**CHAPTER ONE**

**INTRODUCTION**

**Background of the Study**

One of the fundamental rights of every human being is education. Education prepares the individual for challenges in life. Consequently, Gujjar (2010) opined that education does not only deliver information, but for developing complete personality of a child. In Nigeria there are three levels of education: primary, secondary and tertiary level. Secondary education is the level between primary and tertiary education. It equally prepares students to be productive members of the society (Jegede2013). In developed countries, Secondary School is seen as the gateway to providing not only an educated citizenry but also a capable workforce. According to World Bank in Etim (2006), Secondary education is now being recognized as the cornerstone of educational system in the 21st century. It therefore means that quality Secondary education is indispensable in creating a bright future for individuals and nations alike.

The term Computer Studies have been used interchangeably, in some cases it has been referred to as computer education while in other cases it is called computer literacy. In whatever way, it means the same thing. Computer education is the effort or the ability to make the generality of the people computer literate. Computer literacy is the ability to be able to read, write and speak the language of the computer. It can also be looked at as a process of educating the people on how to use a computer to run a program and diverse application including business, industry and commerce (Okorie, 2012). Computer studies according to Edhuze (2003) involved teaching and inculcating in the learner the basic skills required to independently manipulate the computer to achieve educational goals. He further stated that, computer studies as a subject is aimed at making students acquire skills and competencies required in this digital word of competitiveness. Such basic skills and competencies upon graduation make them conversant with term and practices embedded in the world of computer. Computer studies, therefore a subject organized toenable people understand the function, uses and limitations of the computer and to provide an opportunity for the study of the modern methods of information processing.

The intention of Nigeria to include computer studies into the secondary school curriculum dates back to 1988 when the National Policy on Computer Education was enacted and launched (Abimbade, 1999). The policy on computer education suggested the following as some of the computer curriculum context at the secondary school level: A basic appreciation of how the computer works, an understanding of the basic principle of operating the computer, hands-on experience using the pre-programmed packages which are relevant to the interest of the students as teacher aids in different subjects. According to the National Policy on Computer Education (2006), it is expected that by the end of secondary education, the child has acquired reasonable competence in software such as word processing, spreadsheet, database analyzing programs that allow learners interact with the computer the way they desire (Ayogu, 2008). It therefore means that to achieve these objectives as stated in the National Policy on Education, strategies are needed.

In modern world, the computer is being gradually applied in all aspects of human endeavour. It has been stressed that the application of computer will enhance effectiveness and efficiency in this rapidly growing and technologically changing world. Computer education is being advocated because it is almost certain that computer literacy will have as much impact on career opportunities in the fast growing information age (Adamu and Bello, 2012). The relevance of computer education is therefore, hinged on its utility value. The National Policy on Education (NPE, 1981, revised in 1988, 1991, 1998 and 2004) introduced the teaching of computer studies in Nigerian schools. The inclusion of the study of computer studies in the school curriculum was aimed at providing opportunity for every student to become computer literate. The study of computer studies has in effect, gained tremendous influence on the student and society. However, the use and study of computers in Nigeria is recent when compared to other parts of the world where computers have been in use in all facet of human endeavour including offices, schools, industries, research centre’s, communication, hospitals to mention but a few. The complex nature of present day school situation has made transmission of information and instruction to students and the nature of learning and teaching in general more complex. This has made the role of the teacher in promoting learning more challenging. The new role does not just, involve mere transmission of information to students but also include looking at the problems associated with learning and instruction so that students can gain maximally from teaching and learning process. Computers are now used where there is a lot of data to be manipulated, where complex tasks must be managed or where there is need for real time access to centralized information from arbitrary locations such as in education, telemedicine, telecommunicating and in several other area (Adewopo, 2015). The study of computer in school is therefore, aimed at helping the students cope with modern technological development, equip them knowledge and competencies or skills of programme and administrative management as well as, improve the learning process. Students are expected to master the skills of computer appreciation or application and not just what it is and can do. Students are therefore, expected to be taught in such a way as not only to conceptualize and understand the computer, but also to be able to effectively manage their own learning, reinforce it and apply such knowledge or training in practical situation. This new approach has made the teaching of computer studies a little bit more complex and challenging. It has been observed that the teaching and learning of computer studies in schools has not been quite easy. Often time, people talk about inadequate equipments, facilities, and computers instructional resources for learning and teaching exercise (Aghadino, 2014). It is believed that teaching of science in general and computer studiesin particular is beset with a number of problems (Adamu, 2010). The slow pace of learning and application of computer had been attributed to this. This presupposes that there are problems associated with the teaching and learning of computer studies education. In the circumstance therefore, one is prompted to ask: what exactly is the situation? What are the problems associated with the teaching of computer studies education? It is against this backdrop this study was designed to assess the difficulties associated with computer studies education using Enugu East as a case study.

**Statement of the Problem**

The growing need for computer literacy has made it imperative that increased attention be given to the study of computer at all level of education especially in secondary schools. The researcherobservationonjunior secondary schools in Enugu East Local Government Area of Enugu State shows that laboratory, computer and instructional materials required for learning of computer studies are not only inadequate but have not been fully utilized. Further interaction with student has shown that they are not taught computer studies regularly like any other subject due to shortage of computer teachers. However, one of the reasons why computer teachers are in short supply is that when teachers with computer qualification are employed, they prefer to teach mathematics rather than computer subject. Most of these computer teachers have been exposed only to the theoretical aspect of their programme while little or no attention was paid to the practical aspect of their programme during their years of training. (Aghadino, 2014).

It therefore means that without proper improvement on the gaps facing computer studies in junior secondary schools in Enugu East Local Government Area of Enugu State, Secondary School Students upon graduation are bound to be completely obsolete in our contemporary society where knowledge of computer has become a prerequisite for employment, interview and in some cases for promotion. It is on this basis that the researcher deems it necessary to conduct a study on the perception of junior secondary school students’ on difficulties in learning computers and tend to provide strategies for improving computer studies in Enugu East Local Government Area of Enugu State.

**Purpose of the study**

The general objective of this study is to investigate the perception of junior secondary school students on difficulties in learning Computer Studies in Secondary Schools in Enugu East Local Government Area, Enugu State.

The specific objectives include;

1. To find out students-related difficulties in learning computer in Junior Secondary School
2. To determine School-related difficulties affecting learning of computer in Secondary Schools
3. To find out strategies in improving learning of computer in Junior Secondary Schools.

**Significance of the Study**

The researcher hopes that the result of this research work shall be beneficial to the following: educationaladministrators, computer studies teachers, learners which include secondary school students and future researchers.

 Thefindings of the study will help to make our Educational Administrators see the need to have qualified computer studies teachers to handle the subject effectively for the benefits of the students and society at large.It will also help to sensitize the educational administrators to appreciate the need to make available the necessary materials, examples chalkboard, graph, audio-visual materials, etc that will enhance effective learning of computer studies if they are not available.

