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CHALLENGES IN THE TEACHING AND LEARNING OF COMPUTER SCIENCE IN JUNIOR SECONDARY SCHOOLS IN ENUGU NORTH LOCAL GOVERNMENT AREA OF ENUGU STATE

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Abstract

The main purpose of this study was to assess the challenges of teaching and learning of computer science in junior secondary schools in Enugu North Local Government Area. Two research question guided the study. It was carried out in Enugu North using survey research design. The population of the study consists of all the junior secondary school students in Enugu North Local Government Area which comprises of 12,570 students in 9 secondary schools in Enugu North Local Government Area (PPSMB, 2017). The sample size for the study consists of two hundred (200) students. The instruments were validated by three experts. The reliability of the instrument was established through a trial- test in public secondary schools in Enugu State. The researchers administered the instruments directly on the respondents and collected them back after they were filled by the respondents. Mean was used in analyzing the data obtained. Findings indicated that teacher based factors that affect the teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area are poor teaching method by the teacher, lack of

proper use of available instructional materials while teaching, lack of improvisation of non-available instructional materials, lack of dedication to duty, and inability to foster good student-teacher relationship are teacher based factors, The possible ways to address the challenges of teaching and learning computers studies include, among others, proper funding of education by government, provision of in-service training programme, seminar and workshop, provision of equipped computer laboratory and provision of standby generators.

Keywords: Computer Science, Concept of Teacher Quality, and Challenges of Teaching and Learning of Computer Studies in Secondary schools

Introduction

Computer is a programmable machine designed to perform arithmetic and logical operations automatically and sequentially on the input given by the user and give the desired output after processing (James, 2012). Computer components are divided into two major categories namely hardware and software. Hardware is the machine itself and its connected devices such as monitor, keyboard, mouse etc. (Williams, 2012). Software is a set of programs that makes use of hardware for performing various functions.

Computer science education as it was stipulated by the National Policy on Education (2013) in Nigeria is one of the vocational subjects in the junior secondary schools. The aim and objectives of the federal government in this pre-vocational subject mostly is that at the end of nine years of passing through it students should possess an appropriate level of literacy, numeracy, communication, manipulative and problem solving skills in order to be employable and useful to oneself and the society at large. According to Obiakor, (2019), the use of computer in our educational sector is a growing phenomenon, because searching for work in internet requires the knowledge of computer. The use of Computer Assisted Instruction in Education also requires in-depth knowledge of computer. Since the schools are sweeping along on the incoming tide of new teaching techniques, the old methods used in teaching and learning of computer science are becoming increasing inadequate.

The mastery of a subject is determined by the performance of the students in

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such a subject at a prescribed examination. Any interactive activity between as teaching and the students is expected to produce learning outcomes in the learners. The performance of students in science generally is a major concern to science educators. Anigbogu in Nwankwo and Obiakor (2020) noted that students' performance in computer science is low in both national and state examinations. A number of reasons were identified to be accountable for the poor performance of students in computer science. These include the science curricula, teacher's methods of teaching, parents, government, lack of science facilities and others (Ahiakwo, 2013). Survey from schools (Ajayi, 2017) revealed that inadequacy of good instructional materials, equipment and laboratory facilities in the schools also affect negatively the effective learning of computer studies in the schools. According to Oliver, (2019), student's poor performance in computer studies globally is basically due to lack of involving the students in the teacher learning activities right from the beginning of any new concept to be taught, lack of qualified teaches as well as experiences in teaching and unavailability/or sufficiency of materials.

The teachers are the facilitators who are to impact into the students the concepts expected to be learnt. However, Olarewaju (2016) and Nwagbo (2015) were of the opinion that lack of adequate knowledge by the teachers or neglect of activity-oriented method by the teachers grossly contribute to students' low performance in computer studies. When considering growth in technology, the development of human capital is paramount (Fajonyomi, 2017). This was in line with the view of Ogbazi (2017) who noted that problem of industrial development in Nigeria is that of inadequacy of sufficiently trained human resources and this has been a major constraint on the rate of technological and economic development of the country. The teacher is the major manpower saddled with the responsibility of impacting the concepts considered fundamental to technology through the teaching of these basic concepts from the secondary school. This was why Adeniyi (2013) noted that a country's manpower development depends on the quality of her well-qualified teachers. As stipulated in the Nigeria National Policy on Education, (2014), computer studies teaching at the secondary school is meant to develop essential skills in the learners so as to

