Efficacy of Educational Technology Centers on Tertiary Education Student's Acquisition of Technological Skills in Alvan Ikoku Federal University of Education Owerri Imo State

[1]Christian Nwakanma PhD, [2] Juliana Chinyeaka Aniche
[1]Department of Business Education, Faculty of Education Art and Education
[2] Department of Sociology, Faculty of Social Sciences
Madonna University Okija Anambra State

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Abstract

This paper investigated efficacy of the Center for Educational Technology on Tertiary Education Students Acquisition of Technological skills in Alvan Ikoku University of Education Owerri Imo State. The population of this study is 8,000 which comprised 3000 males and 5,000 female students in Alvan Ikoku Federal University Of Education Owerri. Stratified random sampling technique was used to obtain 200 respondents which made up of 110 females and 90 male students from 4 departments in Alvan Ikoku Federal University of Education Owerri. Descriptive survey research design was used for this study. One research question and one hypothesis guided this study. Instrument used for data collection was researcher developed questionnaire "titled, efficacy of The Center for Educational Technology on Tertiary Education Students Acquisition of Technological skills in Alvan Ikoku University of Education Owerri Imo State was used," with four rating scale of strongly agree, agree, dis agree and strongly disagree. The instrument was validated by two specialists. Cronbach alpha statistics was used to determine the reliability coefficient of this study at 0.78 and 0.97, which shows that the instrument is reliable to be used for this study. Mean and standard deviation were used to analyze the data while t test of independent was used to test the hypothesis. The findings from this study reveals that there are varied skills students acquire from the use of instructional media in the centers for educational technology in higher institutions in Nigeria. It was recommended from this study that educational technologists, specialists and technicians from the center for educational technology should protect educational technology instructional material against dusts and ensure proper maintenance and storage of educational technology materials in Alvan Ikoku Federal University of Education Owerri Imo state.
Keywords: Tertiary Education, Skills obtained, Educational Technology, Nigeria.

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Introduction

Tertiary education Institutions are Higher education institutions, students undergo after their secondary school education. Tertiary educations institutions are very wide or broader in scope (Alemu, 2018). Tertiary educations provide learning that creates permanent change in human behavior. Tertiary Education has different names, its names include: advanced level education system, higher education, post-secondary education system (Assie- Lumumba, 2005 & Idowu 2020). Vast majority of tertiary education curriculum focused on teaching, research, leadership and community services thus, creating positive change in different societies of human existence (Ogunode, Ayeni & Ogwuche 2024). Secondary schools are part of higher or tertiary education institutions because knowledge and skills are acquired in

secondary schools. This depicts that there are technical secondary schools, commercial secondary schools where students learn different crafts and trades among others. Higher education institutions as the name implies are micro societies that are made of people of different cultures, characters and values (Ogunode & Odo 2023). Other names given higher education in parenthesis are: Universities, Polytechnics, Colleges of Educations, institutes, open universities and mono technics. Tertiary educations are pivotal for manpower training, economic, technological development of the country (Ibrahim, 2017). Majority of higher education institutions in Nigeria are owned planned, supervised, coordinated and controlled by the state and federal government in Nigeria. On the other hand, vast majority of private Universities, Polytechnics, and Colleges of education in Nigeria are planned, organized and financed by private individuals that own them in Nigeria. Both federal, state, private universities, polytechnics colleges of educations, are equipped with aplomb of skills and knowledge which graduates acquire for their self- sustenance. Organized ambiances of learning in tertiary education institutions have enabled graduates that pass through them compete favourably in the world of work. Vast array of knowledge and skills acquired in tertiary education institutions have enabled graduate prove their stands in their economic, social, cultural legal, political, physiological and philosophical endeavours in Nigeria and in Diasporas communities. Tertiary educations inculcate different skills to students for self-sustenance and economic development of Nigeria and other nations of the world. Different professions such as medicine, agriculture, engineering, building, material engineering and electrical engineering among others, are offered in tertiary education institutions. It is also, from higher educations that pharmacists, geologist, doctors, nurses, accountants, educationists are trained and inducted to practice as professionals who renders different services for human existence. The old and new generation of this decade have not relented in the quest for higher education, no matter how odd their financial background may be, still they strive to succeed with the acquisition of skills and knowledge in education. Histories are kept to acquaint new generations of people that will come to stay in this world. For example, majority of Nigerians studied with local lamps, attend schools in far villages through long distance roads to their schools to and fro on daily basis. They also ate from traditional calabashes and drank from their parents' earthen pots, without minding endemic diseases inside the earthen pots but still, they developed enthusiasm, and passion that enabled them to surmount their challenges. Today, People who studied in higher education institutions are: engineers, medical doctors, educationist, nurses, and adding different positive values in Nigerian's economy. It is real that fees charged in higher education institutions especially private universities in Nigeria are too exorbitantly beyond the reach of the poor in Nigeria. Despite these challenges, the zeal to acquire higher education skills and knowledge have not depreciated from the minds of Nigerians who pursues education with vigor. It is also, of no doubt that those students that endured the barriers and obstacles during their higher education are today, doing well in different capacities in their work places. Not only that they are doing very well in their work places, education has enabled them gather financial and nonfinancial resources to succor the needs or plight of their families and extended families in Nigeria.

