# EXAMINE THE USE OF COMPUTERS IN CLASSROOM INSTRUCTION OF BASIC TECHNOLOGY AT SOME SELECTED JUNIOR SECONDARY SCHOOLS IN GIREI LOCAL GOVERNMENT AREA, ADAMAWA STATE

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## ABSTRACT
This study looked at how computers are used in some junior secondary schools in Girei Local Government Adamawa State. Due to their inability of students to interact with the teaching environment, such as through computers, when teaching and learning Basic Technology educators were unable to effectively use instructional materials. 310 students and 46 Basic Technology teachers from five junior secondary schools was participated in the study. Krejcie and Morgan (1970) were used in the selection of 1,548 students and teachers from Adamawa State Government Secondary Schools for the study's sample. From various respondents, a questionnaire was used to collect data. The instrument's Cronbach Alpha was 0.81 and the researcher employed Mean and standard deviation in decision rule. All hypotheses in the study were tested with a 0.05 t-test. According to the study, the computers in Adamawa State's secondary schools were adequate for teaching and learning Basic Technology. However, using computers to teach and learn Basic Technology in Adamawa State Secondary Schools is difficult due to a lack of computer hardware, infrastructure, and power supply. The study suggested that the provision of computer hardware and software be prioritized.

**Keywords:** Computer, Basic Technology, Instructional Material, and Education

## INTRODUCTION
The world has witnessed an exponential increase in the number of technological innovations. This period saw the introduction of the electronic computer system, as well as the introduction of other emerging technologies. At this point in time, the use of computer technology can be found in almost every facet of human organizational roles and educational settings, and it is becoming increasingly prevalent.

Virtually all aspects of human endeavours are now facilitated by the computer. There has been a great deal written about it and its relevance to all aspects of human endeavour, including “computer/information technology, engineering, agriculture etc”. However, there hasn't been a lot of work done on computers, their applications, and their significance to education. This work seeks to fill that void by discussing the significance of the topic in the educational field. In schools, computer technology is currently one of the most far-reaching and rapidly expanding developments in educational history. Countries all over the world are making concessions in the direction of the current craze of computer education, similar on a plantation of maize during a storm (Joseph, 1990 and Macaulay, 1993).

The advancement of science and technology has brought to the forefront the critical role that computers play in the field of information technology and other fields. It is a completely new educational system. According to Sherman (2005), the emergence of the digital computer system into the educational lexicon allows for the solution of teaching and learning problems to be solved more accurately and quickly than was previously possible. As a result, the computer system has risen to the status of the doyen of humanity as it continues to gain widespread

awarenes. Computers have risen to the status of 'nosology' in our society and may even be used in the future (Jayesimi, 2004).

When it comes to education, computers are widely used, and the demand for computer literacy and computer technology education is becoming increasingly important in the system. It has been discovered that using a computer to present an instructional program is an effective method of doing so. The use of computers in the classroom; computers according McCormick (2003), can be used to broaden, develop, and enhance the educational relationship between teaching and learning Furthermore, proper acquisition of scientific knowledge is essential for the advancement of technological development, and this can be accomplished through appropriate training in computer science and education, and mathematics programs. As a direct consequence of this, the Federal Government of Nigeria enacted the "National Policy on Computer Literacy at the Primary, Secondary, and Tertiary Levels of Education in the year 1988". This policy had the following broad goals in mind when it was created:

Because of the increasing convergence of computer technology and communication, the computer has the potential to transform the educational system. It also has the potential to provide individuals and students with a thorough understanding of the concept of a computer to be successful in the twenty-first century.

According to the participants, the National Program on Computer Education, which was established by the Federal Government of Nigeria, was greeted with open arms and hailed as a technological innovation in the educational practice in Nigerian institutions of higher learning.