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prepare them for the future in order to stimulate and enhance creativity in them. This laudable objective would not be realized when the students are taught by incompetent teachers. Such teachers would not be able to properly and adequately disseminate the concepts to the students. Computer studies, being one of the pivotal subjects, its effective teaching must be handled with all seriousness. The competence of the computer studies teachers in this regards would be of immeasurable value. One thing is to be well grounded in the conceptual understanding of a subject; another thing is to be well acquainted with the best method to pass the concepts across to the learners for proper comprehension. A professional teacher would be desirable in this regard.

The issue of professionalism in teaching has been on course for quite some decades ago. Scholars argued the necessity of skilled teachers for effective learning. Ngada in Fajonyomi (2017) emphasized that the success or failure of any educational programme rests majorly on the adequate availability of qualified (professional), competent and dedicated teachers. Seweje & Jegede (2017) noted that the ability of a teacher to teach is not derived only from one's academic background but it is based upon outstanding pedagogical skill acquired. The realization of the national growth in technology as highlighted in the Nigeria National Policy on Education hinges (among others) largely on the quality of the computer studies teachers. This view is supported by Nkwodimah's (2013) submission that the teacher's quality will inevitably be seen in the citizens tomorrow. Okebukola in Ngada (2018) while remarking on teachers' quality observed that over 80% of respondents in a survey research were of the view that teachers are carriers of weaknesses. These weaknesses include, among others, inadequate exposure to teaching practice, poor classroom management and control, shallow mastery of subject matter and lack of professionalism. From Ajayi's (2017) point of view, the professional qualities of a teacher have to do with the following:

- Mastery of the subject matter
- Sense of organization
- Ability to clarify ideas
- Ability to motivate students
- Good imagination
- Ability to involve the student in meaningful activities throughout the period of teaching

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- Management of the details of learning.
- Frequent monitoring of students' progress through tests, formal and informal, written and oral quizzes.

The availability of professional teachers in our schools is low (Ngada, 2018). The reasons may not be farfetched. Teaching is seen as a dumping ground for any unemployed school leavers, irrespective of their area of specialization. This group of able bodies young men and women thus handle the job as a bye-pass venture to their desired ends. Consequently, their input on the job would be very low since it lacks the dedication demanded by the job.

The resultant effect on the student's performance is catastrophic. The major evil done by this is half-baked and shallow-knowledge students who often perform poorly in their examinations. This eventually culminates to a decline in the national technological growth.

Based on this the researcher aims at finding out the challenges of computer studies teachers in teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area.

Statement of the Problem

In realizing of important role which computer education plays as an agent of National development and globalization, there has been agitation for more functional and qualitative education all over the world. This agitation has not been matched with commensurate effort aimed at bringing computer to the people. This gap has been in existence for very long time.

Due to the fact that computer studies has failed to take off in majority of school, fears are that technological development may be a pipe dream for country. Given this scenario, it is necessary for this study to look in the main challenges of computer studies teachers in teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area has not been ascertained hence the need for this research work. The question to be answered by this current study is: what are the challenges faced by computer science teachers in schools?

Research Questions

The following research questions will guide the study:

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1. What are the teachers based factors that affect the teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area?
2. What are the possible ways to address the challenges of teaching and learning computer studies in junior secondary schools in Enugu North Local Government Area?

Review of Related Literature

Concept of Teacher Quality

Muriel (2015) opined that quality concept is based on the premise that people will take a greater interest in and improve the productivity of their work if they can become more involved in the decision making process. In this way the workers improve both their self-image and their working environment. In the same vein, Oakland (2014) posited that quality is the totality of features and characteristics of a product of service that bear on its ability to satisfy stated or implied needs. According to the Lexicon Webster's dictionary (2007), quality is a grade, a degree of excellence, especially a high degree of goodness or worth. Therefore quality can be said to be an agreed level of goods and services. Quality can then be said to mark a level of acceptance or satisfied excellence of teaching/learning process in the school. Ejiofor and Aniagoh (2014) explained that the quality of personnel determines the products and services they render, no organization can rise above the quality of its staff, without personnel, all other factors or production will remain in their natural untapped state.