 This study will be of need directly to the Computer studiesTeachers’ Association, drawing attention to the need for them to adopt more appropriate teaching method in order to bring about the desirable experience in the learners.

 It will be useful for learners to identify the factors affecting the teaching and learning of computer studies. It will help to produce sound computer scientists that will function well in the society.This work will serve as a source of encouragement to students and teachers that will come across it. It is hoped that the findings of this study would also form the basis for further research work by future researchers on this issues.

 This work adds great knowledge to already existing literature in computer education and education in general thereby serve as an aid to future researchers.

**Scope of the study**

This study aimed at identifying the perception of junior secondary students on difficulties in learning computer studies in secondary schools. It examined various factors which include; student related factors, school related factors difficulties that affect learning of computer studies and as well proffer solutions to the out-listed difficulties. The study is delimited to public secondary schools in Enugu East LGA, Enugu State.

**Research Questions**

To achieve the objective of the study, three research questions were formulated.

1. What are students-related difficulties affecting learning of Computer studiesin Junior Secondary Schools?
2. What are the school-related difficulties affecting learning of computer studies?
3. What are the strategies for improving the learning of computer studies?

**CHAPTER TWO**

**LITERATURE REVIEW**

**Conceptual Framework**

 The review of literature of this study was organized under the following sub-headings:

**Conceptual Framework**

* Concept of computer
* Computer Studies in Junior Secondary School
* Problems of Computer Studies in Junior Secondary Schools
* Strategies for Improving Computer Studies

**Theoretical Framework**

* Constructivism Learning Theory
* Downes Siemens Connectivism Learning Theory

**Related Empirical Studies**

**Summary of Literature Reviewed**

**Conceptual Framework**

**Concept of Computer**

Computer, according to the International Records Management Trust (IRMT) (2009), a computer is a programmable machine. It allows the user to store all sorts of information and then ‘process’ that information, or data, or carry out actions with the information, such as calculating numbers or organizing words. Computer studies: For the purposes of this document, the term computer studies refers to the study of computer studies, meaning computer and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society. The major focus of these courses is the development of programming skills, which are important for success in future postsecondary studies (URT, 2007).

Computer literacy refers to the ability to use computers at an adequate level for creation, communication and collaboration in a literate society ( Guile, 1998). Information Communication Technology has several definitions depending on the nature of its use, but for this study ICT is used as an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems, as well as the various services and applications associated with them, such as videoconferencing and distance learning URT (2003),. We refer to ICT in the particular context of ICT provision, policy and teacher factors that variously support teaching, learning and a range of activities in education. It is from this explanation that the Ministry of education and Vocational Training upon integrating ICT into school call it computer studies. Every human being has a right and an equal opportunity to not just education but quality education and that’s why the policy of ICT for basic education is directed at the achievement of the objectives of Nigeria’s education policies and education development programs, (URT, 2007).

Education policy of 2014 stated that the overall aims of education in Nigeria are among other things: “To promote the acquisition and appropriate use of literary, social scientific, vocation technological, professional and other forms of knowledge, skills and understanding for the development and improvement of man and society”. In 2001, the Education Sector Development Programme (ESDP) was launched to realize the objectives of education policies by addressing critical issues including ICT, improving equality the quality of education, both formal and non-formal; to promote access and equity to basic education to promote science and technology. Furthermore, Article 26 of the Human Rights Declaration states “The concept underpinning human rights education is that education should not only aim at forming trained, professional workers, but also at contributing to the development of individuals who possess the skills to interact in a society. Human rights in education, aims at providing pupils and students with the abilities to accompany and produce societal changes. Education is seen as a way to empower people, improve their quality of life and increase their capacity to participate in the decision-making processes leading to social, cultural and economic policies”.

According to Fiske (2009), If we are talking about empowering an entire community – parents, teachers, administrators, even students – then they all need access to newest technology, otherwise we are trying to prepare students for the twenty first Century world using Stone Age tools. Noll (2010), support that Advocates of Information Age education will again point to the precedent of the printing press and the great democratization of education that followed. Just as the printing press brought high quality and affordable education to the masses, new educational technologies should do the same. By reducing the cost of access to the best instruction in the world, these new technologies if properly implemented should decrease the discrepancy between the information haves and have nots.

According to Riordan (2004), in democratic societies citizens demand both greater equality and greater quality from schools. They desire both the simple transmission of basic knowledge and skills and selection of certain students to pursue specialized and functional roles in society, but also our society demands equity and equality of educational opportunity for all citizens. UNESCO’s World Conference on Education for all, held in Jontiem in 1990 and from the Global Forum on Education, held in Dakar in 2000. According to these recommendations, it is not the enrollment of a certain part of the population, in other words access, that fulfils the right that all have to education. Education for All refers to an education capable of serving all children, youths and adults with the required quality and equity. Improving the quality of education, keeping students in school and expanding access to education are among the major challenges currently faced by countries. Such challenges are associated to the increasingly important role played by education at a global level, because of its relevance to the pursuit of sustainable development in society, citizenship awareness building and the fight against social exclusion. The development of public policies based on those perspectives is a core strategy to ensure the universalized access, attendance and learning at all stages of basic education.

**Computer Studies in Junior Secondary School**

The need for computer studies in junior secondary schools is enormous. The world is a global village, information dissemination is done in seconds, and offices are tuning into a paper-less office (Edhuze, 2003). All these could be attributed to digitalization, which is facilitated by information and communication technology devices such as computer, internet, fax, global system of mass communication (GSM) or mobile phone and satellites (Usoroh, 2008). This digitalization can only be made useful when a society is computer literate and the changes of becoming a computer literate society is through Computer studies taught mainly in secondary schools. This is a major challenge to schools, because it is their responsibility to graduate students who can fit into the information age. It can therefore be said that computer literacy is needed in a society like ours if we want to be part of this global consumer of ICT.

In a move to help Nigerians overcome backwardness in computer and digital know-how, many spirited Nigerians has mapped out strategies for helping its citizens become computer literate. Such bold steps will help close the narrow gap between Nigeria and developed countries. Inline with this, he further noted that, computer literacy and IT knowledge offers room for self employment since a trained computer literate person could end up operating a business center become a programmer or even a tele-engineer. For those that are going into business, it can also aid them in the area of speed, data keeping, accuracy and information processing. Today, one of the fundamental demands in many established interviews for job seeker is computer literacy skill. Many people have failed to secure jobs which they are qualified for only for lack of knowledge and skills in computer operations (Ayogu, 2008).

The use of computer as a facility is possible and necessary in our school system. Its use can aid communication among students. Computer communication has played and is still playing an important role, not only in schools, but also in offices, hospitals, libraries and in homes. At the secondary school level, computers enable the students communicate at fast, accurate and convenient pace to other people through e-mail (Okonkwo, 2006). Sending and receiving data electronically will take only a few seconds. In information processing, computer can sort or search through huge amount of information in a flash. Computer communication makes any information needed easily and widely available irrespective of distant between the two destinations (Okonkwo, 2006).