The benefits derived from higher education institutions cannot be over emphasized. It is from the acquisition of skilled provided in higher education institutions in Nigeria that many have become captains of industries, managers of companies and leaders of government in Nigeria. Education is a panacea for achieving greater economic, social and political endeavors. A leader without education is seen physically as a leader, but, the person helping him to write, direct, and circumvent solutions to problems in his leadership is the real leader. Quality education is predicated on adequate provision of quality teaching and learning materials. Quality teaching and learning are achieved from establishment, procurement and effective management of educational resources. It was contained in the national policy of education archives that teachers should be provided with instructional materials that invokes students' receptivity and invitation to learn.

Old ideas of Educational Technology in Nigerian Universities

In the past, the center for educational technology looked odd, moribund and a replica of the home of traditional medicine man, antiquated with old type writers, improvised black boards, opaque projectors, cameras, black and white colour televisions, outdated cinema machines and devices. Today, the new technological teaching and learning equipment and the evolving technology have adored the centers for educational technology in Nigerian universities. The evolving trends in educational technology have brought the solutions to lecturers and students teaching and learning difficulties. In this new age, students can type their assignments with lap tops, search information in the internet with internet facilities, engage in zoom meetings, collaborative learning with virtual learning accoutrements (Ike, e tal 2006).

Skills obtained from use of Instructional Materials from the Center for Educational Technology

The benefits derived from the use of instructional materials housed in the center for educational technology center are numerous. Educational technology instructional materials are self -sustaining and motivating to both students and teachers that make use of them. Skills students acquire in the universities with the use of instructional materials in the center for educational technology in universities, according to world economic forum (2015) include: building, architectural, photographic, drilling, music composing, film acting, mass communication, adjudication, administrative, Secretarial, electrical and physiological skills among others.

Centers for Educational technological are centers located in federal, state and private universities in Nigeria. Educational technology centers are not only situated or established only in universities in Nigeria. They are also established in various states in Nigeria. An individual can search and see them in different state through a well given directives to locate them especially in the state capitals. Educational technology centers are among the centers approved by National Universities Commission to Nigerian Universities. The benefits derived from educational technology centers are enormous. They cannot be over emphasized. In a bid to provide adequate teaching and learning resources in higher Education institutions in Nigeria, policy makers and managers in education have concretized

better learning grounds by which teaching and learning can flow without hitches in universities. It is on this prenise that educational technology centers which were formerly sited in few universities in Nigeria were made to cut across all universities in Nigeria.