It is therefore imperative that all products and services should possess a high quality in order to appease the would be customers (learners), stand the test of time and also produce the expected results. Like personnel in other fields o human endeavour, teachers in schools who are at the center of learning are equally expected to possess the desirable personal and professional qualities that will enable them perform well and achieve the aims and objectives of education as spelt out in the National Policy on Education (James, 2014). Since education has been identified as one of the important key that unlock the door of success in life, it therefore implies that the teacher is the person that holds the key to modernization. He can also be described as a person that imparts knowledge, a director of learning, an instructor, a disciplinarian,

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a pace-setter, an evaluator and a judge (Abdulkareem, 2019).

According to John (2013), teacher education in Nigeria is conditioned by historical and social factors. Like in most countries o the world, the provision of adequate facilities and finance for teacher education has lagged behind the provision of similar inputs in other fields of education. The issue of demand and supply of teachers, according to John (2013), stated that next to students, teachers are the largest, most extensive and crucial inputs of an educational system. In the light of this, there should be production of high quality teachers who have good academic knowledge of their subject disciplines and who possess professional skills, experience, administrative responsibility, attitudes and values as well as personal qualities for effective teaching.

It is believed that the more experienced a teacher is the more productive he will be in his teaching and the more like his students will perform more brilliantly academically in school examinations than those students taught by an inexperienced teacher. Oakland (2014) opined that the success of any educational enterprise depends solely upon the quality of teachers employed to run the instructional programmes in the school system. Their duties and functions which determine their quality vary widely. It is also of importance to note that their functions dictate the size, rules, policies and the general organization of their institutions. No wonder the Federal Government decided that teachers' education be given a major emphasis in all educational planning because no education system can rise above the quality of its teachers (FRN, 2004). In the same vein, Obanya (2013) opined that like the case in any other area of human activity, a teacher should have both natural and acquired characteristics to be able to perform satisfactorily. Natural qualities are traits which the typical teacher is born with, while acquired characteristics are, in addition to natural traits, those that come through learning. The teacher needs to develop his human and academic qualities which will make him/her a better teacher, such as personality qualities, physical energy, perseverance, responsibility, initiative, self-control, decisiveness, humour, sincerity, loyalty, leadership and academic qualities.

Teachers are important and make a difference. The quality of teaching is a crucial factor in promoting effective

learning in schools. Teaching is an art in the sense that teachers, like painters, composers, actresses and dancers, make judgment based largely on qualities that unfold during the course of action. Qualitative forms of intelligence are used to select, control and organize classroom qualities such as tempo, tone, climate, pace of discussion and forward movement. The teacher must 'read' the emerging qualities and respond with qualities appropriate to the ends sought or the direction he or she wishes the students to take. In the process, qualitative judgment is exercised in the interest of achieving a qualitative end. Teachers come in all assorted sizes, shapes, weight and colours. However, they share one common creed: to help each child reach the highest possible degree of persona development.

Carleton (2012) posited that teacher must have the energy of a harnesses volcano, the efficiency of an adding machine, the memory of an elephant, the understanding of a psychiatrist, the wisdom of Solomon, the tenacity of a spider, the patience of a turtle trying to cross the highway in a rush hour traffic, the decidedness of a general, the diplomacy of an ambassador, the financial acumen of stock and bonds wizard, and finally to always remember that teachers teach not by word by mostly by precept and example. So in addition to being all of the above, teachers must always remember that they are eye and ears of relative. They have to demonstrate not only professional competencies and skills, but also social responsibility as mirrors of the society.