Computer studies also presents challenges to secondary school teachers. Such challenges have prompted teachers to go for training in other to build confidence in the handling of computer related courses. Such training also helps them develop a sense of rapport with students and equally makes them appreciate its potential for problem solving (Okonkwo, 2006). He went further to say that their knowledge of Computer studies also helps them to schedule classes, print report cards, and store and upgrade student’s record. Most often these records are used by guidance counselor for student career choice he concluded. Okebukola (2017) also asserted that computer is not part of classroom technology in public schools in Nigeria. Thus the chalkboard and textbooks continue to dominate classroom activities in most secondary schools in Nigeria. If a country such as Uganda which has less than a fifth of Nigeria’s resources, now use ICT facilities to help secondary schoolsstudents to become better information users, why is Nigeria lagging behind? (Aduwa &Iyamu, 2005). The answer is simply mismanagement of the huge resources of the country and inability of political leaders to prioritize Nigeria’s developmental needs (Okebukola, 2017). There is no doubt that in the current harsh economic competition, the private sector in Nigeria has embraced ICT to stay afloat. The banking sector, insurance, manufacturing industries and multination companies in the oil sector have embraced multimedia technology to bring innovative solutions to their current challenges.If Nigerian wants to be a major player in the global market of ideas and prepare her citizens for the new environment of today and the future, the country should embrace functional Computer studies (ICT) in secondary school for the following reasons: ICT as aids to teaching and learning; ICT as a tool for management; ICT as instrument for economic development; ICT as instrument of high technological development (Aduwu&Iyamu, 2005).

**Problems of Computer Studies in Junior Secondary Schools**

There are several impediments to the successful teaching and learning of Computer studies in secondary schools in Nigeria. These are: cost, weak infrastructure, lack of skills, inadequate software and limited access to the Internet (Aduwa &Iyamu, 2005).

**Cost**: The price of computer hardware and software continues to drop in most developed countries, but in developing countries, such as Nigeria, the cost of computers is several times more expensive. While a personal computer may cost less than a month’s wages in the United State, the average Nigeria workers may require more than two years income to buy one. Nigeria has over 6,000 public secondary schools, majority of them lack instructional materials such as, computer, software, multimedia, projector, white board etc (Aduwa &Iyamu, 2005). Apart from the basic computers themselves, other costs associated with peripherals such as printers, monitors, paper, modem, extra disk drives are beyond the reach of most secondary schools. The schools cannot also afford the exorbitant internet connection fees.

**Weak Infrastructure**: In Enugu East Local Government Area in Enugu State, a formidable obstacle facing the teaching and learning of computer studies is infrastructure deficiencies. Computer equipment was made to function with other infrastructure such as electricity under controlled conditions. For a long time, the nation has been having difficulty providing stable and reliable electricity supply to every nook and cranny of the country, not excluding Enugu East Local Government Area in Enugu. Currently, there is no part of the town, which can boast of electricity supply for 24 hours a day except probably areas where government officials live. There have been cases whereby expensive household appliances such as refrigerators, deep freezers and cookers have been damaged by upsurge in electricity supply after a period of power outage.Electronics equipment such as radio, television, video recorder and even computers has been damaged due to irregular power supply. When electricity supply is not stable and constant, it is difficult to keep high-tech equipment such as computersfunctioning, especially under extreme weather conditions as obtained in different part of the country. The high levels of dust during the dry season in the area also make electronic equipment to have short live span. In Enugu East Local Government Area in Enugu state most inhabitant do not have constant electricity, thereby denying secondary schools in this area the opportunity to benefit from the use of electronic equipment such as radio, television, video recorders and computers. The few internet access available in Enugu East Local Government Area in Enugu state is only made available when you subscribed.

**Inadequate Skilled Personnel**: Nigeria does not only lack information infrastructure, it also lacked the human skills and knowledge to fully integrate ICT into secondary education (Aduwa &Iyamu, 2005). To teach computer studies (ICT) in secondary schools, the need for locally trained workers to install, maintain and support Computer Systems cannot be over emphasized. There is acute shortage of trained personnel in application software, operating systems, network administration and local technicians to service and repair computer facilities. Those who are designated to use computers in Nigeria do not receive adequate training, at worst, do not receive any training at all.

In Nigeria also, most secondary school teachers lack the skills to fully utilize technology in curriculum implementation. Hence the traditional chalk and duster approach still dominates in secondary school pedagogy. Information transfer using ICT is minimal or non-existence in secondary schools in Nigeria (Anao, 2003). Secondary school teachers in Nigeria need to be trained on educational technologies and the integration of computers into classroom teaching. According to Carlson and Firpo(2001), teachers need effective tools, techniques, and assistance that can help them develop computer based projects and activities especially designed to raise the level of teaching in required subjects and improve student learning.

**Inadequate Software:** There is no doubt that the ultimate power of technology is the content and the communication (Salomon, 2009). Though, software developers and publishers in the developed countries have been trying for long to develop software and multimedia that have universal application, due to the differences in education standards and requirements, these products do not integrate into curriculum across countries. Software that is appropriate and culturally suitable to the Nigerian education system is in short supply (Aduwa &Iyamu, 2005). There is a great discrepancy between relevant software supply and demand in developing countries like Nigeria. According to Salomon (2009), there are clear indications from many countries that the supply of relevant and appropriate software is a major bottleneck obstructing wider application of the computer. According to Aduwa &Iyamu (2005) even if Nigeria tries to approach this software problem by producing software that would suit its educational philosophies, there are two major problems to be encountered. First, the cost of producing relevant software for the country’s educational system is enormous. Second, there is shortage of qualified computer software designers in the country. To overcome this, people need to be trained in software design.

**Limited Access to the Internet:** In Nigeria there are few Internet providers that provide internet gateway services to Nigerians. Such Internet providers are made up of Nigerians who are in partnership with foreign information and communication companies. Many of these companies provide poor services to customers who are oftenexploited and defrauded. The few reputable companies, which render reliable services, charged high fees thus limiting access to the use of the Internet. The greatest technological challenge in Nigeria is how to establish reliable cost for Internet connectivity. In a country where only about half of the populace has personal computers, the few reliable Internet providers who have invested huge sum of money in the business have a very small clientele. They have to charge some fees in order to recoup their investment in reasonable time.

Secondary schools in Enugu East Local Government Area in Enugu State are not given adequate funds to provide furniture, requisite books, laboratories and adequate classrooms let alone being given adequate funds for high-tech equipment (computers) and Internet connectivity. Again, due to the lack of adequate electricity supply, secondary schools located in these areas have no access to the Internet and are perpetually isolated and estranged from the world’s information superhighway. Nigeria is lagging behind other African countries such as Uganda, Senegal and South Africa who are already helping secondary school students in those countries to become better information users.For many years, the Nigerian government had a monopolistic control of telecom service, which does not allow for the competitive environments that reduce telephone rates. Partridge (2006) asserted that the penetration of internet hosts is five times greater than in monopoly markets and that internet access in countries with telecommunication competition enjoyed a growth rate five times higher than the monopoly environments. All that may change for Nigeria now as the government had invited private participationin the telecom industry and many investors are already in the Nigeria markets but it will take many years to know their full impact on Nigeria education system.