This is because the participants felt that the National Program on Computer Education represented an innovation in educational practice that made use of new technology. Computer education was viewed as a new instructional system that was intended to improve the quality of teaching and learning while also contributing to the advancement of technology and socio-economic development in developing countries. This goal was intended to be accomplished through the implementation of computer education. Furthermore, according to Professor Jibril Aminu, who was the Federal Minister of Education at the time, and who addressed the Adhoc Committee on Computer Literacy in Nigeria, the goals of the Computer Education program in the country included, among other things, the following goals:

i. In a short time, create a computer-literate society in Nigeria.
ii. To enable today's schoolchildren at all levels to appreciate the computer's potential; and
iii. To enable them to use the computer in a variety of life activities and later occupations.

With these commendable goals in mind, in 1997, all state governments in Nigeria adopted the Federal Government's policy of introducing computer education and literacy in secondary schools, with the following broad objectives:

i. To promote computer literacy in each of Nigeria's states.
ii. To promote the use of computers as a teaching tool in all subject areas, as well as to familiarize students with computer technology.
iii. To enable the current generation of secondary school students to appreciate the computer's potential and to be able to use it in various aspects of life and later occupations; and
iv. To expose teachers and students to the most up-to-date scientific knowledge and skills.

From the foregoing, it can be concluded that introducing computers into the Nigerian educational system is a step in the right direction, given the importance of computers to learning. Despite its importance, the computer has yet to take root in Nigerian schools, let alone the entire society. Its impact on our students, in particular, is minimal. Its implementation in our society faces some challenges. Listed below are some challenges.

Computer education faces educational and administrative challenges. The main administrative issue is cost. Computers have always been expensive. This has hindered the use of computers in

most Nigerian secondary schools. Also exorbitant is the cost of software, which follows the same pattern as hardware. Installation, maintenance, and replacement costs are unavoidable when purchasing computers for educational purposes.

Nigeria's economic crisis has hampered the government's ability to fund education. Education in Nigeria has been hindered by a lack of funding and a lack of technological capability.

Also, the dearth of trained personnel militates against using computers to teach. Computer experts are rare, except for profit-driven computer dealers. This leaves a shortage of computer programmers, analysts, and technicians to support and develop large-scale educational computer courseware (Salisbury, 1998).

Another barrier to using computers in the classroom is the Nigerian teachers' resistance to change. They see the use of computers in education as a threat to their livelihood rather than a tool to enhance teaching and learning.

**They also see the use of Computers as an increase in Classroom iasks without adequate Compensation, Hence the Prayer for Computer Education's Demise.**

**Availability of Computers in Teaching and Learning the Basic Technology**

Computers are materials that are required for the teaching and learning of Fundamental Technological Concepts. Dariso et al., (2013) asserted that insufficient or non-existence of a computer laboratory, equipped classrooms, printers, photocopiers, projectors, CD-ROMs, and consumable materials contribute to ineffective teaching and learning of Basic Technology in secondary schools and that the provision and availability of relevant teaching and equipment become necessary. They concluded that indeed, without these instructional materials, it is impossible to teach Basic Technology in a relevant manner. It was stated by Okwuedei (2011) that the availability and use of computers are critical, as teachers' working experience and qualification background can be completed only when the correct and appropriate computers are used in the teaching of Basic Technology.

As Okwuedei (2011) explains, Basic Technology students are expected to be provided with adequate and sufficient instructional materials. It is possible that effective instruction will not take place if the instructional materials are not available or are inadequate. Using instructional materials in the classroom, Umunadi (2010) goes on to explain that it helps to stimulate interest while also ensuring mobility and continuity in the teaching and learning process. However, when these instructional materials, such as computers, are used properly, they can increase students' interest in the learning system and help them retain more of the information they have learned. The purpose of instructional materials is to improve the efficiency of education by raising the level of quality in both teaching and learning environments. These tools and materials help to present, support, and reinforce teaching when they are used together. According to Jimoh (2009), ordinary words or verbalization are insufficient for effective teaching and learning. Messages, information, ideas, and knowledge are more easily disseminated when instructional materials are used in conjunction with other methods of communication. As a result, they can be manipulated, seen, heard, felt, and talked about, among other things. These materials aid in the facilitation of activities, and they can be anything or anyone that the teacher turns to for assistance during the learning process. According to Dariso et al., (2013), learning would be less meaningful if it did not take place in the context of instructional materials such as computers.