Another indicator of teacher quality is teacher experience. If teacher learning accumulates with longer years of teaching practice, experienced teachers should be more effective than novice teaches in improving students' achievement. Many empirical studies have indeed shown a significant and positive relationship between number of years and students' achievement (Eze, 2013). It has been observed that there were positive significant relationship between teaching experience and students academic performance. Thus, Omenyi, (2016) and Nwankwo, (2018) in their respective studies agreed that high quality teachers through professional training will eventually ensure high quality job. In a related contribution, Emenike (2018) believed that a teacher's insights, concepts and personal traits will assist him in improving his academic and professional qualification. Also,

Ezeugbo, (2015) in his own study believed that teachers' welfare should be of importance to everyone who has something to do with educational development in Nigeria. While Ikediugwu, (2017) claimed that teachers' academic and professional qualification degree have influence on teacher productivity.

Teacher quality is the crucial driving force for improving students' academic performance and thus promoting a nation's economic competitiveness in the global society. In addition to the academic qualification, Oliver (2019) took a closer look at some of the personality traits of the teacher, some of these traits are: initiative, foresight, patience, respect, sympathy, flexibility, firmness, honesty, intellectual curiosity and keenness.

a. **Initiative:** It is important that those to whom we desire to entrust the life and future of our future leaders must be full of initiative to know what to do in varying circumstance.
b. **Foresight:** Teachers need to carry their students along always and the must be patient enough to see that everybody benefits from their initiative. A learner needs to be able to learn effectively and so the teacher needs to be patient enough to see that optimum condition for effective learning is created and made use of.
c. **Patience and Sympathy:** Especially when the teachers are surrounded by children of divergent view, backgrounds and readiness to learn. The patient teacher is the answer to individual work in a modern classroom where there are as many units as there are children, each trying to move forward at his or her own pace.
d. **Respect:** This should be one of the most important personality traits required of a teacher not only for teaching purposes but as a model for his students. A rude and unrefined teacher can hardly last a month in his job for he will constantly get it back from the public, from parents, from his employers, his colleagues and even his own students such that he will be forced to quit in frustration and shame within a short time.
e. **Sympathy:** The teacher should be someone who would share his or her feeling with pity and

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tenderness, this encourages him or her to make the necessary effort to blossom and feel satisfied. The teacher needs to be sympathetic not only in classroom situations but also in administrative matters involving lateness, pilfering, inherent cruelty in some students. parents' ignorance leading to oppression or suppression in the child's home. We all need someone's sympathy at one time or another, especially in situations beyond our control and once we get it we are better for it. A good teacher should not allow his or her pupils to commit academic or social suicide for lack of such sympathy as he can readily give.

f. Flexibility: A good teacher must be flexible. He must be able to listen to his students and modify his stand without sacrificing principles. It is only the both sides of the mater to bring out what is helpful to his students without changing the rules or condemning his pupils. Flexibility does not necessarily mean being unprincipled but being liberal and accommodating in a progressive way. Flexible individual are said to make better managers of men and materials.

g. Firmness: Anybody aspiring to become a distinguished manager of men and materials must cultivate firmness for without it he would simply be tossed up and down, right and left without achieving anything. It is most desirable that anyone going to be put in charge of children and teenagers must be highly principled and disciplined and be very firm with them, otherwise he would ruin himself and damage the careers of his students in no time.

h. Honesty: We all know that honesty is the best policy and the truth exalts a nation. No nation can develop and progress without establishing truth and honesty in all its institutions of learning. So anybody who aspires to teach in any school or college must be transparently honest and a seeker of truth. The teacher must possess this trait and pass it on to his students. cheating is dishonest, favouritism is dishonest,

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punishing anybody unjustly is dishonest, rumor-mongering is dishonest and these should be avoided by all good citizens, especially anybody who aspires to teach children.

i. **Intellectual Curiosity:** Some people are good workers, they do whatever they are asked to do well but have little or no initiatives and are not curious to know more about what they have been asked to do or anything else. Such people cannot be good teachers because they cannot inspire their students. they do not have the urge to find out thing what are extraordinary in order to distinguish themselves and inspire others. Teachers should be mentally alert and responsive to situations around them so as to participate actively.

j. **Keenness:** Keenness is a quality that promotes efficiency and success. It means being diligent or eager to achieve. In another sense, keenness means being sensitive and sharp, not allowing things to happened around one without noticing them. In this sense, it puts the teacher squarely in charge of his class and gives the assurance that he is in control. The keen teacher is all eyes and ears when conducting his lessons, he is too sensitive to be taken for a ride and too sharp to be out-played by tricksters and jokers trying to divert his attention to their advantage. Keenness is the key to a successful lesson in the classroom if the teacher knows his stuff and masters his methodology

