EDUCATIONAL TECHNOLOGIES: A WAY TO ENHANCE LEARNING PROCESS IN NIGERIAN TERTIARY INSTITUTIONS

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ABSTRACT
In this era of rapid technological advancement, technology can be utilized to improve teaching and learning processes. Integrating technology in learning, especially in higher education, can empower both instructors and learners to improve the quality of education and also to achieve the anticipated learning objectives. This paper is aimed at investigating the current educational technologies being used in some Nigerian tertiary institutions and its impact on the students' learning through the following aspects: the adopted educational technologies by the tertiary institutions in teaching and learning processes, the impact of educational technologies on students' achievement and academic staff teaching effectiveness, and also some challenges facing the adoption of educational technologies in teaching and learning. The result shows that technology has a positive impact on learning processes.

Keywords:
Educational technologies, Enhanced learning, E-learning, Technology acceptance, Nigerian Tertiary Institutions.

INTRODUCTION

The Association for Educational Communications and Technology (AECT) defines educational technology as "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (Januszewski&Molenda, 2008). Educational Technology can be used by all educators who want to incorporate technology in their teaching as well as educational administrators (Jaflah A. 2012). Many educators believe that the new computer and communication-based technologies have much to offer education and that infusion of technology into school settings will bring profound changes. (Ron Richmond).

Many scholars have argued that Nigeria and other developing countries need to leverage on e-learning resources to bridge the widening gap in education services. Nigeria is home to the most out of school children of primary school age of any country on the planet. With 10.5 million children not accessing a primary education in 2010, Nigeria by itself encompasses nearly a fifth of the world's children out of primary school. (RESULTS Educational Fund 2013).

Despite the growing number of public and private tertiary institutions and other tertiary institutions in the country, a large army of young people that have been denied access to education continues to mount. A view held by experts, including former UK Prime Minister Gordon Brown, is that technology, especially online and distance learning, is the surest path to increasing literacy. Already, the American University of Nigeria (AUN) is leading in expanding the classroom by its well-thought out e-learning approach. AUN's excellent ICT infrastructure base and diverse faculty from across 28 countries come in handy in launching the Online & Distance Learning Programs. (Dan Atori 2014). AUN established a state of the art e-learning center in 2013 which is WIFI enabled and full of digital services that will facilitate students learning.

In order to fulfil its mission as a development university, the American University of Nigeria has seen better results by using different kinds of educational technologies in teaching their students and also teaching even the communities around them to become future leaders. This has led AUN to introduce many learning initiatives, among which is Technology Enhanced Learning for All (TELA); in which over 20,000 vulnerable Nigerians who do not have access to education are being taught how to read and write with the help of technology.

It is generally believed that technology has a huge potentials to change both teaching and learning from the traditional way to a more better and enhanced way. Improving education quality is a priority for most developing countries in which governments are facing the challenge to identify efficient ways to use their scarce resources and raise the quality of education (Jaflah A. 2012). Therefore, this research is aimed at investigating the current situation in the use of educational technologies at some Nigerian Tertiary Institutions and how it impacts students' learning.

AIM AND OBJECTIVES

This paper aim to investigate the current Educational Technologies being used in some Nigerian Tertiary Institutions and their impact on the students learning with the following objectives:

[1] The adopted Educational Technologies in some Nigerian tertiary institutions for teaching and learning processes
[2] The Impacts of Educational Technologies on student's achievementand academic staff teaching effectiveness
[3] Challenges facing the adoption of educational technologies in teaching and learning

LITERATURE REVIEW

The Impact of Educational Technologies in Teaching and Learning Processes

Educational technology is the considered implementation of appropriate tools, techniques, or processes that facilitate the application of senses, memory, and cognition to enhance teaching practices and improve learning outcomes (Hap Aziz 2010).

Jaflah A. (2012) cited in Cox et al. (1999(2) that many educators perceive technology as a tool for improving the presentation of material for making lessons more fun for the learners and for making administration more efficient. Effective technology use deploys multiple evidence-based strategies concurrently (e.g. adaptive content, frequent testing, immediate feedback, etc.), as do effective teachers (Ross, S. et al 2010). Ross et al further stated that using computers or other forms of technology can give students practice on core content and skills while the teacher can work with others, conduct assessments, or perform other tasks. Through the use of educational technology, education is able to be individualized for each student, thus allowing for better differentiation and allowing students to work for mastery at their own pace (Kronholz J. 2011).