A computer is an electronic device that stores and analyzes information that is fed into it through a network of wires. Computers, according to Sherman (2005), are electronic devices that can quickly receive, store, process, and retrieve information that has been thrown into them. According to Arisi (2008), a computer is a machine that assists man in his every day and complex business endeavors in life. Aside from that, computers play an important role in a variety of pedagogical functions, including measuring and evaluating knowledge and providing feedback,

observing students' activities and performance, being independent of time and environment, motivating students to participate in the lesson, and considering individual differences.

**Uses of Computers in Teaching and Learning of Basic Technology**

Educational institutions are currently witnessing a paradigm shift from teaching and learning through a teacher-centered approach to learning through a student-centered approach (Wali, 2007). Knowing that knowledge is increasingly valued as a commodity, the student-centered approach views the role of education as one of assisting students in acquiring the necessary abilities to market their knowledge, skills, attitudes, and personalities. Computers are an integral part of this paradigm shift, specifically information technology, which is becoming increasingly integrated into the educational process and appears as an element in the valorization of knowledge (the valorization of knowledge). When it comes to education, computers play an important role in both the instructional process and the learning process itself. The computer plays an important role as a teaching aid in the development and presentation of course content, particularly in higher education. The use of computers opens up a wider and more diverse range of content material sources, as well as more straightforward methods of packaging and presenting the materials. The internet provides a plethora of opportunities for locating both free and paid content for Basic Technology courses, which can be found both on and offline. When using a computer, it is also easier to source materials from textbooks, by scanning and manipulating the materials and preparing them for inclusion as content. Using programs such as Microsoft Word, Microsoft PowerPoint, and Director, it is both easier to package a presentation and to include more advanced instructional tools such as digital video and 3-dimensional simulations for a more enhanced experience with the contents. Even simple photographs, when used in a computer presentation, can be presented in greater numbers and a more organized manner, complete with commentary. It has recently come to light that the use of computers in primary and secondary schools is fraught with danger and should be avoided at all costs. According to Dalhatu (2010), the importance of computers in learning can be summarized as follows: - Promote meaningful communication, which in turn leads to effective learning; Promote good retentive memory because the learner sees, hears, and observes, therefore the rate of remembrance is increased; It motivates students to learn, it saves time, it facilitates the objective of the learning process, and it makes the learning process easier. The process of learning is made more practical rather than theoretical; increasing the value of the learning environment; increasing the effectiveness of learning; making education more widely available and developing cost-effective solutions for the dissemination of knowledge are two of the goals of the organization.

**The following are some of the reasons why computers are important in education, according to Gambari, Kutigi, and Fagbemi (2014):-** Computers improve both teaching and students' achievements;- Computers improve students' vocabulary;- Computers stimulate students' interest in reading;- Computers improve both teaching and students' to stay competitive in an increasingly high-tech world, tomorrow's workforce must prioritize learning computer skills. The computer provides students with the opportunity to interact with the content in novel ways while also allowing them to tailor the learning process to their specific learning abilities or habits. Computers and internetwork in particular facilitate valuable connections with teachers, other schools, and students as well as a large network of professionals all over the world, which is a valuable resource for any professional. Because of these connections, school days are infused with a sense of relevance to the real world, and the educational community as a whole is widened. The increasing use of computers is transforming learning into a private property of the individual, and this will gradually return the power to determine the pattern of education to the individual. Education will become more of a private act in the future. There will be new opportunities for imagination and originality to be explored and realized.

The computer can also help students learn in a variety of ways that are unique to them. Because of the use of computers, it is possible to provide democratic and asynchronous access to course materials to all of the students. Students will have a new way to interact with the content as a result, and the learning process will be tailored to their learning skills and habits. Students will also have the opportunity to investigate new and additional sources as part of the process, which will aid them in not only making sense of the information provided but also in the development of the course content. The use of computers also helps students to improve their technological skills, which will help them to be more marketable after they have graduated.

