**British International Journal of Education And Social Sciences**
Vol.7, No.2; February- 2020
ISSN (3342 – 543X);
p –ISSN (4519 – 6511)
Impact factor: 8.11

# AN EVALUATION OF THE POSITIVE IMPACTS OF COMPUTER STUDIES IN SENIOR SECONDARY SCHOOLS IN ENUGU NORTH LOCAL GOVERNMENT AREA OF ENUGU STATE

**Obiakor, Mariagoretti Ijeoma and Ezenwagu, Stephen Abuchi**
Department of Educational Management and Policy, Nnamdi Azikiwe University, Awka Anambra State.

***Abstract:*** *This study evaluates the positive impact of computer studies in senior secondary schools in Enugu north local government area of Enugu state. The research adopted survey research method, the population used for the study was obtained from 10 secondary Schools. Sample size of 900 was determined using mean score statistical formula. Data were collected using questionnaire and interview and thereafter tables and statistical tools were used for presentation and analysis respectively. Finding of the study reveals that that Computer Studies have a very positive impact in senior secondary schools in Enugu North L.G.A. The study concludes that the inclusion of Computer education in senior secondary schools has positive impact in the teaching and learning process in secondary schools in Enugu North Local Government Area of Enugu State, Nigeria. The study among other things recommended that Computer education should be made compulsory at all levels of secondary schools. Also Computer Studies should be made a core subject in the senior secondary examinations organized by examination bodies such WAEC, NECO and NBTE. This will encourage students to endeavour to increase their knowledge on computer education and improve on their quality of education.*

**Keywords:** Positive impacts, Computer studies, Senior secondary schools, Enugu

## Introduction

The use of computer (Information and Communication Technology) has become the most popularized means of facilitating, teaching and learning in the recent times in this 21st century. Computer usage has turned out to be the fastest means of passing information to every educational sector and business world. Thefocus and emphasis on the use of information and communication technologies (ICT) in all areas of life has long become global. Information and Communication Technology (ICT) is not only limited to computer applications only. But also includes other computer applications like internet, news, and print etc (Ayelaugbe 2005). Computer science is now being explored at all field of life because the computer knowledge is universal and varied. The knowledge of the computer and the ability to use the computer has become so important and widespread that it has come to be an integral fact of education and literacy. Yet computer science education and literacy are lacking among many of our young boys and girls, as well as men and women today.

Paulson- Salim, (2017) stated that education is the imparting and acquisition of knowledge designed to develop a broad range of abilities, knowledge and skills of general application. Education is concomitant with life, this is because there is education in virtually all facets of life, this is because there is education in virtually all facets of life, one continues to learn as long as he lives.

**British International Journal of Education And Social Sciences**
Vol.7, No.2; February- 2020
ISSN (3342 – 543X);
p –ISSN (4519 – 6511)
Impact factor: 8.11

Mfum-Mensah, (2013) opined that, "available literature on development of education attest to the fact that education has been influenced by great thinkers, computer illiterate, law, forms of government, modes of social life. A renowned Nigerian educationist and one time minister of education, Prof. A. Babs Fafunwa defined education as "an aggregate of all the process by means of which a person develops abilities, attitudes and other forms of behaviour of positive value in the society in which he lives". Stienen, (2017).

The world is fast becoming a global village due to the inter connectivity that exist between countries, organizations government and other bodied as a result of development in information and communication technology (ICT). According to Stienen, (2017), information technology is the integration of computer technology mainly in the form of internet and information management. It provides opportunities for the users to handle texts and images, numbers and graphs, sound and music as well as enable them process information in the following ways: Storage and analyzing; presenting and organization retrieving communication. In other worlds, access to information and communication is increased through computer basic technologies.

A network of interconnectivity is known as the internet. World Bank (2017) stated that the internet is a powerful tool for improving the efficiency and quality of a wide range of public services especially education and health. The internet is a resource where teachers and students can access outstanding and current education-related books, journals, magazines international conferences, workshops, invitations as well as information on research focus and research grants.

Computer-mediate communication is increasing and becoming common usage for people for all walks of life in the developed and developing countries. Computer is any devices that is capable of accepting, storing and processing data and giving result out in form of information in a specified format. Farrell, Isaacs, (2017) defined it as an electronic device that is capable of accepting, storing and processing data as well outputting the result by following a set of instructions called a program as well as an electro-mechanical information.