Challenges of Teaching and Learning of Computer Studies in Secondary schools

Before an attempt is made to discuss some of these challenges, the researchers would like to give a reasonably clear meaning of teaching and learning. Nwankwo and Obiakor (2020) describe teaching as series of goals oriented interaction between the teacher and the learner in order to impart knowledge. The further explained teaching as a cluster of activities which involve imparting knowledge, attending to and organizing learning outcomes, preparation of lesson plans, evaluating learning outcomes, general supervision and guidance, classroom management, keeping school

records etc. teaching is seen as a deliberate attempt to impart knowledge.

Accordingly, the most common challenges associated with the teaching and learning of computer studies today as noted by Obiakor (2019) are:

- **Lack of Qualified Teachers and Instructional Materials:** The quality of performance of any teacher is a measure of some crucial elements. These include his personality, previous experience, the instructional materials at his disposal, his chosen methods techniques used in passing information across to the students. The school authorities and the government therefore, have the moral responsibility to provide these vital instructional needs which can facilitate effective achievement of teachers/students interaction. Some Nigerians are not aware of the existence and importance of the computer (Adomiet, 2013). It has been reported that 75 percent of the teachers in the NEPAD's e-Schools Project have no or very limited experience and expertise regarding computer in education (Adomi and Kpangban, 2010). Most of the secondary schools do not have computer teachers. You find a situation whereby someone who has no good knowledge of computer is being employed to teach computer studies. This limits the level of knowledge imparted to the students and restricts their ability to access existing knowledge and generate new idea.
- **High Cost of Computer Facilities:** Cost has been reported as one of the challenges which influence provision and use of computer services (Adomi, 2010). The cost of computers is too high for many to afford. Monthly Internet rates are exorbitant and the charges for satellite television are unaffordable for most people in Africa (Brakel and Chiseuga, 2013). This has made it difficult for Nigerian secondary schools to acquire and install computer facilities for the use of teachers and students.
- **Inadequate Funding:** Inadequate funding is one of the numerous problems facing the teaching and learning of computer science in our

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secondary schools today. These are financial constraints facing the school act as a major hindrance or obstacle in providing adequate facilities and equipment for teaching computer. The fund allocated to most of these secondary schools cannot cater for the entire running of the school system and this constitute the reason why we have very few or no computer in most of the secondary schools.

- **Problem of Accessibility:** Oliver, (2019) clearly explain that the majority of the students do not have access to the use of personal computer. This problem could be traced to the socio-economic background of the learners. This constitutes some of the reasons why most secondary schools teach computer science as a subject without computers. Every computer lesson is supposed to be a practical class. But directly opposite is the exact case of what we have in our secondary schools. This fosters in the students the notion that computer is a magic box which can only be talked about or drawn on paper but not easily accessible.
- **Lack of Power Supply and Maintenance:** Instability in electricity supply is observed to have posed a major setback in the few available computer laboratories. Many secondary schools are not connected to public power supply. Therefore setting up computer laboratories in such schools is bound to suffer setback. This will incur additional cost as any installation has to be supported by a generator or an alternative power supply system (UPS). There is need for high air conditioning and above all, a dust free environment. Sometimes when power supply cut off, students have to stop what they are doing without hope of restoration of light and when this happens, it cuts them off from what they are actually learning. Adomi and Kpangban (2018) reported that electricity failure has been a persistent problem militating against computer application and use in Nigeria. This makes the few schools with computer

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facilities unable to use them regularly.

Constructivist Learning Theory (Jerome Bruner, 1960)

Constructivist learning theory propounded by Jerome Brune 1960-1989) has been used to study the problems that militate against teaching and learning of computer studies in junior secondary schools. This learning theory contributes to understanding both the construction of and relationship between curricula and events. It also provides direction for research and implementation. Because of the influence of the constructivist learning movement, the theory of constructive learning emphasizes the teachers' central role in academic curricula and suggests improvement according to the teachers' needs and interest (Omenyi and Nwankwo, 2018). This theory supports the individual's growth and enables the students to explore their learning potential. Despite the theorists' different definitions of learning, a majority are agree that learning happens when experience leads to a constant change in the individuals' knowledge or manner, Weiten, (2012). What is meant by "experience" in this definition is the interaction of the person with his or her environment" Woolfolk, (2006).

