

Trends of Tertiary Education in Nigeria: Art Education and Technological Literacy Appraisal

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Abstract

Digital Technologies (DTs) have become the trend of teaching and learning in Nigerian tertiary institutions as a result of the recent COVID-19 pandemic lockdown. The DTs have changed the method of instruction and levels of students' involvement in art education. This study appraises classroom situations of art education in terms of technological tools usage, assessment methods, and pedagogical devices. The technology-based theoretical framework of Engestrom's Activity Theory (EAT), was used to analyse this study. The study was conducted at the Lagos State University of Education (LASUED), Oto/Ijanikin, Lagos, Nigeria. It adopts a qualitative research approach, using a case study, and purposively selecting participants from the Department of Fine and Applied Arts Education of LASUED. Data were collected using semi-structured interviews (SSI) and focus group discussions (FGD). The data were transcribed, coded, and analysed using content analysis with relevant themes and sub-themes for discussion. The findings show that the participants really accepted the use of DTs but occasionally used it due to inadequate DTs and the challenge of spending personal money cum epileptic power supply. Thus, recommended that; the Lagos State government should improve on more possession of and access to DTs and digital skills cum training and retraining of A&DEd lecturers and students to close low technological literacy level.

Keywords: *Appraisal, Art Education (AE), Technological Literacy (TL), Tertiary Education,*

Introduction

Digital technologies (DTs) have changed the global society into a village, as they now affect all aspects of human endeavour including education. The use of DTs is trending in Nigerian tertiary institutions, therefore there is a need to justify it in the discipline of A&DEd because DTs are used for drawing and designing too. In doing this, the researcher needs to appraise the availability, accessibility, and usability of digital tools; assess methods of teaching via technology and evaluate the implementation strategies for achieving the philosophy and objectives of the AE curriculum. In LASUED, Nigerian society is advancing and education is pivotal to this growth, from schooling to tertiary education, the standard of education seems to improve technological-wise (Fatunmole 2021). Research from Viatonu and Muse (2022) and Fatunmole (2021) shows that the attitudes of students, teachers, and the government (federal and state) toward the technological development of Nigeria's tertiary are becoming rampant. Albeit, Viatonu and Muse (2022) justified the level of government involvement in education is low, while Fatunmole (2021) attested how Nigeria gets the lowest education budget size in six years. Despite the shortage of funding, tertiary educators still manage to integrate technology into tertiary education, and Art Education is not left out.

The emergency of the COVID-19 pandemic lockdown prompted the advent of digital technologies and their rate of involvement at all levels of education, which brought drastic changes in the educational system globally. This is because learners are more influenced by technology drive at a faster rate to a large extent. Mcinziba (2020) reported that learners fully acquire skills, knowledge, and competencies in and through digital technologies, within and outside the four walls of the classroom. Therefore, the teachers' competency tells much more about the use of digital tools and their challenges (Nunez-Canal et al., 2022). Digital tools have metamorphosed learning to become positive in art institutions of higher learning globally and in particular, Nigeria. Williamson et al., (2020) explained that lecturers are able to get useful information through digital technologies; they help them integrate into active and meaningful learning for the students.

Statement of the Problem

The Nigerian government through the Federal Ministry of Education, state education boards, other stakeholders, and the National Universities Commission (NUC) have advocated for the technological literacy of tertiary educators. Despite, little progress and effort was recorded. Whilst AE is an academic discipline that has the capability of properly developing the cognitive, affective, and psychomotor domains of every individual, much attention has not been given to this discipline digitally, considering the low number of students admitted on a yearly basis (Ajayi et al., 2018). Hence, teaching and learning of it could best be carried out with the aid of demonstration and a combination of other methods of instruction for students to observe, understand, and practice the learning materials and contents being a practical-based discipline. Therefore, digital technology is mandatory for art education (AE) lecturers and students, due to the fact that; the nature of this discipline and the technological trends of teaching and learning are alarming globally.

Objectives of the Study

The objectives of this study are to:

- Explore the digital tools used by Nigerian tertiary educators; AE lecturers in LASUED, Oto/Ijanikin, Lagos State, Nigeria in teaching AE students.
- Assess the influence of technological literacy of AE teacher educators in developing students' learning in LASUED, Oto/Ijanikin, Lagos State, Nigeria.

Research Questions, Themes, and Sub-themes

Based on the problem statement above, answers were sought for the following questions with the necessary themes and sub-themes:

RQ₁. What digital tools do AE lecturers in LASUED Oto/Ijanikin, Lagos State, Nigeria draw on in teaching AE students?