Crawford, (2014), defined computer science as the application of scientific principles in designing, constructing and maintaining the computer system. The scientific study of the theory and practice of data and information, processing and knowledge of computer puts and its functions is referred to as computer science because computer are not only for storage device ad processing unit, but also helps student in excellent communication media. They are the means to access the internet and also an effective audio visual media. Computer can be used to access a vast knowledge based on research for information over the internet means of documenting the backbone management software that are part of computer system which helps the student as a means of managing large amount of data.

**Statement of Problem**

In most senior secondary schools, student fail computer science very wells it has been noticed that a large proportion of students fail computer science in their internal and external examinations and as a result, they hardly attain the acceptable level of good performance in their results. It has been claimed that the stumbling blocks has always been their inability to master and pass computer. Unlike other courses because of the internet difficulties associated with the learning of the subject.

Education has been defined as an act of imparting or acquiring particular knowledge or skills, as a profession. Another definition of education is that education is a field of study involved in the pedagogy of teaching and learning. It is a well known fact that education is important to the society as no human being can survive without education. Also education can help anyone to develop his potential to a maximum extent. Computers have had a huge influence in the advance of the use of technology in education. There are many advantages and disadvantage using computers and technology to educate. In education, the uses of computers are now integrated with the teaching and learning process.

**British International Journal of Education And Social Sciences**
Vol.7, No.2; February- 2020
ISSN (3342 – 543X);
p –ISSN (4519 – 6511)
Impact factor: 8.11

While some people agree that computers could enhance the teaching and learning process, others are yet to come to terms with the importance of computer education, they rather stress that the integration of the computers in the teaching and learning process might bring some disadvantages. It is on this backdrop the this study tend to evaluate the positive impacts of computer studies in senior secondary schools in Enugu north local government area of Enugu state

**Objective of the Study**

To determine the positive impacts of Computer Studies in senior secondary schools

**Research Question**

To what extent does computer studies affect students positively?

**REVIEW OF RELATED LITERATURE**

**Concept of Computer**

A *computer* is a device that can be instructed to carry out sequences of arithmetic or logical operations automatically via *computer* programming.

**Definition of Computer Education**

Computer education is defined according to (Oke and Bukola 2015) as the process of equipping learners with the skills that will enable them to make effective use of computers. Makinde (2013) also defined computer education as the broad term that covers teaching about computer or the use of computer in teaching other subjects. Therefore computer education at the secondary school level is designed to enlighten the students on the basic rudiment of computer and the use of computer in solving day to day problems.

**Information and Communication Technology as tool for Higher Technological Development**

In today's world, not only are we surrounded by technology, but our primary means of reaching others in far and near places are mediated by technology (Aduwa & Iyamu, 2015). According to Aduwa & Iyamu (2015), technology is progressively effacing the two previous environments: nature and society. The environment he talked about is that which enables us to live, sets us in danger and it is immediate to us and mediates all else. He asserted that modern man cannot live without these gadgets (mobile phone, computers, internet etc). This is what makes human subservient to technology rather than technology being subservient to humanity.

There is no doubt that one of today's realties is an extremely fast development of high-technology. This has resulted in a huge change of the individual's life in business and private settings. There is strong need to know and use modern technology in our social life, the economy, the business and education. New and sophisticated breakthroughs in high technology encourage companies to introduce technological innovations rapidly into their business practices. According to Aduwa & Iyamu (2015), the United States space programme has benefited immensely from rapid development in high-tech and today's information and communication technology.

In many parts of the developed world, cellular, satellite, and wireless technologies combined with innovative business practices are beginning to make up for the shortcomings of the traditional analog technologies. Nigeria was introduced to cellular technologies a little over two years ago and this has revolutionized the communication industry in the country, though majorities of Nigerians are yet to benefit from the services due to high cost (Aduwa & Iyamu, 2015). If Nigeria must be part of developed world in the near future, it must embrace technology and discard some of the old habits and perspectives and retool completely. There is need for the country to re-strategize and expand its vision so as to cope with the challenges of a technological society (Aduwa & Iyamu, 2015).