**Strategies for Improving Computer Studies**

Meeting the challenges of globalization in this present dispensation requires that achievable strategies are adopted for improving computer studies in secondary schools in Nigeria. Such achievable strategies for improving computer studies include:

*Improving Funding required for Computer Studies:* The success of education or of educational programme is hinged on adequate funding. In other words, educational development in any country, whether developed ordeveloping depends on adequate funding. According to Olaitan, (2008), it has been the study of government in executing projects in Nigeria since the colonial period. This was achieved through preparation of annual budget, which were usually made open to citizen of the country through the media (Olaitan, 2008). It is with funding that physical facilities are set up and maintained, equipment procured, goods and services provided and man power employed and maintained.

According to Okafor and Nwankwor (2003) the future of any society depends on the quality of education provided to its young people. Ukeje (1998) brought these ideals system of American University of diversification of sources of fund and suggested that it is not very healthy for the school and what they stand for to be in total dependence on Government for funding. The reality of academic freedom, he pointed out, could require them to have some resources and sources other than the Government, so that they can once device other means of raising fund.

However, Onuoha (2008) suggested that certain factors militate against adequate funding of education in Nigeria and as such these factors can also be related or have special effect on computer studies. Such factors are excessive enrolment of student for education, unsteady price of crude oil, macro-economic variables and corruption Onuoha (2008) is of the view that the following strategies if implemented and some macro-economic control measures taken will improve funding for any institution. First they suggested alternative sources of revenue. By this it means that educational institutions should take measures to increase their internally generated revenue. According to him, through increase of fund allocated to secondary school, establishment of business centers, allowing business men who are interested in the institution to develop and pay rents toschools at the end of the school, encouraging good relationship/links with the institutions-old boy/girls-associations (to enable them pay back to the institution through endowment, grant or donation etc.). He went further to state that investment of cash/ICT facilities received from ICT competitions or debate as well as making schools that offer computer pay extra fee can be a strategy. Furthermore, levies can be imposed on students when collecting their certificates.

*Improving the Availability and Supply of Instructional facility required for Teaching Computer Studies:* The act of receiving instruction is teaching (Nwachukwu, 2001). The concept of teaching and instruction are therefore related in terms of their objectives-impacting knowledge (Nwachukwu, 2001). 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 (2005) in Nworgu(2007) 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. CAI is so effective in thatthey 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 ICT 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 ICT 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-to-day 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.

*Improving Methodology required for Teaching Computer Studies:* It cannot be overemphasized that the successful integration of ICT facilities (Computer) into the school depends on teacher begin aware of the relevance of ICT as a means of providing access to a richer range of resources for themselves and the students (Etuk, 2007). They must also be convinced of the comparative effectiveness of ICT facilities in the classroom over the traditional method of teaching. According to Etuk(2007), teachers need to be properly educated to be morally responsible enough to know and ensure that ICT is not adopted in the classroom as a surrogate teacher but as a means to enhancing innovation, creativity, reflectiveness, confidence and a sense of self-reliance in both the teacher and their pupils.

Teaching methods, materials and equipment involved are presently not familiar to a great number of teachers who were not exposed to these during their years of training (Etuk, 2007). Therefore, teachers need to be prepared to be retrained in other to be computer literate. This knowledge of computer, will enable them prepare students successfully for today information rich and technology driven world. Such strategy for improving teaching methodology includes employment of qualified teachers, use of different teaching methods, provision of adequate facilities, giving of assignment after practical class, use of continuous assessment as a means of evaluating student, provision of proved programs (software) and their corresponding tutorials for easy understanding. Other strategies may include use of individual and group projects in teaching Computer studies, professional development of the teachers, use of improvisation (drawing of computer and its various parts on a card-board) and the use of instructional facilities for teaching Computer studies. A robust technical infrastructure and technical support, for example, internet connectivity, computers and computer instructors/teachers can also be useful. Finally, adopting student-centered learning strategies such as concept mapping, peer tutoring, peer learning methods, group work, e-learning, peer tutoring etc should be encouraged. In the student-centered approach, it is believed that knowledge is constructed by students and the lecturer is only a facilitator of learning rather than a presenter of information. In this way, students become more active participants in the learning process wherever possible and take greater responsibility for their own learning. These strategies can encourage deep level processing of information, make the students efficient, problem solvers and increase ability to develop lifelong learning skills.

**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, 2004). 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 (2004) 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, 2004).

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. CAI 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 onlymethod for evaluation. Student reflection papers, self-reflection journals, and cooperative authentic projects are also included.

**Downes and Siemens’ Conectivism Learning Theories**

Connectivism, a learning theory for the digital age, was developed by George Siemens and Stephen Downes based on their analysis of the limitations of bahaviourism, cognitivism and constructivism to explain the effect technology has had on how we live, how we communicate, and how we learn (wikipedia encyclopedia, 2010). Connectivism also addresses the challenges that many corporation face n knowledge management activity. Knowledge that resides in a database needs to be connected with the right peole in the right context in order to be classified as learning. Information flow within an organization is an important element in an organizational effectiveness.

Connectivism is relevant to this study in that it can be applied to management and leadership in the school system. The ability to management available resources in the school for optimal education achievement of desired educational outcomes is a significant challenge. Realizing that complete knowledge cannot exist in the mind of one person requires a different approach to creating an overview. Furthermore, diverse teams of varying viewpoints are a critical structure for completely exploring ideas. Innovation is also an additional challenge. Most of the revolutionary ideas of today at one time existed as a fringe element. An organizations ability to foster, nurture, and synthesize the impacts of varying views of information is critical to knowledge economy survival.

**Related Empirical Studies**

Uba (2006) undertook a study on strategies for enhancing the teaching and learning of computer in secondary schools in Ebonyi State. The study adopted a surveyresearch design. Four research questions were formulated to guide the study. A 33-item questionnaire was formulated and administered to 190 respondents, which include computer teachers and computer students from eighteen secondary schools in the three zones of the state. Random sampling technique was used in the study while frequency and simple means was used for data analysis. The result of the study revealed that for appropriate methodology, adequate facilities, employment of qualified teachers, establishment of cordial relationship between parents and teachers, instructional materials, practical task and monitoring of students ability and the need for developing problem solving skills to boost students learning abilities for teaching and learning of computer in secondary schools. This is very much related to this work in the both work identified methodology and training of teacher as a strategy for improving or enhancing teaching and learning of computer in secondary schools. However, this study has a similarity with the present work but differ in scope.

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. 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.

Orajekwe (2008) 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 ICT skill by health education teachers. Some recommendations were suggested on what government, PTA, principals, and health education teacher should do such as provision of ICT facilities, development and provision of reliable locally produced software that will be easy to maintain.