Educational technologies improve interactions between students and their instructors. Students can learn more in less time with technology-based instruction and end up liking classes more. Additionally, students develop more positive attitudes and concentrate more. Studies completed on "computer intensive" settings found increases in student-centric, cooperative and higher order learning, writing skills, problem solving, and using technology. (An, Y. J., Reigeluth, C. 2011.) In addition, attitudes toward technology as a learning tool by parents, students and teachers are also improved.

Most educators agree that educational technology can help teachers and students in organization, efficiency, collaboration, communication, extra help, virtual experiences and so much more. Although, cost, culture and other educational and environmental factors are among the reasons for not adopting Educational Technology by many educational organizations and institutes (Jaflah A. 2012).

Finally, educational technology helps students to use multimedia to address all learning styles, provides more efficient interactivity between students and their teachers and also their fellow students. Furthermore, educational technology also help students to have a centered activities and extra support and help resources. On the part of teachers; technology also helps them in organization and efficiency, paperless work (thereby reducing time), finding lesson resources and collaborating with other teachers.

The Impact of Educational Technologies on Student Achievement and Performance

Technology is seen by many as an essential tool for improving student learning outcomes. A research conducted by Kent State University's Bureau of Research Training and Services to examine growth in student's knowledge indicated that those students who used the technology scored higher than those students who did not use the technology. In addition, the difference in mean scores between the two groups grew over time, further suggesting the technology had a positive impact on student learning (Kent State University 2005).

SMART technologies recently commissioned a global research study in order to get a better understanding of measureable outcomes as they relate to investment in collaboration technology.

The results indicated that participants viewed technology as an important enabler for improving student learning outcomes. However, a sound teacher and student support system, training, high-quality content and several other

best practices were necessary to get the greatest value from technology. The study further found that high-quality, richly-integrated instructional technology solutions, along with sound implementation support and best practices are linked directly to outcomes. Instructional technology solutions supported by best practices are reported to have a statistically significant, positive impact on student achievement, student engagement that led to decreased absenteeism, a rise in teacher effectiveness, an improvement in the overall student experience and the ability to test and implement new teaching models such as blended learning and technology-enabled student collaboration (Filigree consulting 2012).

Educational technology has demonstrated a significant positive effect on achievement. Positive outcomes have been found for all major subject areas, in preschool through higher education, and for both regular education and special needs students (Ellen R. B., Jay S. K. 1996). The use of technology as a learning tool could make a measurable positive difference in student achievement, attitudes, and interaction with teachers and other students (E. R. Bialo 1995).

As students engage more and more frequently with these information-rich technologies, their abilities to identify, evaluate, and use information will become increasingly important to their achievement. (Ellen R. B., Jay S. K. 1996).

Challenges Facing the Adoption of Educational Technologies in Teaching and Learning

Educational technology is still not being applied sufficiently, mostly for the following reasons: lack of school equipment, the necessary resources and insufficient qualification of teachers for the implementation of these technologies (Lazar Stošić 2015). Some other challenges identified by various researchers are:

Inertia: Some teachers in Nigerian higher institutions are showing acts of unwillingness to accept the new technological advancement. They feel satisfied with the age long method of instruction (the traditional method) (Okwuedei C. A. (2011).

Cost: The cost of integrating educational technologies in teaching and learning can be expensive, due to the high cost of the ICT equipment and facilities. Some Nigerian tertiary institutions cannot afford to put in place those ICT facilities due to the cost. However, in some cases, some tertiary institutions can afford them; but they do not see investing such huge amount of money in educational technology as a way to improve teaching and learning. Thus, inadequate funding becomes the bane of our educational development in this regard. Without adequate funding, curriculum innovation in the model currently being discussed will be a mirage (Okwuedei C. A. 2011).

Unavailability and Inaccessibility of ICT Facilities: Many teachers do not have access to ICT facilities in Nigerian tertiary institutions because they are not present in expected quantity or not even in existence at all. Lack of access to ICT's resources like computers and internet can seriously impede what teachers can do in the classroom as regards to implementation of its program (Okwuedei C. A. 2011).

Computer Literacy: Lack of adequate computer literacy by both students and teachers is also another challenge in using educational technologies. As stated earlier, some teachers are not willing to accept technology in teaching; they prefer to use the old traditional method of teaching. They lack adequate skills to access computer and internet, thereby being a very big challenge in integrating educational technologies in their teaching.

Lack of adequate power supply: Power supply can also be a challenge, due to the instability of power supply in Nigeria to power ICT equipment's. It is common to discover that most organizations in Nigeria rely on a diesel generators for power supply. Not all tertiary institutions can afford to buy generators, talk less of buying the diesel to power on the generators.