The extent to which computers are used in educational settings varies greatly from one institution to the next. In general, applications can be divided into two categories: basic applications and advanced applications. The most basic application simply makes use of the computer as a tool to supplement traditional methods of instruction. By incorporating advanced capabilities into computer-assisted instruction, the advanced application extends the use of the computer in the classroom. Among the most fundamental computer applications are content sourcing and development, which involves the use of technology to source for content or manipulate existing content into a form suitable for inclusion in a presentation; content presentation and instruction, which involves packaging the content into a presentation and incorporating an instructional mode into the presentation; and content accessibility, which involves providing students with access to the content so that they can further explore and interact with it at their leisure.

**Effects of the Utilization of Computers in Teaching and Learning of Basic Technology**

The positive effects of the use of computers in the teaching and learning of Basic Technology can be divided into two categories: those that are beneficial and those that are detrimental.
Positive effects of the utilization of computers in teaching and learning.

It has an impact on both the teachers and the students when computers are used in teaching and learning. As stated by Berson (2002), the use of computers to increase the ability to perform logical operations is a major role, and must unquestionably be at the heart of any computer application used in the context of education. The ability to respond quickly to a learner's action has a significant impact because it allows for the rapid reinforcement of positive ideas that the student may have, as well as the correction of any misconceptions. When it comes to today's education system, computers play a crucial role. Students find it easier to use the internet rather than sifting through thick books to find information. Rather than relying solely on textbooks for information, students are increasingly turning to the internet, which offers a much larger and more easily accessible storehouse of data, and when it comes to storing that data, computers are much more convenient than handwritten notes.

Because online education has completely transformed the education industry, computers are an excellent teaching aid. It has made the dream of distance learning a reality, and education is no longer restricted to classrooms; even if students and teachers are not physically present, they can communicate and learn from the comfort of their own homes, at their own pace, and at times that are convenient for them. One more advantage of using a computer is that it allows for the audiovisual representation of information, which makes the learning process more interactive and enjoyable. Teachers no longer use chalk and board and instead bring presentations on a flash drive and begin teaching by plugging them into a computer. With the use of audio-visual effects, learning becomes more enjoyable, and even the least interesting lessons become more interesting as a result of the use of color, sound, and movement. The same old information is presented in a new way, and the same old information is presented differently, and learning becomes more enjoyable. Additionally, the use of computers is beneficial in the sense that computer software facilitates a more effective presentation of information in education, in which the internet plays a significant role. It is possible to retrieve information on a wide range of topics

using the internet, which serves as a massive information base in itself. As a result of the internet, it benefitedboth teachers and students. Teachers can use it to find additional information and references on the topics to be taught, while students can use it to find additional information on topics of interest to them. Research and review in education, 7th edition.

The benefits of computer use include the ability to access the internet, which contains information on virtually anything. In addition to enabling the storage of data in an electronic format, computers also allow for the administration of examinations, which will aid in the reduction of paper consumption. Because the memory capacities of computer storage devices are measured in gigabytes, they are capable of storing large amounts of information. Organizing and transferring presentations, notes, and test papers is simple when using computer storage devices. Additionally, learners can submit homework, assignments, and dissertation work as soft copies, and the electronic format makes data more durable because electronically erasable memory devices can be used repeatedly because they provide robust data storage and reliable data retrieval, the electronic format makes data more durable.

**Review of Related Empirical Studies**

This section contains previous studies that are empirically related to the current research study.