Various Names of Educational Technology Centers and various Services they provided During Pandemics and Ordinary Times in Education

The center for educational technology, center for curriculum development and implementation are names given to educational technology centers in Nigerian Universities. It is very important to note that educational technology center among other names, are names given to educational technology centers in universities, however, colleges of education, polytechnics, public and private secondary schools have special name for their educational technology centers, their name is education resource center (Ike, etal 2006). Both educational technology centers and resource centers are more than a traditional library, reprographic work center, audio visual specialist workshop. The centers for educational technology and resource centers are centers used for testing teaching materials, providing education services for special needs persons, language learning, mathematics, science and science related courses. They are centers where teachers, lecturers meet to chisel out learning concept with the use of technology. Multi-faceted importance of centers for educational technology craves avenue that enables lecturers to' carryout further investigations in their teaching. Each center for educational technology stands as foci center for educational innovation. They are accorded well recognition by the National Education Research

and Development Council (NERDC). Both resource centers and centers for educational technology are centers for classification and indexation of educational resources and technology materials. They are provided for storage, retrieval, evaluation and weeding of obsolete educational technology materials or media (Beeswick, 1972). Educational technology materials are very resourceful materials that endear quality teaching and learning to both lecturers and students in Nigeria (Olofssion, 2012). It is not everything lecturers have taught can immediately decode in the brain. Educational technology materials have provided euphoria of teaching and learning where students are allowed to practice what they have learnt with use of instructional materials from the center for educational technology situated in universities. Some teachings and information students receive die off because, they are not well chunked into the long term memory but with educational technology materials those concepts students have learnt could be rehearsed with educational technology materials to enable students get mastery of the concepts. Heads of tertiary education institutions have synergized with the national universities commission to ensure that the needed educational materials for quality academic delivery in their various tertiary educational institutions are provided in state, private and federal universities in Nigeria. It is pertinent to understand that theories taught by lecturers are not all the time understood very well through mere teaching. Engagement of students into series of practical studies enhances their manipulative skills.

Centers for Educational Technology were very helpful during the COVID 19 era. Centers for educational technology stood as engine house where learning flowed from school to the

students in their homes. Though, students were not meant to come to educational institutions then, students personal emails were linked with emails of educational institutions to engage students in their learning. Managements of educational institutions resorted to the use of internet savers situated in education institutions to generate internet services to both students teachers, lecturers in various educational institutions. (Adedoyin, 2020). The world is now a global village. Gradual increase in teaching and learning styles embellished with innovated technology for communication or transmission of learning contents, have accelerated the trends on use of different teaching and learning technological equipment and facilities. Multimedia learning resources are continuously evolving in both secondary schools and higher education institutions.

Overview of the Functions of Educational Technology Centers in Tertiary education institutions in Nigerian

i. Center for educational technology are embodiment of instructional material in tertiary institutions.

ii. Center for educational technology have resources persons (specialists) that assists both students and teachers to design, produce, utilize instructional materials according to student's needs.

iii. Resource persons (technologists) in the centers for educational technology, make use of educational technology materials that are communication oriented to teach students on various communication styles, video coverage skills, public address system handling / repairs, projections, radio and close circuit television installation and maintenance.

iv. Lecturers with the help of educational technology resource persons (technologist) organize workshops, seminars, and orientations for students, staffs and other media users on effective use of educational technology media for teaching and learning purposes.

v. Both students and lecturers make use of materials in the centers for educational technology to carry out research activities in different educational fields.

vi. The center for educational technology provides extension services to students, lecturers and school administrators through workshops, seminars and conferences with the help of technologists or technicians.

Centers for educational technology are centers where both old and new technological equipment are kept for use in universities and other tertiary education institutions in Nigeria.

Chronicles of Efficacies of Centers for Educational Technology and Resource Centers in Nigerian Education Institutions

History and chronicles of educational technology centers started in 1930s, when educational broad casting was popular for disseminating teaching to wide audience in Nigeria under the Nigerian broad casting corporation. In 1960s, educational technology centers became more popular and the first educational technology center was built in