T1: Means and Possession of DTs for teaching and learning AE at the University of Education. The ST1 are Computers, laptops, cell-phones, and cameras.

RQ₂. To what extent does the technological literacy (TL) of AE teacher educators influence students' learning and use of digital tools (DTs) in LASUED, Oto/Ijanikin, Lagos State, Nigeria?

T2: Frequency usage of DTs for teaching and learning AE at the University of Education. The ST2: Every day, every week, and every month.

T3: Creative use of DTs for teaching and learning AE at the University of Education. The ST3: Drawing, designing, expression, creativity, and finishing.

Theoretical Framework

This study used the Activity Theory founded by Engestrom in 1987; Engestrom's Activity Theory (EAT) to inform and analyse the phenomenon of how the actor uses the DTs within a given context, which is the tertiary educators using DTs as a trend. Activity theory is a framework that deals with a particular action and shows the processes of such action at different stages or levels (Kaptelinin & Nardi, 2006). Leontiev's (1978) hierarchical structure of human activity opine that human activities are collective and encouraged through their need to transform an object, be it material or idea (a problem or idea), into desired outcomes. Hence, this structure gives sense and direction to several activities or actions executed by the subject (individual or group) and is oriented toward specific targets or goals. Intentional actions (intrinsic) are executed via several routinised and automated operations, being mediated by tools that can be material such as books, computers, machinery, etc., or psychological like language, sign systems, models, etc. Engestrom's (1987) notion of activity systems is an expansion of Leontiev's (1978) triadic model – subject – tools – object. The expansion now includes the community (Tertiary Education: LASUED), composed of participants (art education lectures and students) sharing equal objects or motives, likewise, the regulations and division of labour governing the community (LASUED) and mediating the individual and collective actions executed by the participants (Engestrom, 1987).

According to Morf and Weber (2000), EAT (1987) is a framework based on the idea that activity and doing are primary and precede thinking. It also explained that goals, images, cognitive models, intentions, and abstract notions grow out of people doing things. EAT (1987) can be used to explain the complex and dynamic challenges of an individual's activities, actions, reactions, or executions. It is recognised as an educational theory that is holistically rich in how people do things together with the assistance of technological tools in an intricate and dynamic environment (Crawford & Hasan, 2006). EAT (1987) adopted learning technology as the tool in a community of tertiary education or institution, the subject was the lecturers and students (teaching and learning) while the object was the purpose of the activity, and the desired outcome (artistic and technological skills acquired) is the result of student's creativity in artistic constructs.

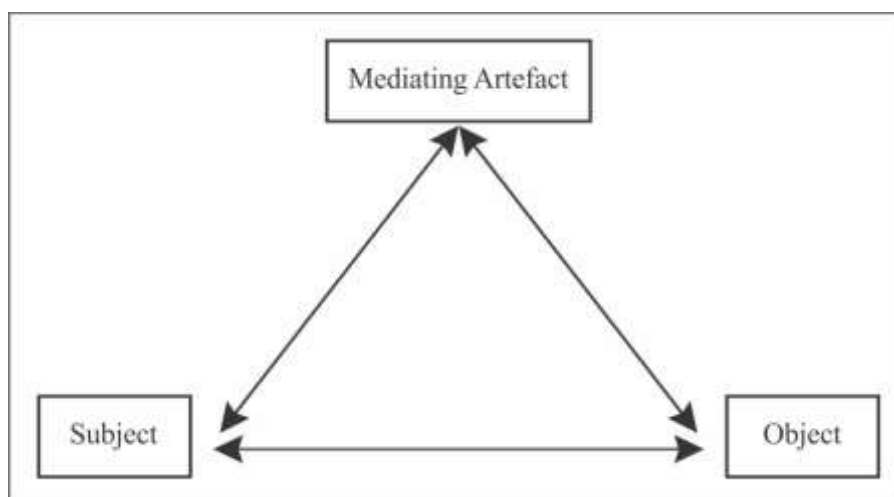


Figure 1: Adapted Engestrom's Activity Theory (EAT) (1987).

The analysis of activity systems (EAT 1987), helps in understanding the activities concerning teaching and learning in higher education as they unfold (Kirkup & Kirkwood, 2005). It also helps in understanding troubleshoots, tensions, and conflicts that occur when newly using technology through technical know-how. This troubleshooting disrupts teaching activities, but if it is adopted as new curricula, methods of teaching, method of evaluation, resources, and tacks, Engestrom’s theory of expansive learning is manifested. If on the contrary, the new technology is rejected, the activity is not disrupted. In the present study, the activity systems in tertiary education gave the researchers an idea of whether the tertiary education community accepted or rejected the technology.