Constructive Classrooms

Constructivist theory emphasizes the importance of experience and learning based on experiments. Students play a pivotal role in the learning process. The teacher's role appears in directing and supporting students to construct meaning and understand situation. Practitioners and scientists have claimed that constructionism cannot be implemented in a traditional knowledge environment. They suppose that constructionism goes beyond formal learning which relates to students' previous experience. Oliver (2019) acknowledge the pointlessness" or avoiding direct teaching, especially when teaching children, with the conclusion that it is ineffective to depend solely on constructionist teaching patterns. Constructionism differs from other educational practices in that most other types of learning emphasize the importance of acquisition of knowledge and information. The essence of constructionism appears in the individual's personal experience of learning and reflection; Ikediugwu, (2017). During the learning process, students' activities are considered

important and basic for constructing knowledge. Meaningful learning occurs when there is collaboration among learners, teachers, and specialists in this domain. Activities are not organized officially inside constructionist classrooms through timetables or plans that students are required to follow. Students actively help in planning and organizing the activities within the classroom. This contributes to stimulating and encouraging them to think. The methods of teaching and learning are characterized by flexibility and comprehending students' viewpoints and thoughts Obiakor, (2017); learning focuses on thoughts instead of facts; the learning process implies interaction between students and teachers; focus on the construction of knowledge instead of repetition; encouraging and supporting dialogue and discourse within a complicated world which involves various representations of knowledge; students" interest define learning; and learning experiences emphasize the prominence of realistic activities.

Empirical Studies

A study by James (2012) examined the problems militating against computer education and its effect on the secondary schools curriculum in Umuahia North Local Government Area of Abia State, Nigeria from the perception of principals and teachers in the L.G.A. The study adopted descriptive survey method. Random sampling technique was used to sample 350 respondents from 14(fourteen) secondary schools. Data were gathered through the use of questionnaire and interview. The use of these two instruments enabled data triangulation thus enhancing data validity and reliability. Major findings of the study revealed that there were no budgets for computer procurement in the majority of the schools. Funds were inadequate for computer procurement as various governments did not avail financial for computer procurement. However, stakeholders were willing to contribute for the purchase of computers for computer education. Other results showed that there were not adequate qualified teachers to teacher computer education in the schools. Those teachers who taught the subject were not willing to teach the subject most likely due to shortages in equipment and unavailability of in-service computer training programmes. On a positive note heads of secondary schools and students had a positive attitude towards computer education. The study recommended that

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government should make compulsory for schools to offer computer education at all level through policy statement that should be enforced. Teacher training institution should incorporate computer education into their curriculum. Teachers should be offered administrative and technical support through in-service training programmes.

Summary of the Literature

Education remains a single major factor for national development. The teacher in centre in this enterprise, and no tool has been able to replace the teacher yet; this is because no educational system can rise above its teacher (Anigbogu, 2018). The teacher holds the remedy to the many problem ravaging in Nigeria. The teachers' efficiency maters in these regards. Professionalizing teaching should undoubtedly therefore assume strategic position in our drive towards national development; and in our quest of making Nigeria one of the top 20 economies in the world by the year 2020 (Williams, 2011).

From the literature reviewed so far and on the basis of the theoretical framework examined, it can be seen that the quality of teachers to a large extent determines the quality of students. evidences have shown that standard of education has fallen despite the huge sum of money the government has invested in education. Examination malpractice, moral decadence and poor job performance are some of the indices of poor standard of education in Nigeria secondary schools in general and schools in Enugu North Local Government Area in particular. The review has shown that a lot of work has been done on quality control and quality assurance and how to maintain quality in the educational system. If a teacher is academically sound, professionally trrszzzzecompetent and possessed good character traits, he is expected to be able to discharge his duties effectively as a teacher.