Kaduna State by the federal government of Nigeria (Ike etal, 2006). Educational broadcasting stations where formerly on use by the Nigerian military in disseminating security information to their colleagues. In 1960s to 1980s, educational technology center in Kaduna State was officially handed over to the teachers training college. It is from this educational technology center that teacher training college Kaduna State used to transmit teaching and learning to their students in various states in Nigeria. The importance of educational technology centers became widely known as a foot hold by which learning could be transmitted to students in Nigeria. Importance of educational technology centers did not only end in transmitting learning to students alone, distance education students also make use of the resources in the center for educational technology in their learning (Okworo, 2017). Heads of universities, colleges of educations, secondary schools heads sent their delegates to Kaduna to hire some educational materials that could enable them effect quality delivery of teaching to their students in Nigeria. It is very rewarding that innovations in education spreads like wild fire and people who understands their use quickly rush for them and create vanguards for their dissemination (Okworo, 2013). Equipment kept in educational technology centers are classified as two dimensional, three dimensional educational technology materials, they equipment provided also include: Televisions, audio instruments, recorders, tapes, slides, film slides, projectors, magazines, books, electronic boards, desk tops, lap tops, desk tops, overhead transparencies, among others. Educational technology materials kept in centers for educational technologies are also, known as educational media. Educational media are instructional materials that provides effective

delivery of instructions in both lower and advanced level students (Oguyinka, e tal 2017). They are those educational materials or media that are self- supporting during teaching and learning. Both lecturers and students cannot teach or learn without using them. They occur and reoccur in any teaching and learning transactions in tertiary education institutions (Udo, 2006). They are not conspicuous during learning. They are in form of flannel boards, white boards, makers. Furthermore, they are lap tops, desk tops. Projectors, electronic black boards, flannel boards, interactive white boards, magnetic boards among other educational materials kept in educational centers. The center for educational contains some peripheral devices and software's that brings rewarding teaching and learning experiences to both lecturers and students either in the classroom, collaborative and personalized learning. Some of these peripheral devices include: flash drives, internet devices, cassettes, disk plates, wires among others. In the same vein, PCs podcasts, slides, Bings, Chabot's are software contained in lap tops, desk tops pam tops. A lot of these materials and devices are complementarily used to deliver effective teaching. They also, stand as means by which vast majority of students in daily classroom lectures and those in distant places get receptive to their learning through virtual, mobile or flipped classroom learning modes (Oyronke, 2013). Majority of instructional materials contained in the center for educational technology in Nigerian universities are majorly multimedia learning equipment. They are internationally and locally made (Oshnaike, 2012). This means that some educational technology materials are contrived or improvised to ease teaching and learning. In ideal cases, some of them are modern educational technology instructional materials

used in this modern era. However, majority of instructional materials contained in the center for educational technology are affordable by students, though, some of them are unaffordable due to the fact that they are costly. Students can effortlessly navigate with them during personalized or collaborative learning. Modern educational materials rejig effective delivery of instructions. Modern educational technology materials kept in educational technology centers possess oustanding and remarkable dignity to universities as well as students who make use of them during teaching and learning. Some of them are devices that cannot effect any progress in teaching and learning when they are used alone. But, when they are combined or fixed together, they complement to each other and form a system that strategizes learning. They validate ambiance of learning thus, craves students invitation to learn. Students develop understanding on how to manipulate the instructional materials. They can practice learning skills on their own while lecturers stood as sage, facilitator, perhaps, as guides to the students by the side. Educational technology centers are embodiment of instructional materials that provide rewarding learning experiences to students. They make learning to be permanently digested in the students long term memory. Educational technology centers were formerly situated in Kaduna State, precisely, in the premises of teachers training college in Kaduna State and university of Ibadan. In this century, with the efforts and frequent supervisions of tertiary educations, center for educational technology have across the whole universities in Nigeria. In engineering the contents of educational technology centers have been a working tools to engineers, in education classroom, they are instructional materials, in film and Hollywood industries, they are ornaments that beautifies holly wood and photographers environment. To the physicians they are statoscope, to psychologist the are barometers, to the sports men, they are the javelin, discuss, shot put hammer, to civil engineers, they are compass used to construct bridges. To the mathematicians they are Chabot's, micro soft word excels, hand held mathematical sets and podcasts. Educational technology centers have impacted positively in computer science, mass communications, Business education, Pharmaceutical sciences, med lab, kinetics, physical education urban and regional planning, psychology, special education, medicine and early childhood education. Resources persons, technicians are employed to ensure their storage, lending to department or to individuals outside the school environment. When there are scarcity or inadequacy of educational technology materials, caregivers to the center for educational technology centers in universities recommend for their needs or importance to the vice chancellors of universities. Resources individuals also search for educational institutions where instructional materials could be hired for effective teaching and learning. Timely booking before educational technology materials are leased or lend out is imperative for record purposes. Technicians or resources persons in educational technology centers are duty bound to direct students on how to use the educational materials. In the same vein, they repair, strip fix, store or preserve education technology materials for durability of the equipment or long lasting (Power, 2008).