**Prospects of Computer Studies in Secondary Schools**

There are numerous and good prospects of computer studies for teaching and learning in secondary schools in Nigeria and most importantly Aniocha and Oshimili Local Government Area in Delta State. The following major areas suggest the range of applications that Computer studies can serve teachers and learners in

British International Journal of Education And Social Sciences
Vol.7, No.2; February- 2020
ISSN (3342 – 543X);
p –ISSN (4519 – 6511)
Impact factor: 8.11

Nigeria. Computer can enhance educational efficiency. The efficiency in teaching various subjects could be improved. For instance, many secondary school teachers are already teaching large classes of students. In this situation, students no longer receive the much desired individual assistance. It is possible to use carefully prepared computer programs to ensure that learners are accurately and systematically instructed. The computer can enhance problem-solving skills of the learners by focusing on thinking skills. 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. Computers can be used for individualized learning in secondary schools in Nigeria. Due to the class size and differences in the individuals learning style and pace, microcomputers will enable the student to progress at their 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 concept.

Computers can change current pedagogical practices in secondary schools 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 source of information to a guide of self-propelled exploration (Smith, 2017). Computers will offer teachers improvement in the techniques of research. The cumbersome exercise of searching by hand through the library's card catalog 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. It can also be used in the analysis of data and better presentation of research report.

**Improving the Availability and Supply of Instructional facility required for Teaching Computer Studies**

The act of receiving instruction is teaching (Nwachukwu, 2011). The concept of teaching and instruction are therefore related in terms of their objectives-impacting knowledge (Nwachukwu, 2011). In every institution of learning, its major purpose is to help learners learn. To achieve this, each part (school, teacher and learner) set its own goal. All these goals must be congruent for them to achieve the goal of education by providing for different individual. In other to provide for different individual, scholars and educationist have been able to provide different instructional approach and facilities for use in education. Instructional strategies, which are varieties of an instructional approach, mean help given to learner to easy their rate of assimilation. According to Landu (2015) in Nworgu (2017) the use of computer for instruction can be classified into two major categories: Computer Assisted Instruction (CAI) and Computer Managed Instruction (CMI). This strategy refers to any instructional program whereby computer performs, manages or support some or the entire teacher provided functions. Most proponent of individualized instruction saw the computer as a way to further improve the design and delivery of individualize instruction – now in an electronic environment.

Computer Assisted Instruction is so effective in that they offer user-friendly environment, which can entertain and allow individual to work at own pace thus making them active participants. Hence the following strategies are suggested to alleviate the problem of quality and supply of instructional facility. Organization of periodic

seminars and workshops for teachers in other to disseminate universally accepted strategies of teaching, adequate provision of Information and Communication Technology facilities, training of teachers by the government in other to be conversant with the basis computer skills required for effective teaching of Computer studies, reduction of class-size by increasing student/computer ratio to 2:1, training teachers to be conversant with different instructional skills to effectively teach Computer studies as well as use computer and Information and Communication Technology facilities and regular supply of computer textbook by local and state government. Other strategies may include provision of standard library by PTA, for the day-today use by teachers and students, partnership with internet provider such as MTN, GLO etc. There should all so be regular in-service training of teacher to master skill for effective teaching of Computer studies as well as recruiting of qualified teachers, purchase or donation of instructional material and equipment by host communities. Attendance to practical class should be made mandatory.

**Theoretical Framework**

**Constructivism Learning Theory**

Jean Piaget a psychologist propounded cognitive constructivism. Constructivism approach to learning emphasis authentic, challenging project that include students, teachers and experts in the learning community (Siemens, 2014). Its goal is to create learning communities that are more closely related to the collaborative practices of the real world, where problem are seen from different perspective, and are able to negotiate and generate meaning and solution through shared understanding. This theory argues that it is impractical for teachers to make all the current decisions and dump the information to student without involving student in the decision process as well as assessing students' ability to construct knowledge.

Hence students learn through experience. However, Sharon suggests that the role of the teacher in constructivist learning environments is one of facilitator, guide and coach. The learner assumes responsibility for her own learning under the direction of the teacher. Therefore, in a computer- enhanced learning environment, the teacher provides the resources, assignments, and data. He then guides the discussion paths while allowing the learners to branch out into areas that present interest and discovery. Hence the learner is free to choose when to work, the order tin which to do that work, and to manage her own time.