The empirical studies centered on the problems militating against compute education and its effect on the secondary school curriculum in Umuahia North Local Government Area of Abia State from the perception of principals and teachers

Research Design

The research design adopted for this study was survey. According to Iketaku (2011), survey design is one in which a group of people or items are studied collecting and analyzing data from only a few items considered to be

representative of the entire group. The design is used to elicit different opinions of people on an issue of wide concern. It is a design that enables us to describe a number of decision which need to be taken regarding the collection of data before ever the data are collected. These decisions must be undertaken through a systematic and scientific process. The study was carried out in Enugu North Local Government Area in Enugu State. Enugu North Local Government Area was surrounded by Enugu South, Enugu West and Enugu East Local Government Area.

The population of the study consist of all the junior secondary school students in Enugu North Local Government Area which comprises of 12,570 students in 9 secondary schools in Enugu North Local Government Area (PPSMB, 2017).

The sample size for the study consists of two hundred (200) students. The simple random sampling procedure was adopted to sample 5 government secondary schools in Enugu North Local Government Area of Enugu State. Forty (40) students were sampled from each of the five sampled schools using random sampling technique of balloting without replacement.

The instrument for data collection was a structured questionnaire developed by the researcher. The instrument was sub-divided into two major sections. Part I of the questionnaire was used to collect personal data of the respondent. Part II dealt with the main questionnaire. This part II contained structured items generated from the research questions posed for the study. The respondents were required to tick (√) in the box provided for their responses. The response options of the questionnaire were structured using four (4) points rating scale: strongly Agreed (SA), Agreed (A), Disagreed (D), and strongly disagreed (SD).

The instrument was validated by three experts, two from Department of Computer Science Education and one from Department of Measurement and Evaluation in Enugu State College of Education (Technical), Enugu. The experts critically examined the items and made corrections where necessary. The instrument was finally rewritten by the researcher by integrating the suggestions and corrections pointed out by the experts.

In order to determine how reliable the instrument was, test-retest reliability procedure was adopted. Thirty copies of

the questionnaire were given to thirty secondary school students in Enugu South Local Government Area, after an interval of two weeks, the instrument was re-administered to the same group. Two set of scores obtained were correlated using the Pearson Product Moment Correlation Co-efficient. The degree of stability of the test obtained was 0.68. This showed that the test is highly correlative.

A structured questionnaire was employed in the collection of data; the researcher distributed the copies of the questionnaire directly to the respondents and collected them back after they were filled by the respondents.

Mean was used in analyzing the data obtained

Analysis of Data

The data collected for the study were presented and analyzed in this chapter based on the research questions that guided the study. The data analyses were as follows:

Research Question One

What are the teacher-based factors that affect the teaching and learning of computer studies in junior secondary school in Enugu North Local Government Area?

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Table 1: Analyses of responses on the teacher based factors that affect the teaching and learning of computer studies in Junior Secondary Schools in Enugu North Local Government Area of Enugu State.

S/N	Items	SA	A	D	SD	N	∑FX	Mean	Remarks
1.	Poor teaching method by the teacher	160	30	5	5	200	745	3.73	Agreed
2.	Lack of proper use of available instructional materials while teaching	120	60	15	5	200	695	3.48	Agreed
3.	Lack of improvisation of non-available instructional materials	70	50	40	40	200	550	2.75	Agreed
4.	Lack of dedication to duty	100	40	30	30	200	610	3.05	Agreed
5.	The use of local language in teaching the students	90	50	30	30	200	600	3.00	Agreed
6.	Inability to foster good student-teacher relationship	90	20	20	70	200	530	2.65	Agreed

The results of data analysis in table one indicated that items 1-6 had means scores of 3.73, 3.48, 2.75, 3.05, 3.00 and 2.65 respectively which are above the cut off of 2.5. This indicates that the respondents agreed that all the items are teacher based factors that affects the teaching and learning of computer studies in senior secondary schools in Enugu North Local Government Area of Enugu

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Research Question two

What are the possible ways to address the challenges of teaching and learning computer studies in junior secondary schools in Enugu North Local Government Area?

Table 2: Analyses of responses on the possible ways to address the challenges of teaching and learning computer studies in junior secondary schools in Enugu North Local Government Area.