**Summary of Literature Reviewed**

The need for Computer studies in our society is uncountable. Its impact will continue to improve the standards of the citizen of our countries. The ability to use computers effectively has become an essential part of education. Despite the roles Computer studies can play in education, secondary schools in Nigeria are yet to extensively adopt them fully for teaching and learning.

With the high demand for computer literate society, the teaching and learning of computer studies becomes a thing of concern to Government and individual alike, no wonder education as other third world countries are fast advancing in technological know-how. In an attempt to improve Computer studies, different strategies has been considered with emphasis on increase funding, improved infrastructural facilities, proper methodology and human resources required for improving Computer studies.The review to this study has recognized that computer studies in secondary schools would result in the production of computer literate citizen who can survive in this era of digital competitiveness where ICT rules the day. Their knowledge of computer has the advantage of aiding their communication both in and outside school. It can also make them self employed upon graduation from secondary school.

**CHAPTER THREE**

**RESEARCH METHODS**

**Research Design**

This study adopted a Descriptive/simple survey research design. A survey research design according to Osuala (2001) centers on individual and their opinion, belief, motivation and behavior. The design was considered suitable since the study will solicit information from respondents in Secondary Schools in Enugu East Local Government Area in Enugu State where Computer Studies is taught.

**Area of the Study**

The study is conducted in Enugu East Local Government Area covering Ibagwa, Abakpa, Amorji, Emene, New Haven, Trans Ekulu. The reason for this area is based on the fact the educational zone has introduced computer studies in the School’scurriculum as well as researcher’s familiarity of the location which will grant her the opportunity to supervise and monitor the whole exercise.

**Population of the Study**

The population of the study comprised all the Junior Secondary School (JSS 1-JSS III) Students in public (Government-Owned) Secondary Schools in Enugu East L.G.A. According to PPSMB (2017) being last year there was total of Nine thousand seven hundred and thirteen (9713) JSS students in the seventeen (17) Public Secondary in Enugu East L.G.A. as at the time of this study.

**Sample and sampling techniques**

The sample for the study was 200 students drawn from the population using random sampling technique. The number of schools used was ten (10) public secondary schools. Twenty (20) JSS students were randomly selected through simple random selection method. The sample was made up of both male and female students and teachers.

**Instrument for data collection**

The researcher made use a structured four scale point rating scale questionnaire in gathering the necessary data suitable for the study. The questionnaire was made up of two sections; section “A” was on the Bio data of the respondents while section “B” was made up of fifteen (15) items.

**Validation of Instrument**

The instrument for the study was subjected to face validity by two experts in Measurement and Evaluation and also by my supervisor for proper scrutiny. The instrument was critically looked at and corrected.

**Reliability of Instrument**

Here in this study, the researcher adopted Internal Consistency method by using Cronbach Alpha test for ascertaining the reliability of the pre-study responses collected through the research instrument. The test was done through SPSS version 17.0. The below is the output of the test.

**Table 1**: **Reliability Test Statistics**

|  |  |
| --- | --- |
| Cronbach’s Alpha | Cronbach’s AlphaBased on Standardized Items |
| .869 | .91 |

Tables 1 above presents the reliability test result of the pilot study response scores which were analyzed through SPSS version 17.0. Using the Nunnally and Bernstein’s (1994) benchmark for internal consistency reliability at 0.70, it shows therefore that, at 0.91 Raw Alpha coefficient, the test instrument designed for the teaching staff of the public and private teaching staff of the secondary schools captured in Enugu state can be said to be Internally Consistent and reliable.

**Method of Data Collection**

Personal visits were made to the ten (10) selected schools for the distribution of the questionnaire. Two hundred (200) copies were distributed to selected students. Two hundred (200) completed copies were also collected back.

**Method of Data Analysis**

In analyzing data collected, mean score was used to achieve this. The four points rating scale will begiven values as follows:

SA = Strongly Agree 4

A = Agree 3

D = Disagree 2

SD = Strongly Disagree 1

**Decision Rule:**

To ascertain the decision rule; this formular was used

$\frac{4+3+2+1}{4}$=$\frac{10}{4}=2.5$

Any score that was 2.5 and above was accepted, while any score that was below 2.5 was rejected. Therefore, 2.5 was the cut-off mean score for decision taken.

**CHAPTER FOUR**

**RESULTS**

This chapter deals with the presentation and analysis of data obtained from the administration of the instrument (questionnaire) of the study. The data are arranged following the order of the research questions that guided the study

**Research question 1**

**What are students-related difficulties affecting teaching of computer studies in secondary schools?**

Table 1: Mean Responses on Students-related Difficulties Affecting learning of computer studies.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **SA****4** | **A 3** | **D 2** | **SD 1** | **X** | **S.D** | **DECISION** |
| 1 | Students tend to show lack of interest in computer lessons  | 150 | 25 | 15 | 10 | 4 | 2.57 | Accepted |
| 2 | Lack of practical makes students devote less time to computer lessons | 100 | 70 | 25 | 5 | 3.4 | 2.55 | Accepted |
| 3 | Students lack adequate problem solving and analytical skills | 170 | 25 | 5 | - | 3.9 | 2.74 | Accepted |
| 4 | Students do not secure adequate textbooks  | 110 | 60 | 20 | 10 | 3.4 | 2.56 | Accepted |
| 5 | Peer group influence and poor parental upbringing  | 90 | 65 | 25 | 20 | 3.2 | 2.47 | Accepted |

In table 1, item1 with mean response of 4 accepted that students tend to show lack of interest in computer lessons. Item 2 with mean score of 3.4 also accepted that lack of practical makes students devote less time to computer lessons. Item 3 with mean score of 3.9 accepted that students lack adequate problem solving and analytical skills. Item 4 with the mean score of 3.4 also accepted that students do not secure adequate textbooks. Item 5 with the mean score of 3.2 accepted that Peer group influence and poor parental upbringing leads to difficulties in teaching of computer studies. Item 1,2,3,4 and 5 have mean scores above 2.50. This indicates that respondents accepted in all the items there are some student-related difficulties affecting teaching of computer studies in secondary schools.

**Research Question 2: What are the School-related Difficulties Affecting Learning of Computer Studies?**

Table 2: Mean responses on school-related difficulties affecting teaching of computer studies.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **SA****4** | **A****3** | **D****2** | **SD****1** | **X** | **S.D** | **DECISION** |
| 6 | Poor and unconducive environment  | 130 | 50 | 15 | 5 | 3.7 | 2.63 | Accepted |
| 7 | Lack of instructional materials for effective teaching and learning  | 200 | - | - | - | 4 | 2.82 | Accepted |
| 8 | Propensity of large class size  | 180 | 15 | 5 | - | 3.8 | 2.76 | Accepted |
| 9 | Lack of adequate supervision | 100 | 60 | 20 | 20 | 3.2 | 2.50 | Accepted |
| 10 | There are Inadequate and unqualified teachers | 150 | 30 | 10 | 10 | 3.8 | 2.65 | Accepted |

In table 2, item 6 with mean response of 3.7 accepted that poor and unconducive environment makes learning computer hard. Item 7 with mean response of 4accepted that there is lack of instructional materials for effective teaching and learning. Item 8 with mean response of 3.8 also accepted that propensity of large class size makes teaching of computer hard. Item 9 with mean response of 3.2accepted that there is lack of adequate supervision. Item 10 with mean response of 3.8 agreed that there are inadequate and unqualified teachers. Item 6, 7, 8, 9 and 10 all have mean scores above 2.50. This indicates that respondents agreed on item 6 to 10 that there are school related factors that makes teaching computer hard.