METHODOLOGY

This research aims to investigate the current situation concerning the use and adoption of educational technologies in Nigerian tertiary institutions. To achieve this, purpose questionnaires were used. Questions were designed to determine the students' and academic staff's knowledge of technology, the use of technology for academic purposes, their self-reported proficiency in the use of technology, the perceived benefits, motivating factors that influence their use of technology and the challenges that obstruct them from integrating technology in teaching and learning.

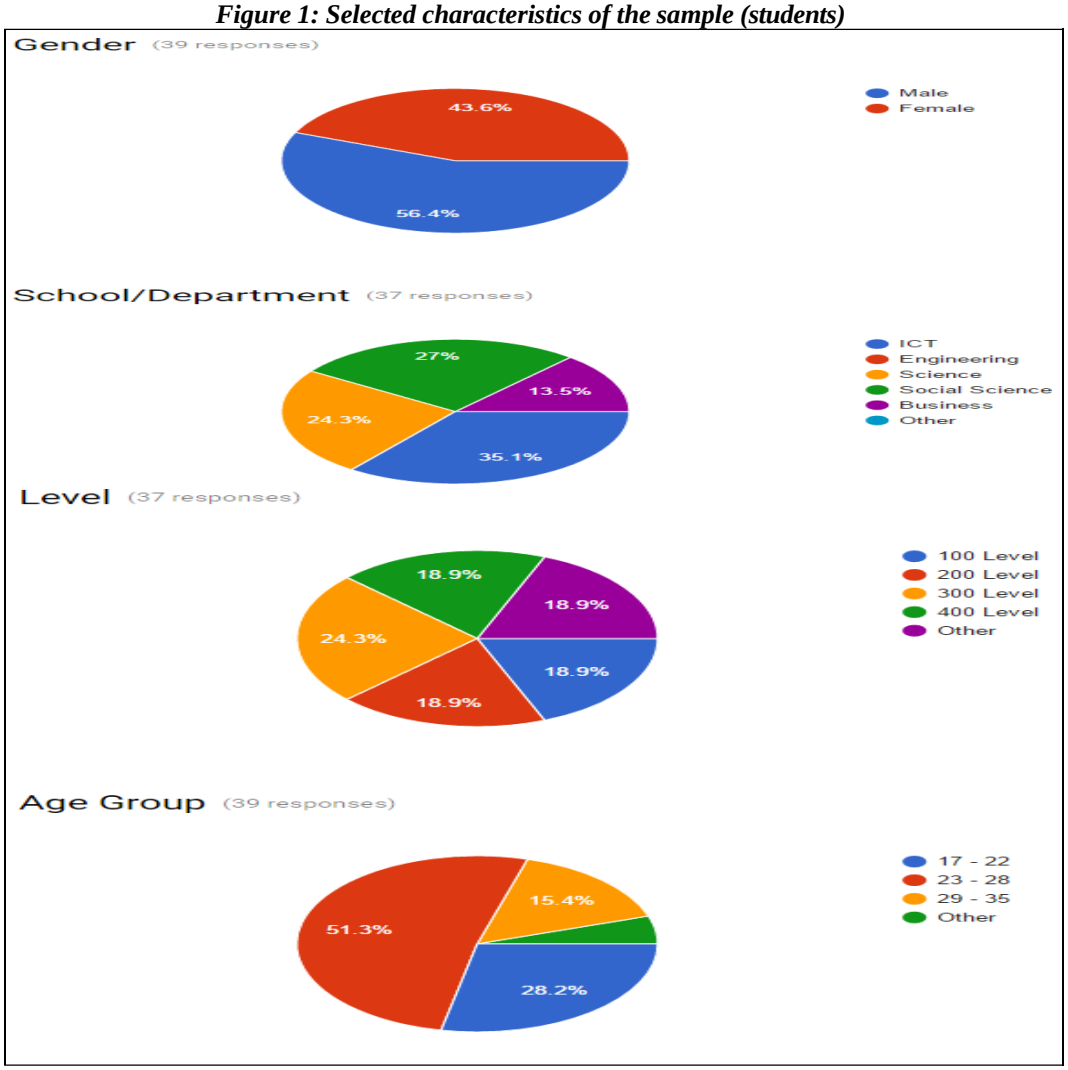
DATA ANALYSIS AND RESULTS FROM QUESTIONNAIRES.