According to Siemens (2014) some basic limitations of this theory is that it did not address learning that occurs outside of the people (i.e learning that is stored and manipulated by technology). They failed to describe how learning happens within organizations. It is worth remembering that learning theories are concerned with the actual process of learning, not with the values of what is being learning. In a networked world, the vary manner of information that we acquire is worth exploring. When knowledge is abundant, the rapid evaluation of knowledge is equally important (Siemens, 2015). This theory is relevant to this study in that it could be applied in the classroom for improving the teaching and learning of computer studies, especially when using Computer Assisted Instruction (CAI) as a student learning approach. Computer Assisted Instruction is designed such that it consists of interactive tools for easy navigation by the user.

Hence, instructors can give assignments, class work, and projects to enhance and engage learners. It provides opportunities for student-to-student learning which is also very crucial, along with student-to-teacher and student-to-course platforms. Feedback can be swift and effective. Finally it creates room for evaluation, bearing the process of learning in mind. According to Sharon, in constructivist computer studies, the learner is evaluated in a broader method. Paper-and-pencil testes are still appropriate but should not be the only method for evaluation. Student reflection papers, self-reflection journals, and cooperative authentic projects are also included.

British International Journal of Education And Social Sciences
Vol.7, No.2; February- 2020
ISSN (3342 – 543X);
p –ISSN (4519 – 6511)
Impact factor: 8.11

**Empirical Study**

Orajekwe (2016) carried out a study on strategies for retooling instruction in secondary health education for the information age. The descriptive design was adopted. Three research questions were used. A random sample of 342 health education teachers in secondary schools in Anambra State participated in the study. The study utilized a 21 item questionnaire structured on a 4-point Likert scale. Mean and standard deviation were used to answer the research question.

The findings of the study indicated that retooling health education instruction would involve the provision of information and communication technology (ICT) infrastructure, building teachers' capacity, and the acquisition of Information and Communication Technology skill by health education teachers. Some recommendations were suggested on what government, PTA, principals, and health education teacher should do such as provision of facilities, development and provision of reliable locally produced software that will be easy to maintain. Subsequently, the teachers agreed that in terms of the global trends Information and Communication Technology infrastructure is important for retooling health education in secondary schools in Oshimili North and South Local Government Area in Delta State. This work is very much related to the present work in that both studies are concerned with infrastructure as a strategy for improving a program. However, the work differ slightly from the present study in that the author looked at infrastructure as a strategy for retooling health education in secondary schools while the present study sees infrastructure as a strategy for improving computer study in secondary school in Asaba in Delta State.

Another study carried out by Hammer (2013) was on strategies for increasing female students' enrollment in technical subject in Bauchi State. Three research question and three null hypotheses were formulated to guide the study. A 51-item questionnaire was developed and administered to 87 teachers and 192 students from three government secondary schools. Mean and standard deviation were used for data analysis. The result of the study showed that there is need to recruit qualified technical teachers and provide regular in-service training for them to master skills to fully equip them for effective teaching. All necessary facilities, infrastructure and other input for technical education are provided, the community and industrial sector should continue in providing facilities for technical colleges. Some kind of incentive is paid to female technical student to stimulate their interest. Hammers work is similar to the present study since both identified recruitment as a major strategy. However, the former study focused broadly on strategies for increasing female students' enrollment in technical subject, the present school study focuses on strategies for improving Computer studies in secondary school.

**Methodology**

**Research Design**

The study adopted the descriptive research design that enabled her to adopt a method for easy data collection, interpretation and analysis.

**Area of the Study**

The area of the study is senior secondary schools in Enugu North Local government area of Enugu State. Enugu has good soil-land and climatic conditions all year round, sitting at about 223 meters (732ft) above sea level, and the soil is well drained during its rainy seasons. The mean temperature in Enugu State in the hottest month of February is about 8.716 $^0$F (30.64$^0$C), while the lowest temperatures occur in the month November, reaching 60.54 $^0$F (15.86 $^0$C).

**Population of the Study**

Population of the study "involves a group of persons or aggregate items, things the researcher is interested in getting information from for the study" Therefore, the population of Federal Govt. College, Holy Rosary College, CIC, Urban Girls, GSS, GTC, Queens Metropolitant girls and City girls used was 900.