**Research Question 3**

**What are the strategies for improving the learning of computer studies?**

Table 3: Mean Responses on Strategies for Improving the learning of Computer studies

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **SA****4** | **A****3** | **D****2** | **SD****1** | **X** | **S.D** | **REMARK** |
| 11 | Motivation of students should be part of the pedagogical innovations | 100 | 80 | 20 | - | 3.4 | 2.59 | Accepted |
| 12 | Parents should provide the necessary academic background for their children | 40 | 130 | 20 | 10 | 3.1 | 2.42 | Accepted |
| 13 | The teacher should develop well planned lessons prior to their delivery | 130 | 50 | 13 | 7 | 3.8 | 2.62 | Accepted |
| 14 | Sufficient number of computer teachers should be trained for the Programme. | 100 | 60 | 15 | 25 | 3.3 | 2.49 | Accepted |
| 15 | Government should provide sufficient tools and equipment for the teaching of computer studies  | 120 | 80 | - | - | 3.6 | 2.66 | Accepted |

In table 3, item 11 with mean score of 3.4 accepted the statement that motivation of students should be part of the pedagogical innovations. Item 12 with mean score of 3.1 also accepted that Parents should provide the necessary academic background for their children. Item 13 with mean response of 3.8 accepted that the teacher should develop well planned lessons prior to their delivery. Item 14 with mean response of 3.3 accepted that sufficient number of computer teachers should be trained for the programme. Item 15 with mean score of 3.6 accepted that government should provide sufficient tools and equipment for the teaching of computer studies. Item 11, 12, 13, 14, and 15all have mean scores above 2.50. This indicates that respondents accepted in item 11 to 15 that there are possible strategies to curb difficulties encountered in teaching computer studies in secondary schools.

**CHAPTER FIVE**

**DISCUSSION, CONCLUSION, RECOMMENDATION AND SUMMARY**

The chapter is concisely built on the discussion of the results obtained, the implication of the study to education, conclusion, recommendations, limitations of the study, suggestion for further studies, and summary of study.

**Discussion of findings**

It is important to note that discussion of findings on the difficulties in teaching computer studies in Enugu East Local Government Area of Enugu state are done under the guiding research questions

**Research question 1:**

**What are students-related difficulties affecting learning of computer studies in secondary schools?**

Table 1 with item 1, 2, 3, 4, and 5 dealt with research question 1. It was the opinion of the respondents that the student-related difficulties which includes Students lack of interest in computer lessons, lack of practical which makes students devote less time to computer lessons, students lack of adequate problem solving and analytical skills, students do not secure adequate textbooks, peer group influence and poor parental upbringing of secondary school students in Enugu East Local Government Area. This finding is in agreement with the findings of Aghadino (2014) who observed that the teaching and learning of computer studies in schools has not been quite easy. Often time, people talk about inadequate equipments, facilities, and computers instructional resources for learning and teaching exercise. This proves to a very high extent that student related factors also contribute to difficulties in teaching computer in secondary schools. Dittimiya (2002) stressed that if the above difficultiesare not solved, it will greatly affect the development of human resources needed for national development.

**Research question 2:**

**What are the school-related difficulties affecting learning of computer studies?**

The result of the findings revealed that poor and unconducive environment, lack of instructional materials for effective teaching and learning, propensity of large class size, lack of adequate supervision, inadequate and unqualified teachers. The responses from item 6 to 10 revealed to a very high extent school related factors as one of the difficulties in teaching computer studiesamong secondary school students in Enugu East Local Government Area. This finding is in agreement with Afolabi (2003) and Grissom (2005) who emphasized that the teacher is expected to be academically, physically and intellectually fit in society at large. It was further intimated that the teacher skills, disposition and most especially teacher professional’s status could affect their efficiency at desirable behavior and enhance the academic achievement of the students. Adesoji and Olatunbosun (2008) also stated that whatever the profession, there is need for training to create awareness of the problems of that profession. He stressed that such training, would improve the level of competence for dealing with such problems. This means that schools with stable, experienced and qualified teachers usually have better school facilities in terms of textbooks, equipment and the laboratories than that school which have difficulty in attracting experienced and qualified staff. He further said that attendance at computer laboratory is expected to enhance the understanding of the teachers as to the facilities which are necessary for students’ achievement in computer studies. In-service on the job education create form for further learning which expose the workers to new development and ideas in their area of study. It could also be refreshing courses which make the professional not to lose grips with their skills, attitude or knowledge. In some cases, the reward for such training is promoting to a new rank or the acquisition of better and higher status in essence of this view, absent of this training affect the teachers in delivery of its duties effectively and paying teachers’ enhanced salary to take care of their socio-economic needs to avoid divided attention in their duty.

**Research question 3: What are the strategies for improving the learning of computer studies?**

The finding also revealed that it was the opinion of the respondents that motivation of students should be part of the pedagogical innovations, parents should provide the necessary academic background for their children, the teacher should develop well planned lessons prior to their delivery, sufficient number of computer teachers should be trained for the Programme, Government should provide sufficient tools and equipment for the teaching of computer studies. The opinions of the respondents from item 11 to 15accepted that there are innovative strategies for improving the teaching of computer studies.

This findings is in support of Gary (2011) who asserts that the availability of quality human resources such as staffing, personnel management is necessary because of global competition, technological advancement, economic challenges and fast changing world of work.The findings of the study revealed that to achieve this, there is need to de-emphasize employment based on paper certificates, proven ICT experts as computer teachers be employed, consistent staff developmental activities to be planned, developed and followed up, providing scholarships to teachers and students who distinguishes themselves as well as developing and maintaining appropriate channel of communication between teachers, students and superiors staff like principals, education secretaries etc.The findings further revealed that computer studies teachers and other subject teachers in general should be retrained to become computer literate since a good number were not exposed to computer and its skills during their years of straining (Etuk, 2007). This can be facilitated through the school administrators namely principals and vice-principals in conjunction with cooperate organizations like HP, GLO, MTN, Microsoftetc such as to equip teachers with sound computing skills that will enable them to prepares students successfully for today information and knowledge driven economy.

**Educational Implication of the Findings**

The findings of this study have implications for the Ministry of Education, Commission of Education and Local Government education secretaries and supervisors of Education in Enugu State, curriculum planners, teachers, school administrators and the society at large.

The study provided information on the difficulties and applicable strategies that will improve the teaching of computer studies in secondary schools in EnuguEast Local Government Area of Enugu State. The study implies that the strategies identified will improve the performance of students in terms of acquiring relevant computer skills that will equip them for self or paid employment after schooling.