Reviewed Literature

Technology and Technology Literacy

Technology is the scientific knowledge used in practical ways to meet and satisfy human needs and comforts (Gek 2014 cited in Ayeni et al., 2018). It can also be referred to as the collection of techniques for a purpose. This means that technology is the current state of humanity’s knowledge, skills, usage (methods), and tools of how to combine resources and facilities to produce desired products to solve problems (teaching and learning of AE problems), fulfill needs, or satisfy wants; it includes technical methods, processes, techniques, tools, and raw materials (Borgmann, 2006). It further means that technology is not just the knowledge of science and computer or drawing, painting, and sculpture; but rather ways of doing things practically that require expertise using machines. All artifacts around us in our daily lives are products of technological advances that have developed over the century of our existence. We have transformed natural resources to make tools and machines that make our lives easier and satisfy our curiosity and desire to excel. Albeit, technology can be crafted which is still under Art. The diagram in Figure 2 below depicts technology and its application.

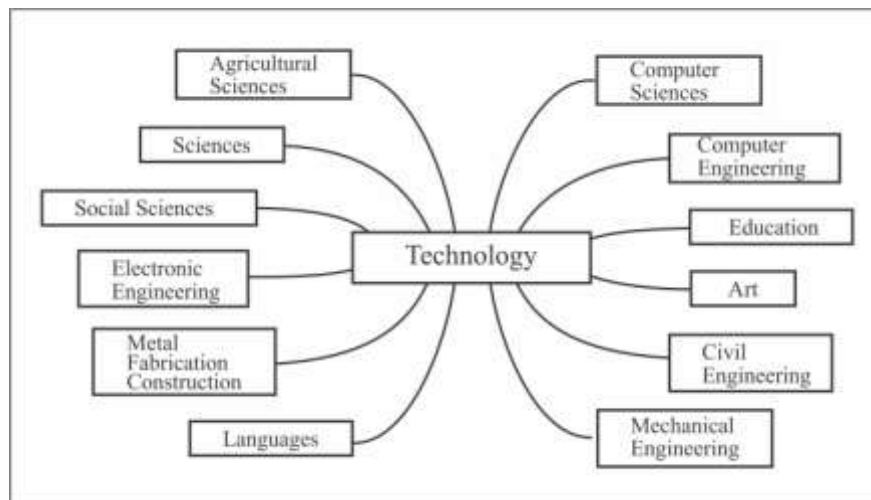


Figure 2: Interconnectivity of technology with art and other disciplines adapted from Ajayi et al., (2018).

From the above diagram, technology is central to all disciplines, and it is inevitable in AE; it cut across all human endeavours. Currently, the efficiency of mankind is intricately tied to technology, whether in teaching and learning, design, construction, advertisement, branding, animation, instruction, preservation, development, advancement, improvement, renovation, improvisation, or innovation.

Technological literacy is described as the ability to use, manage, understand, and assess technology. To be literate in technology is to have the moderate knowledge and ideas required to practically manipulate tools like an expert. Technological literacy is the modern way of doing things through machines. Luckay and Collier-Reed (2014) also state that technology literacy is “understanding the nature of technology, having a hands-on capacity and capacity to interact with technological gadgets or artifacts, and being able to think critically about issues relating to technology”. This made Latorr-Coscolluela et al., (2021) and Diana (2013) reiterate the significant role of technology in 21st-century teaching and learning environment, which offers the opportunity to reform and rebuild the model we use to foster student competencies and TL in this jet age. Reason Luckay and Collier-Reed (2014) define TL as understanding the nature of technology and the capacity to interact with technological artifacts which could be physical technology and not just computer-based technology known as ICT. This understanding allows the AE lecturers in tertiary education to select the appropriate digital tools (computer, camera, projector, cell-phone, and software like internet/Wi-Fi, Google, Zoom, WhatsApp, email, CorelDraw, and a host of others) for their teaching vice-a-vice AE students for their learning.