**Sample and Sampling Technique**

Sampling is a process of selecting any portion of that population for the purpose of obtaining information for

**British International Journal of Education And Social Sciences**
Vol.7, No.2; February- 2020
ISSN (3342 – 543X);
p –ISSN (4519 – 6511)
Impact factor: 8.11

generalization about the large population Nwabueke, (2016). Sampling population is used to avoid possible errors in dealing with population. The population size was narrowed down to determine the sample size. A statistical formula was used in determining the sample size. The sample size would be suitable for the study. Based on this the population of 900 was targeted.

**Instrument for Data Collection**

Questionnaire items were used to source data from the respondents. The items sought to which the respondents understood the problem. The questionnaire was pilot tested and rated highly by scholars with extensive experience in the use of the instrument for research purposes. The ease of access to the respondents by the researcher, allowed for a personal administration of the instrument which ensured eighty nine percent return rates thereby eliminating non-return bias.

**Method of Data collection**

The researcher considered it best and appropriate to make use of frequency table presentation and simple percentages, while simple descriptive analysis were used to infer meaning from the data in the table for analysis because the results were easily understood by both academics, and non-academics. The researcher also understood more the use of percentage than any other method of analyzing data and also considered it a legitimate way of data analysis. Also the Chi-square goodness of fit test was used to test the formulated hypotheses.

**Method of Data Analysis**

The data collected were analyzed using frequencies and mean scores. Based on the four (4) point scale, the acceptance level for the mean score was 2.50 and above and anything below 2.50 was rejected. The null hypothesis used for the formulation of the study was 0.05 level of significant.

**Data Presentation and Analysis**

The results of the study are presented in tables in accordance with the research questions guiding the study.

**Research Question**

**Table 3:** Mean response on how computer studies affect students positively?

**N=900**

| S/N | Items | SA | A | D | SD | $\sum fx$ | Mean | Decision |
|---|---|---|---|---|---|---|---|---|
| 1 | computer studies accelerates faster learning | 80 | 420 | 310 | 90 | 2290 | 2.5 | A |
| 2 | computer studies helps to make theory well understood and comprehended | 400 | 300 | 200 | 100 | 3000 | 3.3 | SA |
| 3 | computer studies enable student have computer skill | 200 | 500 | 120 | 80 | 2620 | 2.9 | A |
| 4 | computer studies brings about globalization | 500 | 200 | 150 | 50 | 2950 | 3.3 | SA |
| 5 | computer studies expose children to the western world | 250 | 450 | 80 | 120 | 2630 | 2.9 | A |
| | **Grand mean** | | | | | | **14.9** | **Agree** |

***Source: Field Survey, 2019***

Table 3 shows the mean score obtain respectively: 2.5 mean score shows that respondents strongly agree that computer studies accelerates faster learning. 3.3 mean score shows that respondents agree that computer studies helps to make theory well understood and comprehended. 2.9 mean score shows that respondents

strongly agree that computer studies enable student have computer skill. 3.3 mean score shows that respondents strongly agree that computer studies brings about globalization. While 2.9 mean score shows that respondents strongly agree that computer studies expose children to the western world.

**Discussion of Findings**

Research Question 3 dealt with the positive impact of Computer Studies in secondary schools. The result of the findings showed that the majority of the respondents rated the items very high. This shows that they all agreed that Computer Studies have a very positive impact in senior secondary schools in Enugu North L.G.A. The result of these findings is in agreement with that posited that the adoption and use of computers in schools have a positive impact on teaching, learning, and research.

**Conclusion**

**Summary of Findings**

Students and teachers are discouraged from using computers and computer knowledge to commit various cyber-crimes which do not portray the nation in good light, but rather should use the computers and their knowledge for only good purposes which will impact positively in their lives and in the lives of the entire society

**Conclusion**

This study focused on the positive impact of computer education in senior secondary schools in Enugu north local government area of Enugu state. The study covered 10 secondary schools in the Local Government Area under consideration. The major areas covered in the study included to determine whether Computer studies affect students positively. The results of the research indicate that the inclusion of Computer education in senior secondary schools has positive impact in the teaching and learning process in secondary schools in Enugu North Local Government Area of Enugu State, Nigeria. Despite the roles Computer Studies can play in education, many senior secondary schools in Enugu North LGA of Enugu State are yet to include it in their teaching and learning process. Hence Computer Studies should be sustained in senior secondary schools and basic infrastructure provided to ensure that teachers and students maximize the benefits of the positive impact of Computer Studies.

