroom and projector helps students to remember what they are thought.

Research question 3: To what extent does Television influence academic performance of social studies students in secondary school in Rivers State?

Table 3: Television influence on academic performance of social studies students

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Teachers</th>
<th>Students</th>
<th>Mean Set</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Television helps as an ICT facility helps to make classes interesting.</td>
<td>N=76</td>
<td>N=601</td>
<td>3.04</td>
<td>2.83</td>
</tr>
<tr>
<td>12</td>
<td>Television helps in image distribution and clear for easy view.</td>
<td>2.96</td>
<td>2.79</td>
<td>2.90</td>
<td>Agreed</td>
</tr>
<tr>
<td>13</td>
<td>The uses of Television by teachers in teaching social studies help students to participate effectively in classroom.</td>
<td>3.03</td>
<td>2.83</td>
<td>2.93</td>
<td>Agreed</td>
</tr>
<tr>
<td>14</td>
<td>Students who learn with Television don’t forget and always remember what they are taught.</td>
<td>2.99</td>
<td>2.92</td>
<td>2.296</td>
<td>Agreed</td>
</tr>
<tr>
<td>15</td>
<td>The use of Television makes sharing teachers work easy in school.</td>
<td>3.06</td>
<td>2.86</td>
<td>2.99</td>
<td>Agreed</td>
</tr>
</tbody>
</table>

Table 3 reveals that the mean set scores in items 11-15, range between 2.90 which is the lowest mean score and 3.00 the highest mean score. These were all above the criterion mean of 2.50. this means that the respondents all agreed Television influence on academic of students in social studies, that Television helps as an ICT facility helps to make computer classes interesting Television helps in distribution of images and clear for view, the uses of Television by teachers in teaching social studies help students to participate effectively in classroom, students who use Television don’t forget and always remember what are taught and the use of Television in teaching makes sharing of teachers work easy in school.
Research question 4: To what extent does Telecom-equipment influence academic performance of social studies students in secondary schools in Rivers state?

Table 4: Telecom-equipment influence on academic performance of social studies students.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Teachers</th>
<th>Students</th>
<th>Mean Set</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Telecom-equipment helps teachers to make research before teaching student.</td>
<td>N=76</td>
<td>N=601</td>
<td>X 2.98</td>
<td>2.87</td>
</tr>
<tr>
<td>17</td>
<td>It helps students in doing their assignment on social studies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>It helps students to make research and ask questions in classroom.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>It helps students to be creative through the available tools.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Telecom-equipment helps students spend less on textbooks.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aggregate: 2.96 2.85

In table 4 data shows that items number 16-20 had mean set scores ranging between 2.90 and 2.93 which were above the criterion mean of 2.50 and therefore indicates that the respondents accepted that telecom-equipment influence academic performance of students in social studies. This means that telecom-equipment helps teachers to make research before teaching students, it helps students in doing their assignment on social studies, it helps students to make research and ask questions in classroom. It helps students to be creative through the available tools and internet helps students spend less on textbooks.

Text of Hypotheses

Hypothesis 1: There is no significant difference between the perception of teachers and students on the extent Computer influence academic performance of social studies students in secondary schools in Rivers State.

Table 5: Z-test analysis of the different between the mean scores of teachers and students on Computer influence on academic performance of social studies students.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>X̄</th>
<th>SD</th>
<th>DF</th>
<th>Z-CAL</th>
<th>Z-Critical</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>76</td>
<td>2.96</td>
<td>1.72</td>
<td></td>
<td></td>
<td></td>
<td>Not Significant</td>
</tr>
<tr>
<td>Students</td>
<td>601</td>
<td>2.85</td>
<td>1.68</td>
<td>67.5</td>
<td>0.8</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Data on table 5 shows that the z-calculated value of 0.8 is less the z-critical value of 1.96 at 599 degrees of freedom and 0.05 significance level. Hence the null hypotheses is accepted meaning that there is no significant different between the mean scores of teacher and students on Computer influence on academic performance of students in social studies in secondary schools in Rivers State.
Hypothesis 2: There is no significant difference between the perception of female and male student on the extent Projector influence academic performance of social studies students in secondary schools in Rivers State.