Odera (2011) conducted a study comparing the use of computers by Kenyan Secondary School Teachers. The goal of this study was to find out how Secondary School teachers use computers in public secondary schools in Nyanza Province, as well as to identify which public secondary schools had computers and to provide evidence on how computers are used in the classroom. Learning with computers improves the quality of education, according to related literature for this study. Nyanza Province was the subject of the research. A sample of eighty computer teachers was chosen using a saturated sampling technique. The research schools were secondary schools with computers at the time of the study. Questionnaires, semi-structured interviews, and documentary analysis were used to collect data. According to the findings of this study, boys' schools used computers in teaching and learning more than girls' schools. Secondary school principals encouraged 50% of teachers to use computers, while 30% were only partially encouraged. However, 20% were enthusiastic and worked hard to learn and use computers in the classroom. According to the findings, teachers used computers to improve students' communication skills as well as to teach English language, science, mathematics, and computer literacy skills. The majority of schools lacked adequate computer resources for students, as well as support materials and teachers who were not adequately computer-trained. In light of these findings, the researcher connects this study to the use of computers in the teaching and learning of concepts in Basic Technology in Adamawa State secondary schools.

Adulation (2011), the impact of using technical education-related websites on the achievement of King Faisal University students in technical education teaching methods was investigated. The following research question was attempted to be answered by the study: When compared to traditional methods, what effect does the use of technical education-related websites have on students' achievement in technical education subject teaching methods? In the first semester of the academic year 2009/2010, students from the Education Faculty's Technical Education Department were chosen at random to answer the study's question. Participants in the study were divided into two groups. The experimental group was taught using technical education websites, while the control group was taught using the traditional method (Lecture Method).

**MATERIALS AND METHODS**

**Materials**

Survey research design was employed in conducting this research. According to Nworgu (2015), survey research is a type of research in which data from the entire population or a representative sample of the population is collected and analyzed to study a group of people or an item.

Awotunde and Ugodulunwa (2004). Survey research is defined as any research that involves the assessment of public opinion through the use of a questionnaire. In this case, the design is appropriate because the study was designed to gather information on facts and opinions about the use of computers in the teaching and learning of Basic Technology at secondary schools in Adamawa State from teachers and students.

## METHODS

To answer the research questions and make decisions; the data collected from the respondents were analyzed using the mean and standard deviation, which was calculated from the data. The acceptance of items with a mean of 2.50 or higher is guaranteed, while the rejection of items with a mean less than 2.50 is guaranteed.

## RESULTS AND DISCUSSION

The purpose of this study was to look into the use of computers in the teaching and learning of basic technology in secondary schools in Adamawa State.

The first research question looked into the availability of computers for teaching and learning basic technology in secondary schools, as seen by teachers and students (learners). According to the analysis of the respondents' opinions on the related data, the teachers believe that some of the computers available in the schools are adequate for the teaching and learning of the subject. The students, on the other hand, disagreed with the viewpoint. The two groups differed significantly in their opinion in the test of null hypothesis I, where the variability in their mean score was tested. As a result, the null hypothesis was rejected.

The second research question looked into teachers' perceptions of the level of computer use in subject teaching in state secondary schools. According to the male and female teachers, the available computer could be considered adequate for subject teaching and learning. Female teachers were even more favorable toward adequacy than male teachers. Dariso et al. (2013) reported that insufficient or lack of computer laboratory, equipped classrooms, printer, photocopiers, projectors, CD ROM, and consumable materials contribute to ineffective teaching and learning of Basic Technology in Secondary Schools.

The third research question looked into students' attitudes toward the use of computers for basic technology learning in secondary schools. According to the analysis of the related data, both male and female students did not agree that the use of computers for learning the subject in Secondary Schools was adequate.

## CONCLUSIONS

The computers available in Adamawa State Secondary Schools were mostly for teachers' use and were insufficient for effective teaching and learning of Basic Technology. Students in Adamawa State Secondary Schools do not have access to computers in the teaching and learning process of Basic Technology. The teachers and students agreed that using computers for teaching and learning basic technology improves the teaching and learning process; however, using computers comes with a number of challenges. Among these challenges are inadequate computer hardware and software, as well as inadequate knowledge of their use by both teachers and students, as well as inadequate funding, power supply, and provision of infrastructural facilities for effective computer use.

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