S/N	**Items**	**SA**	**A**	**D**	**SD**	**N**	**∑FX**	**Mean**	**Remarks**
7	Proper funding of education by government	160	30	5	5	200	745	3.73	Agreed
8	Provision of in-service programmes, seminar and workshop	120	60	15	5	200	695	3.48	Agreed
9	Provision of equipped computer laboratory	70	50	40	40	200	550	2.75	Agreed
10	Provision of appropriate computer textbooks	100	40	30	30	200	610	3.05	Agreed
11	Provision of standby generators	90	50	30	30	200	600	3.00	Agreed
12	Provision of e-library	90	20	20	70	200	530	2.65	Agreed
13	Provision of internet services	80	60	30	30	200	590	2.95	Agreed
14	Prompt payment of teachers' salaries	100	50	40	10	200	640	3.20	Agreed
15	Adequate supervision of teaching and learning process	70	60	40	30	200	570	2.85	Agreed

The results of data analysis in table 2 indicated that items 7-15 had means scores of 3.73, 3.48, 2.75,3.05, 3.00, 2.65, 2.95, 3.20 and 2.85 respectively which are above the cut off of 2.5. This indicates that the respondents agreed that all the items are the

possible ways to address the challenges of teaching and learning of computer studies in senior secondary schools in Enugu North Local Government Area of Enugu

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Summary of Findings

Based on the analyses made, the following is the summary of major findings.

1. The teacher based factors that affect the teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area are not limited to poor teaching method by the teacher, lack of proper use of available instructional materials while teaching.
2. The possible ways to address the challenges of teaching and learning computers studies include, among others, proper funding of education by government, provision of in-service training programme, seminar and workshop, provision of equipped computer laboratory and provision of standby generators.

Discussion of the Findings

The discussion in this section dwelt on the results of data analysis presented

The findings on research question one as presented in table 1 revealed the teacher based factors that affect the teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area. The entire respondents agree that poor teaching method by the teacher, lack of proper use of available instructional materials while teaching, lack of improvisation of non-available instructional materials, lack of dedication to duty, and inability to foster good student-teacher relationship are teacher based factors that affect the teaching and learning of computer studies in junior secondary school in Enugu North Local Government Area. This finding is in agreement with Okechukwu (2018) that lack of improvisation of non-available instructional materials are teacher based factors that affect teaching and learning of computer studies in Enugu North Local Government Area of Enugu State.

Finally, the findings on research question five as presented in table. 2: revealed the possible ways to address the challenges of teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area of Enugu State. Specifically, proper funding of education by government, provision of in-service training programme, seminar

and workshop, provision of equipped computer laboratory, provision of standby laboratory etc. are the possible ways to address the challenges of teaching and learning computer studies in junior secondary schools in Enugu North Local Government Area of Enugu State. These findings are in agreement with Openg (2012), that one of possible ways to address the challenges of teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area of Enugu State is prompt payment of teacher's salaries. Therefore, government should adequately supervise teaching and learning process.

Conclusion

The purpose of this study was to find out the challenges of computer studies teachers in teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area of Enugu State.

In order to do this effectively, five research questions were formulated by the researcher. A review of related literature was carried out to highlight other peoples' view on the topic. A total of 200 respondents were sampled in the five selected schools.

Later, the data collected were analyzed and represented in tables.

Considering those numerous challenges of computer studies in teaching and learning of computer studies in junior secondary schools in Enugu North Local Government Area, there is need for proper funding of basic science knowledge, values and skills for survival and better living condition.

Based on the findings, the researcher concluded that qualified and competent computer studies teachers should be employed to teach computer studies in Enugu North Local Government Area of Enugu State.

Recommendations

The following recommendations were made by the researcher based on the findings

1. The State Government should employ and post more qualified and competent teachers in computer science to different Junior Secondary Schools especially in Enugu North Local Government Area.
2. The Government should provide a well equipped computer laboratory to our junior secondary schools.
3. Adequate practical class should be held in schools. Practical classes

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should be given double periods in the school time table for effective teaching and learning. The teachers should also endeavor to make use of science laboratory facilities during teaching and also improvise equipment where applicable.

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