**Recommendations**

1. Students and teachers should be discouraged from using computers and computer knowledge to commit various cybercrimes which do not portray the nation in good light, but rather should use the computers and their knowledge for only good purposes which will impact positively in their lives and in the lives of the entire society.
2. Computer education should be made compulsory at all levels of secondary schools. Also Computer Studies should be made a core subject in the senior secondary examinations organized by examination bodies such WAEC, NECO and NBTE. This will encourage students to endeavour to increase their knowledge on computer education and improve on their quality of education.

**References**

Adomi, E.E. & Kpagbani E, (2015) ―Application of ICTs in Nigerian Secondary Schools‖ Available: http.//www.webpages.uidaho.edu/~mbolin/adom ikpangban.htm, 2010.

Aduwa O.S.E., & Iyamu, E.O.S, (2014) ―Using Information and Communication Technology in Secondary Schools in Nigeria‖. Educational Technology and Society.8 (1), (104- 112),.

Ayelaygbe, S.O. (2005) Information communication Technology and citizenship development in Nigeria. Nigerian Journal of citizenship education. (Vol. 4 p. 40 – 43)

Bada, T., Adewole, A., Olalekan, O. (2010): Uses of computer and its relevance to teaching and

learning in Nigerian educational system. Educational Research and Review 4(10), 443–447

Bass, L & Ritting, L, (2015) Technology in Education‖ Available: http://www.uri.edu/personal/lbas.

Bukaliya, A. K., (2014). Factors Militating Against the Introduction of Computer Education in Secondary School‖ Journals of Educational and Instructional Studies in the world. Available: http://asoindex.com/journal-articlesabstract?id =20925‘, 2012.

Crawford, R. (2010): Teaching and learning IT in secondary schools: towards a new pedagogy? Education and Information Technologies 4, 49–63

Farrell, G., Isaacs, S. (2017): Survey of ICT and Education in Africa: A Summary Report, Based on 53 Country Surveys. infoDev / World Bank, Washington, DC

Federal Republic of Nigeria (2014). National Policy in Education 4 th Lagos: Nigerian Education Research and Development Council.

Gay, L.R,‖ (2016) Educational Research: Competencies for Analysis and Application‖, Pearson Education,.

Jegede, P.O & Owelabi, J.A, (2013) ―Computer Education in Nigeria Schools: Gaps Between Policy And Practice‖ Meridian: A Middle School Technology Journal, 6(2) 1 – 11.Available:http://ncsu.edu/meridian/sum2003/Nigeria/5.html,.

Kulik et al, (2013). Effects of Computer based teaching on Secondary School Students‖, Journal of Educational Psychology, 75(1), (19-26), 1983.

Mfum-Mensah, O. (2013): Computers in Ghanaian Secondary Schools: Where does equality come in? Current Issues in Comparative Education, Teachers College, Columbia University.

Nwana, S, 20`(2012). Challenges in the Application of E- Learning By Secondary School Teachers in Anambra State, Nigeria‖, African Journal of Teacher Education, 2(1). Available:http:// journal.lib.uoguelph.ca/index.php/ajote/article/1913/242 , 2012.

Oak, M, (2011). Uses of Computers‖, Available:http://www.buzzle.com/articles/importance-ofcomputers-education.html,

Obiakor, M.I. (2019) Advanved Learners Computer for Tertiary Institutions; published by M&K Classic Multilinks Limited, Enugu Nigeria

Odera F. Y, (2011) Emerging Issues In The Implementation of Computer Technology Into Kenya Secondary School Classrooms‖, International Journal of Science and Technology (260-268).Available: ejournalso fsciences.o rg/archi ve /vol1no6/vol1no6_12 pdf,.

Oluwetayo, J.A, (2013): Assessment of Computer Literacy of Secondary Schools Teachers in Ekiti State, Nigeria‖, Journal of International Education Research.8(2) (97-104).

Reffel IT, P. & Whitworth, A, (2015). Information Fluency Critical Examining Education‖, New Library World (103), 2012.

Salim, R. (2010): Computer education at secondary school level, The Amader Gram Information Technology for Development (ICT4D) project.

Stienen, J. (2016): ICTs for Education: Impact and lessons learned from IICD- supported activities. IICD, the Netherlands