Demographics

The demographic characteristics of the participants, both students and academic staff, are demonstrated in figure (1) and figure (2), respectively. As shown in Fig 1 below; a total number of 41 students representing 11 tertiary

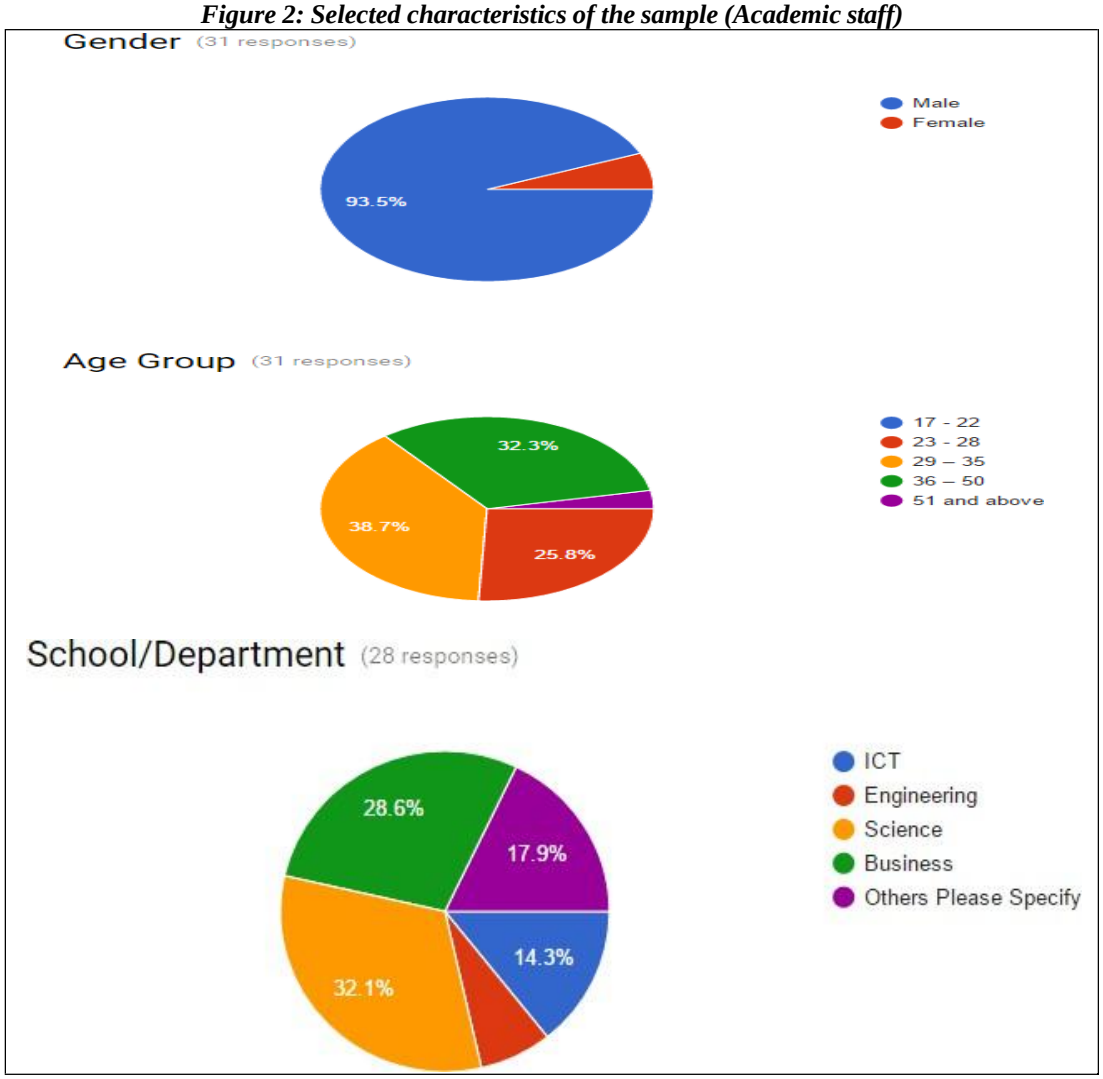
institutions in Nigeria responded to the questionnaire. The result shows that majority of the participating students were 300 level male students (24.3%, 56.4%), from the ICT department (35.1%), and they were between 23 and 28 years old.

Figure 1: Selected characteristics of the sample (students)



As shown in Figure 2 below; a total number of 33 academic staff representing 8 tertiary institutions responded to the questionnaire, in which the majority of the respondents are male (93.5%). Also, majority of the respondents are from the School of Science (32.1%), and between the age group of 29 and 35 years (38.7%).