The findings have implications for school administrators. Computer studies is a technical and skill oriental program, thus requires adequate instructional facilities as well as qualified personnel for the transfer of knowledge. It therefore becomes imperative that these school administrators should endeavour to provide adequate training facilities and create enabling environment for serious academic work to thrive. The findings implied that school administrators should be dynamic in their administrative practices and initiate, support and encourage computer teachers by retraining them in emerging areas of information and communication technology.

The findings of this study have some implications for computer studies teachers. Methods of instructional delivery are activities that will enhance the understanding of students in computer studies subjects. This implies that teachers should keep abreast with recent developments in information and communication technology in order to equip the students with requisite skills. They should make personal effort in acquiring new skillsand knowledge that their job demands and ensuring that appropriate teaching techniques are applied in the classroom during knowledge delivery process.

**Conclusion**

The study concludes that there are some basic strategies that could be adopted in order to improve the teaching of computer studies in secondary schools. The study is of the view that computer studies should provide sound basis for further training in computer studies at the tertiary level of education thus should be relied upon to enable students acquire the basic skills and knowledge needed to either secure a job and earn a living or to pursue further studies in the area computer and information science.

Evidence from the study also revealed that funding strategies for computer studies could be used in improving the teaching of computer studies in secondary schools. It is also found that strategies for improving the availability and supply of instructional facilities as well as teaching methodologies strategies could be used to enhance the teaching of computer studies in secondary schools. It is evident in the study that when students are adequately trained under an improved learning environment where instructional facilities are provided and qualified teachers engaged for the services of teaching and learning applying by proper teaching techniques there is no doubt that the performance of students in computer studies will improve considerably, and as such they are bound to develop a remarkable interest in computer studies and develop the necessary skills required to secure and succeed in the workplace.

**Recommendations**

Based on the findings of the study, the researcher hereby makes the following recommendations:

1. School administrators (Education Secretaries and Principals) should ensure that computer teachers are sponsored on retraining programmes at least twice a year through workshops, seminars and conferences to enable them learn the modern technological skills in their chosen field of endeavour.
2. The school administrators should as a matter of urgency liase with private sectors to provide computers and other instructional materials needed for teaching of computer studies.
3. Parents through the PTA and other major stakeholders of our education should assists our secondary schools by donating instructional facilities like laptops, desktop computers, multimedia, generating sets, internet etc to enable students practice and acquire the skills of computing.

**Limitations of the study**

The research encountered some challenges on the process of carrying this study. They include the following:

* Some of the respondents were reluctant in filling the questionnaire.
* The researcher also encountered financial problem as regards the production of questionnaire.

**Suggestion for further study**

In view of the limitations to this study, the researcher suggests the following for further studies:

1. The study can be replicated in other states of the federation to identify the difficulties and as well proffer strategies to improve the teaching of computer studies in secondary schools.
2. A study should be carried out to determine the training needs of computer studies in post primary schools in Enugu State of Nigeria.

**Summary of the study**

The main purpose of this study was to establish the difficulties in teaching computer studies in secondary schools in Enugu East Local Government Area of Enugu State. In an attempt to focus the study, three research questions were posited to guide the study. Some published and unpublished works of earlier researchers were consulted.

To obtain answers to the questions a fifteen (15) item questionnaire was formulated based on the research questions and was administered to two hundred (200) respondents upon whose responses data was collected and analyzed. The outcome of the analysis based on the responses of the respondents to the questionnaire items revealed that:

There are student related factors that causes difficulty in teaching computer studies.There are school-related factors that cause difficulty in teaching of computer studies in secondary schools.Proffer corrective strategies for improving the teaching of computer studies in secondary schools in Enugu East.

Therefore, it was concluded that it was concluded that there are some basic strategies that could be adopted in other to improve the teaching of computer studies in secondary schools.

**References**

Abimbade, A. (1999). *Principle and practices of education technology*. London:International Publisher Ltd.

Aduwa-Ogiegbaen, E.S&Iyamu, S.O. (2005). Using information and communication technology in secondary schools in Nigeria: Problems and prospects. Educational Technology & Society. Retrieved on 04/28/2005, from *http://www.ifets.info/journals/8-1/13*.

Anao, A.R. (2003). *Society, knowledge, incubation and management*. Lagos: The Guardian Newspapers, November 11, 75.

Ayogu, Z.U. (2008). Computer literacy: A sustainable tool in the information age.*Journal of Education in the information* Age 1, 545-549.

Carlson, S. &Firpo, J. (2001). Integrating computers into teaching: Findings from a 3-year program in 20 developing countries in L.R. Vandervert, L. V. Shavinina& R.A. Cornell (Eds), *Cyber education: The future of distance learning*.Larchmont, NY: Mary Ann Liebert, 85-114.

Edhuze, E.J. (2003). The present status of computer studies in secondary schools in Isoko South LGA of Delta State. *Unpublished Project.*

Etim, F.E. (2006). Resource sharing in the Digital Age: Prospects and problems in African Universities. *Library Philosophy and Practice*, 9(1)

Etuk, G.K. (2007). *Education financing for college and university*. Uyo: Abam Publication Co.

Federal Republic of Nigeria (2004). *National policy on education*. Lagos: NERDC Press.

Gujjar, A.A; Khan, N.; Baigmn, M.N.; Ramza, M. &Saifi, S. (2010). A study to evaluate the availability and utilization of physical and instructional facilities in secondary schools in Bajaur Agency. *International Online Journal of Education Science,* 2(3), 688.

Hammer (2013). Difficulties in learning technical subjects with reference to computer science. *A thesis submitted in partial fulfillment for the award of Masters in Educational Technology, University of Ibadan*.

Jegede, A. O. (2013). Challenges of Sustainability and Urban Development: A Case of Ado-Ekiti, Ekiti State, Nigeria. *International Education Research*, *1*(1), 22 - 29.

Landu, I.T. (2005). Information and communication technology (ICT): Science teachers’ awareness proceeding of the 44th STAN annual conference 41-44.

Nworgu, L.N. (2008). CAI: A strategy for enhancing the effectiveness of biology teaching and learning in the new information age. *Journal of Education in the Information Age*, 1, 228-231.

Nunnally, J. C.and Bernstein, I. H. (1994). *Psychometric theory* (3rded.).New York: McGraw-Hill.

Okebukola, P. (2017). *Old, new and current technology in education*. UNESCO Africa, 14(15), 7-18.

Okorie, E.U. (2012). *Foundations of vocational education*. Enugu: Cheston Agency Ltd.

Olaitan, S.O. (2008). *De-schooling the Nigerian child*. Onitsha: Cape Publishers.

Onuoha, J.C. (2008). Economic of knowledge management in the information age. Global challenges and enhancement strategies. *Journal of Education in the Information Age* 1, 65-70.

Orajekwe, N. (2008). Retooling instruction in secondary schools health education for the information age. *Journals of Education in the Information Age*, 1, 52-58.