Art Education and Technological Literacy Trends and Involvement

Artistic activities today are influenced by the new trend propelled by emerging technologies. The new technologies have led to artistic innovations either by increasingly altering artistic media content or by evolving the creation of new media. “As the technological medium progress, new art forms emerge” (Samdanis, 2016). AE lecturers and students also, manipulate technology either through demonstrations, typing, drawing, painting, sculpture, photography, graphic designs, textile designs, writing examinations, sending emails, or submitting class works and assignments within and outside the classroom through cell-phones and laptops (Okuntade & Aremu, 2016). Since technology is highly trending fast and seems to be the rave of the moment, both lecturers and students were forced to be drastically keen on the technical know-how of DTs in teaching and learning AE, whereas physical technology is not abandoned.

Samdanis (2016) cited databases art, internet art, satellite art, or big data, as some examples of emerging art forms as artists incorporate DTs within their artistic practices. These examples are considered a niche of contemporary Art, which to some extent are seen as more scientific than artistic. Likewise, the art of photography and cinematography through various digital camera effects has also influenced conventional art practice. To this end, technology; has given birth to new art genres such as digital Art, kinetic Art, etc. Sculptors also began to use 3 DI scanners and a printer to alternate the sculptural pieces while painters uses Photoshop and illustration programs as tools to aid in the creation of art forms. Before the advent of new technologies, artists engaged their cognitive, affective, and psychomotor domains effectively to conceptualise and render designs or pieces of art, but Oyedun (2013) affirms that today the greater part of the artistic practice is technology-engaging especially at the tertiary institutions. Through the internet, other DTs, and platforms, individual styles, material manipulations, artistic concepts, and renditions have been watered down by the frequent dependence on technology to create them within and outside the classroom (Oyedun, 2013). However, the benefits of technology to the arts and artists cannot be over-emphasised. The new technologies have helped in the production process, in terms of precision, timeliness, the volume of production, man-hour economy as well as financial values. Although, the technology devices are either unavailable, inaccessible,

incompetency, phobia; or lukewarm attitude poses a huge challenge to its use amongst lecturers and students in the Department of Fine and Applied Arts at the Universities of Education in Lagos State, and Nigeria.

Methodology

This study adopts a qualitative approach which refers to an in-depth descriptive study of the phenomenon (Creswell, 2006) with data drawn from interviews, focus group discussions, and field notes.



Figure 3: Instrument of qualitative approach.

Data were collected through semi-structured interviews (SSI) and focus group discussions (FGD). Interviews with the AE lecturers and students as participants of the study were conducted conveniently and lasted for about sixty minutes which allowed sufficient time to harvest the deeper meaning of participants' views before being exhausted. These interviews were audio-recorded, transcribed, and coded while field notes were also written where necessary. Purposive sampling was used for the study, out of 9 lecturers in the FAA Department, 5 are purposively selected and 10 students were selected from the population of 15 students in the 200-level. The student was selected because they are on the ground and more mature than 100-level students, while the 300-level students had embarked on teaching practice. The coding pattern of the themes, sub-themes, and participant's identity was depicted, the themes as T: 1-3, sub-themes as ST: 1-3, the 5 AE lecturers for Semi-Structured Interview are represented with the code SSIL: 1-5 which means Semi-Structured Interview with lecturers, and FGD participants were coded with FGDS: 1-10 which means Focus Group Discussion with students. The emerging theme and sub-themes in connection with the research objectives and research questions were used to analysed the data with the socio-demographic characteristics and frequency of informants, and through the responses of the participants as content analysis.

Results

The result findings were presented based on the participants' responses. It started with the socio-demographic characteristics and frequency of the informants or participants. The socio-demographic characteristics and frequency of informants are categorised into three sections namely; sections A, B, and C. Section A involves gender, age, and marital status, while section B envelopes religion, ethnicity, and educational level, and section C includes the area of specialisation, years of a job of experience and designation.

The themes and sub-themes emerged from participants' responses as content for analysis. But the research is gender bias dues to the fact there is only one female lecturer in the FAA Department

of LASUED, Oto/Ijanikin, Lagos State, Nigeria. The socio-demographic characteristics and frequency of informants are shown in the table below:

Table 1: Present the Socio-Demographic Characteristics and Frequency of Informants of Participants’ Gender, Age, and Marital Status.

	Socio-Demographic Characteristics	Frequency of Informants	Socio-Demographic Characteristics	Frequency of Informants	Socio-Demographic Characteristics	Frequency of Informants
A	Gender		Age		Marital Status	
	Male	5 (100%)	Below 50 yrs.	3 (60%)	Single	-
	Female	-	Above 50 yrs.	2 (40%)	Married	5 (100%)
	Total	5 (100%)	Total	5 (100%)	Others	-

Table 3: Present the Socio-Demographic Characteristics and Frequency of Informants of Participants’ Area of Specialisation, Years of Job Experience, and Participants’ Designation.