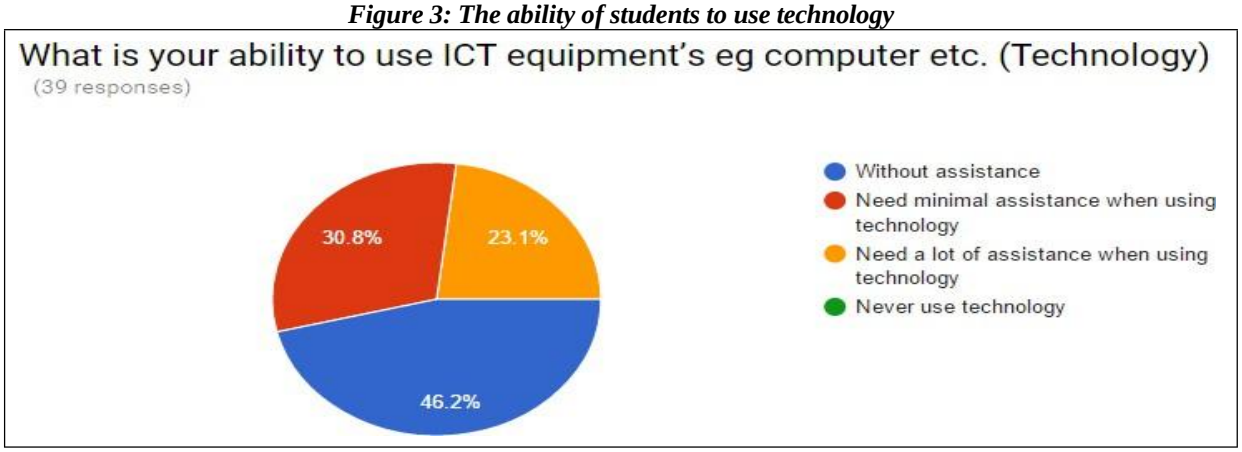
Figure 2: Selected characteristics of the sample (Academic staff)



Overall ability of students to use technology

The overall ability of the students to use technology was investigated (Figure 3). The results in Figure (3) show that most of the Tertiary institution students are able to use technology. Thus, the results show that 46.2% of the participants are able to use technology without any assistance while 30.8% need minimal assistance when using technology. The result further shows that 23.1% of students need a lot of assistance when using technology.

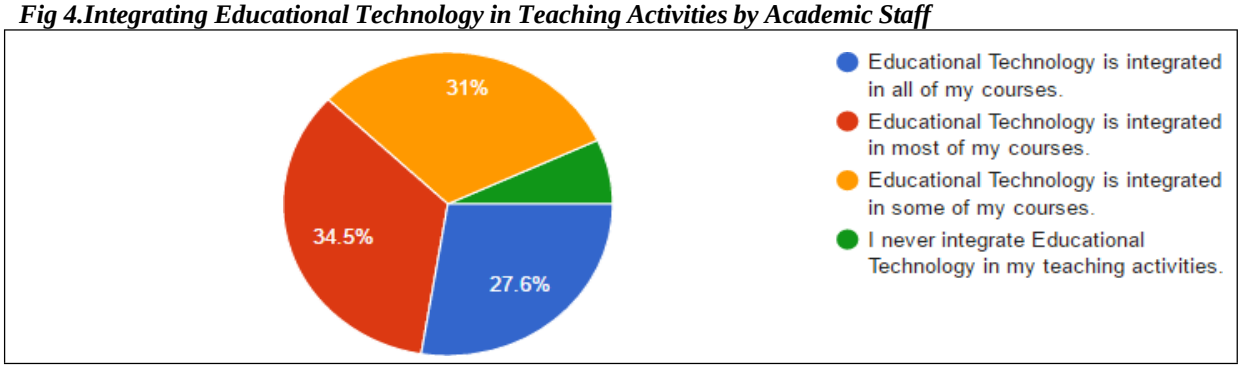
Figure 3: The ability of students to use technology



Integrating Educational Technology in Teaching Activities by Academic Staff

The frequency of integrating educational technology in teaching activities by academic staff was demonstrated and the results are demonstrated in Figure (4). The results show that 44% of the participants are integrating educational technology in all of their courses, while only 2% never integrated educational technology in their courses.

Fig 4.Integrating Educational Technology in Teaching Activities by Academic Staff



CONCLUSION AND RECOMMENDATIONS

The results of the current research has shown that Educational Technology has a positive impact in enhancing the performance of the students and the overall teaching and learning processes. However, Nigeria Higher should have to be prepared to purchase updated software and hardware's and put in place the necessary IT infrastructures to support students learning and academic staff effectiveness. Therefore, before institutions should take any decision to adopt certain Educational Technologies, there is need to develop strategic planning in which their vision and mission, together with the teaching and learning processes needs should be identified and integrated in their strategy. Nigerian government should also recognize the importance of technology in enhancing learning. Government should be funding higher institutions with budget specifically for putting educational technologies in place.

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