Osuala, E.C. (2001). *Foundations of vocational education*. Onitsha: Cape Publishers.

Siemen, G. (2004). A learning theory for the digital age. Retrieved from *http//www.connectivism.ca/.*

Ukeje, B.O. (1998). *Financing education in Nigeria: Future prospect, moving educationin Nigeria toward the year 2000*. Enugu: Optimal Computer Solution Ltd.

**APPENDIX I**

Department of Science and Vocational Education,

Godfrey Okoye University,

Ugwuomu-Nike Enugu,

Enugu State.

April, 2018.

Dear Respondent,

 I am a final year student in the above mentioned university. I am currently carrying out a research on the “Difficulties in teaching computer studies in Enugu East Local Government Area of Enugu state.

You are please requested to respond appropriately in the column or space provided below.

The information you may give is strictly for academic purpose only and will not be used against you in any form. Please, be honest in your responses since name(s) are not needed.

Thanks.

Yours faithfully,

 Onah Ngozi Juliet

**QUESTIONNAIRE**

**SECTION A: PERSONAL DATA OF RESPONDENTS**

SEX: Male [ ] Female [ ]

EDUCATIONAL QUALIFICATION: NCE [ ]OND/HND [ ] Bsc.Ed [ ] WAEC [ ] Students [ ]

NAME OF SCHOOL……..………………………………………………..

SECTION B: Respond by ticking [√] against the column that agrees with your opinion by using the following keys

SA = Strongly Agree 4

A = Agree 3

D = Disagree 2

SD = Strongly Disagree 1

**Research question 1**

**What are students-related difficulties affecting learning of computer studies in secondary schools?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **SA****4** | **A** **3** | **D**  **2** | **SD**  **1** |
| 1 | Students tend to show lack of interest in computer lessons  |  |  |  |  |
| 2 | Lack of practical makes students devote less time to computer lessons |  |  |  |  |
| 3 | Students lack adequate problem solving and analytical skills |  |  |  |  |
| 4 | Students do not secure adequate textbooks  |  |  |  |  |
| 5 | Peer group influence and poor parental upbringing  |  |  |  |  |

**Research Question 2: What are the school-related difficulties affecting learning of computer studies?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **SA****4** | **A****3** | **D****2** | **SD****1** |
| 6 | Poor and unconducive environment  |  |  |  |  |
| 7 | Lack of instructional materials for effective teaching and learning  |  |  |  |  |
| 8 | Propensity of large class size  |  |  |  |  |
| 9 | Lack of adequate supervision |  |  |  |  |
| 10 | There are Inadequate and unqualified teachers |  |  |  |  |

**Research Question 3**

**What are the strategies for improving the learning of computer studies?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **SA****4** | **A****3** | **D****2** | **SD****1** |
| 11 | Motivation of students should be part of the pedagogical innovations |  |  |  |  |
| 12 | Parents should provide the necessary academic background for their children |  |  |  |  |
| 13 | The teacher should develop well planned lessons prior to their delivery |  |  |  |  |
| 14 | Sufficient number of computer teachers should be trained for the Programme. |  |  |  |  |
| 15 | Government should provide sufficient tools and equipment for the teaching of computer studies  |  |  |  |  |

**APPENDIX C**

**ITEM 1**

|  |  |  |
| --- | --- | --- |
| X | X-ˉX | (X-ˉX)2 |
| 600 | 560 | 1120 |
| 75 |  71 |  142 |
| 30 |  26 |  52 |
| 10 |  6 |  12 |

1326 = 6.63

 200

SD= 2.57

**ITEM 2**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 400 | 396.6 | 793.2 |
| 210 | 206.6 | 413.2 |
| 50 |  46.6 |  93.2 |
| 5 |  1.6 |  3.2 |

1348.2= 7.513

 200

SD = 2.55

**ITEM 3**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 680 | 674.1 | 1348.2 |
| 75 |  71.1 |  142.2 |
| 10 |  6.1 |  12.2 |

1502.6=7.513

 200

SD = 2.74

**ITEM 4**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 440 | 436.6 | 873.2 |
| 180 | 176.6 | 353.2 |
| 40 |  36.6 |  73.2 |
| 10 |  6.6 |  13.2 |

1323.8=6.564

 200

SD = 2.56

**ITEM 5**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 360 | 356.8 | 713.6 |
| 195 | 191.8 | 383.6 |
| 50 |  46.8 | 93.6 |
| 20 |  16.8 | 33.6 |

1224.4 = 6.122

 200

SD =2.47

**ITEM 6**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 520 | 516.3 | 1032.6 |
| 150 | 146.3 |  292.6 |
|  30 |  26.3 |  52.6 |
|  5 |  1.3 |  2.6 |

1380.4 = 6.902

 200

 SD = 2.63

**ITEM 7**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 800 | 796 | 1592 |
|  |  |  |
|  |  |  |
|  |  |  |

1592 = 7.76

 200

SD = 2.82

**ITEM 8**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 720 | 716.2 | 1432.4 |
| 45 |  41.2 | 82.4 |
| 10 |  6.2 | 12.4 |
|  |  |  |

1527.2 = 7.636

 200

SD = 2.76

**ITEM 9**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 400 | 396.8 | 793.6 |
| 180 | 176.8 | 353.6 |
| 40 |  36.8 | 73.6 |
| 20 |  16.8 | 33.6 |

1254.4 =6.272

200

SD = 2.50

**ITEM 10**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 600 | 596.2 | 1192.4 |
|  90 |  86.2 |  172.4 |
|  20 |  16.2 |  32.4 |
|  10 |  6.2 |  12.4 |

14096 = 7.048

 200

SD = 2.65

**ITEM 11**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 400 | 396.6 | 793.2 |
| 240 | 236.6 | 473.2 |
| 40 | 36.6 | 73.2 |
|  |  |  |

1339.6 = 6.698

200

SD = 2.59

**ITEM 12**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 160 | 156.9 | 313.8 |
| 390 | 386.9 | 773.8 |
|  40 |  36.9 |  73.8 |
|  10 |  6.9 |  13.8 |

1175.2 = 5.876

200

SD = 2.42

**ITEM 13**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 520 | 516.2 | 1032.4 |
| 150 | 146.2 |  292.4 |
|  26 |  22.2 |  44.4 |
|  7 |  |  6.4 |

1375.6 = 6.878

200

SD = 2.62

**ITEM 14**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 400 | 396.7 | 793.4 |
| 180 | 176.7 | 353.4 |
| 30 |  26.7 |  53.4 |
| 25 |  21.7 |  43.4 |

1243.6 = 6.218

200

SD = 2.49

**ITEM 15**

|  |  |  |
| --- | --- | --- |
| **X** | **X-ˉX** | **(X-ˉX)2** |
| 480 | 476.4 | 952.8 |
| 240 | 236.4 | 472.8 |
|  |  |  |
|  |  |  |

1425.6 = 7.128

200

SD = 2.66