	Socio-Demographic Characteristics	Frequency of Informants	Socio-Demographic Characteristics	Frequency of Informants	Socio-Demographic Characteristics	Frequency of Informants
C	Area of Specialisation		Years of Job Experience		Participants Designation	
	Art Edu/Paint.	1 (20%)	Below 20 yrs.	3 (60%)	Graduate	3 (60%)
	Ceramics	1 (20%)	Above 20 yrs.	2 (40%)	Assistant	2 (40%)
	Cloth.&Textiles	1 (20%)			Assistant	
	Graphics	1 (20%)			Lecturer	
	Sculpture	1 (20%)				
	Total	5 (100%)				

Table 1- 3 shows the Socio-Demographic Characteristics and Frequency of Informants (AE Lecturers). It revealed that 5(100%) possess Masters of Art and above qualifications with different areas of specialisation, 3(60%) are below 20 years and 2(40%) are above 20 years of job experience, and 3(60%) are lecturer III while 2(40%) are chief instructors. These are the occupational status of the AE lecturers involved in this study. Note: the only Ph.D holder, refused to participate in the study.

Analysis and Discussion

T1: Possession of Digital Technologies

The AE lecturers were interviewed (SSI) on the digital tools used in teaching AE and how they were possessed at the University of Education. Below are the findings:

Theme	Sub-theme	Discussion
T1: Possession of Digital Technologies	ST1: Computers, Laptops, Cell-phones, and Cameras.	100% of AE lecturers and students admitted unstable internet but possess it in the studios, classrooms, and offices. Thus, most lecturers and students used their personal laptops, cell-phones, and cameras for teaching and learning AE The lack of DTs is prone to inadequate funding by the government and tertiary education management to provide DTs. Thus, the usage of DTs for teaching and learning AE at LASUED is improving compared to teaching and learning before and during the COVID-19 pandemic lockdown.

T2: Frequency Usage of Digital Technologies

Theme	Sub-theme	Discussion
T2: Frequency Usage of Digital Technologies	ST2: Every day, every week, and every month.	Precise usage time is not stated by the AE lecturers and students because no stable and adequate digital tools. Likewise, from observation, the graphic lecturer was found using DTs to teach every week while other lecturers used them occasionally. Some students have no money to buy data likewise the lecturers, thus, individuals' activities, actions, reactions, or executions are not dynamic yet, they used it (CO, EAT). AE is disrupted, but the activity still meets the desired outcome (EAT, 1987).

T3: Creative Usage of Digital Technologies

Theme	Sub-theme	Discussion
T4: Creative Use	ST4: Drawing, Designing, Expression, Creativity, and Finishing.	Personal development of AE lecturers and students abound reason they have few common ones. This aspect is paramount to graphic design, painting, and drawing but, none of the AE lecturers and students make use of the wamco tool for drawing, airbrush, and other software for painting and designing. The EAT (1987) also supports the use of new DTs to create artistic concepts and achieve a desirable outcome. This is easily done through AE practical classes or activities. AE lecturers and students seem able to achieve teaching and learning goals faster and easier when digital tools were used than traditional classroom teaching methods.

Discussions

During FGD, some of the AE students affirmed the use of DTs; and possession of the Internet. One of them revealed thus:

.... Our lecturers make use of computers (laptops), and we also make use of it to learn more about graphics. Because, as we all know before technology came to play, we made use of manual materials or let me say instruments. But in the emergence of technology, we now use them (FGDS5).

The table of T1 and ST1 shows that the majority of the AE lecturers and students reported having possessed DTs, yet they are inadequate or insufficient. In this regard, almost all the AE lecturers reported having bought and used personal DTs. One AE lecturer says;

.... open possession and accessibility to the internet anytime and any day unstable. Yes, the teaching is effective, but the use of digital tools is not much effective. This is because the lecturers provide the materials to use themselves. (SSIL2).

The response above was justifiable by EAT (1987) because the LASUED community adopted teaching and learning AE with DTs (an activity) but the desired outcome is weak due to insufficient and inadequate digital tools (DTs) for both AE lecturers and students.



Figures 4 and 5: Showing FAA Department LASUED and theme 1, and sub-theme 1.

During the interview of the AE lecturers and students about how regularly they used digital tools in teaching and learning, most of them reported occasional use, as shown in the response below:

...it is trending, but the challenges I think classrooms encounter today, using these tools is that; more of the tools should have been available at least to the students and to the lecturers, so I use them occasionally (SSIL5).