Table 6: Z-test analysis of difference between the mean scores of teachers and students on projector influence on academic performance of social studies students.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>$\bar{X}$</th>
<th>SD</th>
<th>DF</th>
<th>Z-CAL</th>
<th>Z-Critical</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>76</td>
<td>2.96</td>
<td>1.72</td>
<td></td>
<td></td>
<td></td>
<td>Not significant</td>
</tr>
<tr>
<td>Students</td>
<td>601</td>
<td>2.85</td>
<td>1.68</td>
<td>67.5</td>
<td>0.8</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Table 6 reveals that the z-calculated value of 0.77 is less than the critical value of 1.96 at 599 degree of freedom and 0.05 significance level. Therefore the null hypotheses is accepted, indicating that there is no significant different between the mean scores of teachers and students on projector influence on academic of social studies students in secondary schools in Rivers State.

Hypotheses 3: There is no significant difference between the perception of social studies students on the extent Television influence on academic performance of social studies in junior secondary schools in Rivers State.

Table 7: Z-test analysis of difference between the mean scores of teachers and students on Television influence on academic performance of social studies students.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>$\bar{X}$</th>
<th>SD</th>
<th>DF</th>
<th>Z-CAL</th>
<th>Z-Critical</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>76</td>
<td>2.96</td>
<td>1.72</td>
<td></td>
<td></td>
<td></td>
<td>Not Significant</td>
</tr>
<tr>
<td>Students</td>
<td>601</td>
<td>2.85</td>
<td>1.68</td>
<td>675</td>
<td>0.8</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Table 7 reveals that the z-calculated value of 0.77 is less than the critical value of 1.96 at 599 degree of freedom and 0.05 significance level. Therefore the null hypotheses is accepted, indicating that there is no significant different between the mean scores of teachers and students on Television influence on academic of social studies students in secondary schools in Rivers State.

Hypotheses 4: There is no significant difference between the perceptions of social studies students on the extent Tele-com equipments influence on academic performance of social studies in junior secondary schools in Rivers State.

Table 8: Z-test analysis of difference between the mean scores of teachers and students on Tele-com equipment influence on academic performance of social studies students.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>$\bar{X}$</th>
<th>SD</th>
<th>DF</th>
<th>Z-CAL</th>
<th>Z-Critical</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>76</td>
<td>2.96</td>
<td>1.72</td>
<td></td>
<td></td>
<td></td>
<td>Not Significant</td>
</tr>
<tr>
<td>Students</td>
<td>601</td>
<td>2.85</td>
<td>1.68</td>
<td>675</td>
<td>0.8</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
Table 8 reveals that the z-calculated value of 0.77 is less than the critical value of 1.96 at 599 degree of freedom and 0.05 significance level. Therefore the null hypotheses is accepted, indicating that there is no significant difference between the mean scores of teachers and students on Tele-com equipment influence on academic of social studies students in secondary schools in Rivers State.

**DISCUSSION OF FINDINGS**

The discussion of findings of the study and their attendant shows that there is significant different in the influence of information communication technology (ICT) to the educational system in junior secondary schools in Obia-Akpor and Port Harcourt metropolis.

The result of the analysis of research question 1 revealed that items number 1-7 had mean set scores ranging between 2.90 and 2.93 which were above the criterion mean of 2.50 and therefore indicates that the respondents accepted that Computer influence academic of social studies students. This means that Computer helps students acquire more skills to improve their academic performance, it provides academic support for new teachers and students, it enhances interpersonal relationship between the teachers and the students, it promotes innovation and creativity among students and it provides a good teaching practice to the students and teachers. This is in line with, Mbwesa (2010) the availability of ICT resources can enhance learning by making education less dependent on differing teacher quality and by making education available at home throughout the day. Furthermore, Riel (2012) stressed that the availability and use of ICT can help students exploit enormous possibilities for acquiring information for schooling purposes and can increase learning through communication.

The result of the analysis of research question 2 revealed that items 6-10 had mean set scores ranging between 2.73 which is the lowest mean score and 2.94 the highest mean score which is above the criterion mean of 2.50 and which implies that the respondents accepted that all the items indicate that projector influence academic performance of social studies students. This is in line with Berger (2003); computers raise the potential to equip students with higher order skills such as inquiry, reasoning, problem solving and decision making abilities, critical and creative thinking and learning how to learn. The items include; Students who use projector are exposed in class, projector education programmes helps students to participate effectively in social studies. Projector is a good source of ICT facility for student’s studies.

The result of analysis of research question 3 revealed that the mean set scores in items 11-15, range between 2.90 which is the lowest mean score and 3.00 the highest mean score. These were all above the criterion mean of 2.50, this means that the respondents all agreed Television influence the academic performance of students in social studies, that Television helps as an ICT facility to makes learning interesting. Television share bold and clear images for easy view, the uses of Television by teachers in teaching social studies helps students to participate effectively in classroom.