Problems of the Study

Education technology centers, being the key and back bone of effective delivery of instructions are constrained with the following

problems, such as: Stealing, wear and tear, inadequate technicians, poor service men, dust coverage and obsolete technology. Stealing is one of the problems devastating educational technology centers in higher education institutions in Nigeria. In the same vein, some educational technology materials are very costly to obtain (Wodi, 2009). It is saddening that some students and non- students stole and hide some educational technology materials in their bags. Some students and other users take some educational technology materials to hidden corners and finally take them home for their personal use or commercialization. In the same vein, educational technology materials are prone to wear and tear due to their frequent use. The need for technicians, technologists, service men to repair or service them have become so herculean to the extent that, some instructional materials that could be repaired for reuse are lying wasted in center for educational technology. Some educational technology materials or media such as desk tops, lap tops, televisions, overhead transparencies, projectors, slides, cassettes among others, are sensitive to dust coloration. It is observed that vast majority of educational technology materials that have inbuilt circuits. They perhaps, used with electricity and got spoilt easily because they are not protected from dusts and drizzling rainfalls. In some educational technology centers, private individuals do not return the educational technology material they have borrowed on time. Sometimes, some people delay from returning the educational technology materials they have borrowed. These inordinate activities have resulted to loss of educational technology materials because they are long overdue to be returned and perhaps forgotten by technicians or resources persons. Those educational technology materials are eventually returned when technicians or managers refer to their books for recheck of inventories.

Methods

This paper investigated efficacy of The Center for Educational Technology on Tertiary Education Students Acquisition of Technological skills in Alvan Ikoku University of Education Owerri Imo State. The population of this study is 8,000 which comprised 3000 males and 5,000 females in Alvan Ikoku Federal University Of Education Owerri. Stratified random sampling technique was used to obtain 200 respondents which made up of 110 males and 90 females from 4 departments in Alvan Ikoku Federal University of Education Owerri. Descriptive survey research design was used for this study. One research question and one hypothesis guided this study. Instrument used for data collection was researcher developed questionnaire "titled, efficacy of The Center for Educational Technology on Tertiary Education Students Acquisition of Technological skills in Alvan Ikoku University of Education Owerri Imo State was used," with four rating scale of strongly agree, agree, dis agree and strongly disagree. The instrument was validated by two specialists. Cronbach alpha statistics was used to determine the reliability coefficient of this study at 0.78 and 0.97, which shows that the instrument is reliable to be used for this study. Mean and standard deviation were used to analyze the data while t test of independent was used to test the hypothesis.

Results

Research question one

What are the technological skills acquired by students from use of educational materials in the center for educational technology in Alvan Ikoku Federal University of Education Owerri?

Table1: shows technological skills acquired by students from use of educational materials from the center for educational technology in Alvan Ikoku University of Education Owerri?

Respondents:	Males 110			Females 90		
	X	S.D		X	S.D	Decision
S/NO						
1. Students acquire skills on painting and wall designs	3.06	0.10	Agree	3 .00	0.01	Agree
2. Students acquire skills on floor and wall tiling	3.60	0.10	Agree	3.60	0.10	Agree
3. Skills on in-house electrical wiring are acquired by students	3.00	0.10	Agree	3.10	0.01	Agree
4. Photographic skills on image zooming are acquired by students	2.50	0.20	Agree	2.50	0.50	Agree
5. Students acquire skills on how to technological devices to conduct video conferencing	3.01	0.00	Agree	2.50	0.50	Agree
6. Varieties of skills on use of Icons from lap tops, desks tops are acquired by students	3.00	0.10	Agree	2.60	0.40	Agree
7. Students different skills in iron fabrications	3.00	0.50	Agree	3.00	0.01	Agree
8. Students acquire communicative skills through use of public address system	3.01	0.40	Agree	3.01	0.00	Agree
9. Skills of music composing	2.60	0.10	Agree	2.50	0.10	Agree

are acquired by students

10. Skills sportsmanship are   2.50   0.10   Agree   3.10   0.10   Agree

  acquired by students with the use

  of physical education instructional

   materials in the center for educational technology.