The data collected for T2 and ST2 indicates that almost all the AE lecturers and students claimed to use DTs often to teach and learn, but when asked how often (numbers of times); some responded once in a week, twice in a week, once in two weeks, in a month, once in two months and so on, this justifies occasional use.

Figure 6: Showing the occasional use of digital tools; desktop computer to teach AE at LASUED, Oto/Ijanikin, Lagos State, Nigeria.



Whereas, one of the classroom observations revealed that; only one or two of the AE lecturers teach with DTs aside from the two FGD participants whom I found in the studio executing assignments with their laptops. This is the trend in tertiary education.

Figure 7: Showing AE students executing assignments with their laptops in the drawing studio of the Department.

Creative usage of DTs involves several designs and activities based on the academic culture of the FAA Department and the personal development of AE lecturers and students. In this view, AE lecturers and students practice on their own to teach, learn, and carry out assignments either in the studios, computer rooms, or classrooms (see T3, ST3). This, according to EAT (1987) involves subject – tools – object. EAT adopts learning technology as a tool in the community of tertiary education or institution. Here, the subject was the AE lecturers and students (teaching and learning) while the object was the purpose of the activity (via digital tools), and the desired outcome (artistic and technological skills acquired) is the result of the teacher's and student's creativity in artistic constructs (T3). Although, AE lecturers and students possess limited creative ways (basic use) of using DTs in teaching and learning. So, DTs make artistic activities easy and fast with different hardware and software, especially when teaching two-dimensional arts. An AE lecturer has this to say:

... I have software; CorelDraw, Photoshop, InDesign, and Paints. They are installed on the system, and I use them for graphics class to create 2-D art (SSIL3).

Two AE students also affirm that:

.....Learning with digital tools guides us in our area of specialisation. And also, more creativity for the one you know and also using technology to increase the creativity in you so that you can apply it in what you're doing (FGDS9).

.... There are computers in the graphics studio where we practice most of the things being taught in graphics and most times, we have our class there, we see things that we're taught being displayed and even give us room to practice on our own (FDGS3).

The above statements justify that AE lecturers and students seem able to achieve teaching and learning goals faster and easier when DTs were used than when traditional classroom teaching methods. Despite the inadequate access to DTs mentioned above, some AE lecturers and students (especially the graphics section) who acquire both digital skills and personal tools such as computers (laptops), cell phones and design software often possessed brilliant enablement of AE creativity development, execution, and criticism (T1, ST1). Little wonder, Whewell et al.,

(2022) and Eady and Lockyer (2013) state that using appropriate technologies to create artifacts and products allow lecturers and students to demonstrate creative thinking and knowledge construction (T3, ST3). In the same manner, EAT (1987) supports the use of new digital tools to create artistic concepts and achieve a desirable outcome. This is easily done through AE practical activities.

Conclusion

The use of DTs when teaching and learning EA in the studios, classrooms, and computer room is important presently. It is a technological activity according to EAT (1987). The findings show that tertiary educators and teacher trainees in Nigerian tertiary education especially LASUED, Oto/Ijanikin, Lagos State, now use DTs occasionally to teach and learn AE against traditional classroom situations (T2, ST2). This may be partly attributed to the lack of DTs and technological competence, and insufficient possession. Some AE lecturers and students used non-professional software to teach and learn AE; employ personal DTs like cell-phones mostly and a few laptops to access the internet as a means of complying with the new trend. Although, the desired teaching and learning outcomes may be weak (EAT, 1987) yet the struggle to use them is alarming.

Recommendations

Based on the findings, it is recommended that:

- The DTs that currently exist in LASUED, Oto/Ijanikin, Lagos State, Nigeria should be improved for more possession of and access to DTs and digital skills (T1, ST1).
- Training and retraining should be rolled out to AE lecturers and students constantly to bridge the gap of TL, thus, branding hybrid TLL (T3, ST3).
- There should be an operation bring your device (BYD) and work with it (WWI) for both AE lecturers and students at LASUED generally.
- The LASUED Management and Lagos State Government should collaborate with the service/network providers like MTN, Glo, Airtel, and 9mobile to provide adequate, effective, efficient, and open-accessible Wi-Fi (internet) for the University.
- Adequate funds should be pumped into tertiary education to acquire DTs for AE lecturers and students and tertiary educators at large to enhance teaching and learning.
- Finally, the government of Lagos State should synergise efforts to make tertiary education a global standard technological-wise.

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