The test of hypotheses on table 4.5 indicates that the z-calculated value of 0.8 is the z-critical value, of 1.96 at 675 degrees of freedom and 0.05 significance level. Hence the null hypothesis is accepted meaning that there is no significant difference between the mean scores of teachers and students on influence of academic performance of social studies students in social in secondary schools in Rivers State.

According to UNESCO (2002), the safe way to bring computers to institutions is teaching students skills of how to use word processors, projectors, spread sheets, data bases and graphic tools. These are the productive tools required later on in life.

The result of analysis of research question 4 revealed that items number 16-20 had mean set scores ranging between 2.90 and 2.93 which were above the criterion mean of 2.50 and therefore that the respondents accepted that telecom-equipment influence academic performance of social studies students. This mean the telecom-equipment helps teachers to make research before teaching students, it helps students in doing their assignment on social studies, it helps students to make research and ask questions in classrooms, it helps students to be creative through the available tools and internet helps students to spend less on textbooks. Like Tearle (2003). Drenoyianni (2004) agrees that variations in the ICT skills
base of individuals can impede the use of ICT for teaching and learning. Drenoyianni (2004) advocates a phased approach where students are required complete a mandatory initial introduction to ICT and this in turn leads on to training in the more complex ICT packages in this way he introduction to ICT is a preparatory stage allowing students to build their ICT confidence where they later learn to utilize ICT in the learning context.

The test of hypotheses table 4.6 indicates that the z-calculated value of 0.77 is less than the critical value of 1.96 at 675 degrees of freedom and 0.05 significance level. Therefore the null hypothesis is accepted, indicating that there is no significant difference between the mean scores of teachers and students on the influence of academic performance of social students student’s in secondary schools in Rivers State.

CONCLUSION
The study has demonstrated that ICT can be used successfully to teach social studies, that ICT contribute to student’s academic performance and that the use of ICT should be an integral part of the teacher’s teaching plan. ICT on its own would not lead to successful learning, but with the teacher’s active involvement. Teachers should take advantage of the motivational effect of ICT and use it more often than not. Awareness of the barriers or obstacles associated with the use of ICT like power failures, unsuitable sites and information distractions when learners go on game sites instead of the work assigned. Future studies could focus on the use of ICT in teaching specific topics, classroom management and the specific aspects that raise motivation, learning, attainment and achievement.

RECOMMENDATIONS
From the results of the study, the following recommendations are made:

1. Ministry of Education should embark on fostering innovative networking and partnership arrangements with the private sector such as the computer solution companies such as Microsoft Corporation, Oracle Corporation, Intel Corporation, Design Animation, Film Corporation and many others. This will enable schools acquire both hardware and software at cheaper costs;

2. More ICT teachers be employed in secondary schools and trained in ICT skills to make them effectively deliver ICT based curriculum. It is crucial that Nigeria has well-trained teachers, able to implement ICT in schools in a mode that brings change from old to new pattern of learning which are much more student centered than before.

3. Teachers/students should be given sufficient training on how to use ICT in teaching and learning Social Studies. teachers should be trained on entailed use of ICT rather than general training on computer use.

4. ICT skill standards for lecturers should be set up which offers strategies for planning training needs and staff development programs in order to equip them with essential skills important in teaching geography using ICT tools in classroom. A more promising way forward should be a sustained professional development plan that draws on teachers local professional communities, encourages constant peer learning by teachers of similar subjects and age groups and supports reflective classroom performance. Teachers themselves need to become constant learners, with traditional teacher training models perhaps being replaced by models that allow teachers to learn independently, at their own rate and supported by ICT. Essential maintenance tools should be tools for self-assessment that direct teachers to appropriate knowledge sources.

5. Government and other stakeholders should mobilize resources for equipping schools with ICT infrastructure. There should be recognition that considerable learning could take place while teaching and even by learning from students. Therefore, schools should acquire up to-date ICT infrastructure that lecturers and students could train and learn on. Lecturers could be encouraged to learn from ICT infrastructure if they have an access to them. This would create interest and therefore encourage its implementation in school.

6. To foster a positive attitude to teachers on use of ICT in teaching and learning, there should be comprehensive in-service courses. In-service courses should be designed that will enable all teachers
to acquire ICT skills. Continuing professional development of teachers is central to successful implementation of ICT in school.

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