       Total   **28.74**   **1.60**   **Agree**   **28.91**   **1.78**   **Agree**

Test of Hypothesis

Table 2: Shows test of hypothesis on the various skills acquired by students with the use of educational technology materials in the center for educational technology in Alvan Ikoku federal University of Education in Owerri.

	X	S.D	t-cal	t-crt	Decision
	28.74	1.60	28.83	2.089	reject
	28.91	1.78			

The analysis above mean x is 28.74 with standard deviation of 1.60. in the same vein, mean for males' students is 28.91, with standard deviation of 1.78. The analysis of t-cal at 0.05 alpha level is 28.83 while t-crit at 0.05 alphal level is 2.089. From the analysis, t- calculated (t-cal) is greater than t-critical (t-crit). Therefore, the hypothesis is rejected. This implies that there is no significant difference in the opinion male and female students on the various skills acquired by students with the use of educational technology materials / resources in the centers for educational technology in Alvan Ikoku Federal University of education Owerri.

Discussions of Findings

The finding of this study proved that the center for education technology has from time immemorial stood as the house of music composing skills, knowledge and skills, where students acquire both knowledge and skills on use of technological equipment to construct images of human and objects. The center for educational technology has developed students horizon to understand the intricacies involved on building construction, architectural works, painting, wallpaper designs, music composing, film production, micro soft word excel, computer trouble shooting skills among others. The Dearth or Inadequacy of instructional materials in the center for educational technology center inadvertently result to both psychological and poor skills development to students in tertiary education institutions. This is in line with (Beewick 1972) assertion that the centers for educational technology are centers that are skill oriented. Beeswick, further identified that the centers for educational technology are centers mapped out for storage,

lending, retrieval, maintenance and training of students under the auspices of educational technologist, technological specialists or resources persons. Educational resource centers are foci technological innovation and research development (Ike, 2006). Little wonder, Offssion (2012), identified that the center for educational technology has avalanche of technological resources that make learning competitive and endearing.

Recommendations

1. Some educational technology material can easily get spoilt because, they are fragile, departments and other end users should ensure that educational technology materials are returned on time to avoid them getting spoilt easily.
2. Frequent maintenance of educational technology material should be timely. This would reduce the action of dusts that caused their sudden break down.

Conclusion

Importance placed on the center for educational technology, for teaching and learning enhancement cannot be over emphasized. Varieties of skills are learnt with the use of educational technology materials contained in the center for educational technology. Students have acclimatized to the use materials in the center for educational technology with the directives of their lecturers. Resources from the center for education technology make learning interactive, inspirational, inviting, motivational and educative. It is from the continued use of instructional materials from the center for educational technology that students got equiped varieties of knowledge and skills that helps them in their lives or career endavours. The skills acquired from the use of instructional

materials from the center for educational technology include: graphic, drawing, micro-soft excel skills, building, architectural, communicative, music composing, internal and external electrical wiring skills, construction, fabricating skills among others. Center for educational technology is among the requirement for accreditation of universities by the National Universities Commission of Nigeria. Center for educational technology contains varieties or multimedia learning equipment and facilities for lecturers and students use in Nigerian tertiary institutions. The use of those educational resources that enrich learning have helped in the training and development of graduates who are today, known as educators, analyst, publishers, engineers, advocates, healers, counselors and rehabilitators of depressed individuals in Nigeria and in diasporas communities.

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Corresponding Author: Christian Nwakanma PhD
E-mail: **christiannwakanma6@gmail.com**