

DIGITAL TRANSFORMATION AND EFFECTIVE TEACHING IN PUBLIC UNIVERSITIES IN SOUTH-WEST, NIGERIA

KARIMU, ADEKEMI YEWANDE

Department of Educational Technology, Tai Solarin University of Education
Ijagun, Ogun State, Nigeria

Corresponding author: E-mail: karimuay@tasued.edu.ng

GSM: +23480 7635 8650 / +23481 6626 1237

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ISHOLA, ADEBAYO MONSUR

Department of Educational Technology, Tai Solarin University of Education
Ijagun, Ogun State, Nigeria

E-mail: isholaam@tasued.edu.ng

GSM: +2347059209901

Abstract

This study examined the influence of digital transformation on effective teaching in public universities in South-West, Nigeria. Two research questions guided the study. A descriptive survey research design was used. The population comprised academic staff in Olabisi Onabanjo University, Ago-Iwoye, Ogun State and Tai Solarin University of Education, Ijagun, Ogun State. A total of 150 academic staff were as sample size. Purposive sampling technique was used in selecting the sample size. A self-researcher-designed instruments titled Digital Transformation and Effective Teaching Questionnaire (DTETQ) with 0.88 as reliability coefficient was used for data collection. Descriptive statistics of mean and standard deviation were used for answering research questions. The findings of the study revealed that improved accessibility and access, personalize learning approaches, visual reality, cloud-based learning opportunities, incorporating internet access into the school environment, security across digital devices and teaching digital citizenship were among the types of digital transformation required for effective teaching in public universities. It was also indicated that proactive in learning and flexible educational environment, unlimited access to learning materials, increased interactivity and real-world experience, the quality of education is improved, maximum savings in training and learning costs, improved students' engagement, stimulating innovation in teaching and learning, enrich collaboration of academic work and develop digital literacy were among the benefits of digital transformation in effective teaching in public universities. Appropriate involvement of government in the development of a digital transformation framework for learning in public higher institutions of learning. The government can equally work in collaboration with the private sector to ensure that a digital transformation framework that meets the needs of students enrolled in the public higher institutions of learning is developed.

Keywords: Effective Teaching, Digital Transformation, Public Universities, Ogun State.

Introduction

Teaching has been one of the ways to impart knowledge on the students. It has been the hallmark of educational goal achievement; without teaching, meaningful learning cannot take place. Effective teaching is paramount among stakeholders in education because when it occurred, the outcomes are students' academic performance. That is, effective teaching manifest in form of students' academic performance at all level of education. Effective teaching is type of teaching characterized by the exhibition of intellectual, social and emotional stability, love for students and positive disposition towards the teaching profession and ability to inspire good qualities in students (Onyekuru&Ibegunam, 2019). It was also defined as the ability of instruction to inspire students of different abilities while incorporating instructional objectives and assessing the effective learning mode of the students; as well as effective teaching is a measure of the extent of realization of the instructional objectives. It is a net growth in intellectual aptitude and skills as measured by students' achievements (Evans, 2020). Effective teaching in any courses is the single biggest contributor to students' academic success. Effective teaching outweighs other factors which influence students' performance such as class size, gender and socioeconomic background of the students. However, the usage of digital transformation could bring about improved effective teaching that can translate to students' academic performance.

Digital transformation has evolved as the main issue for higher education institutions (HEIs) across the globe. Digital transformation is the means of improving the core business operations of an organization to fulfill customer needs proficiently by making use of data and technology (Berman & Marshall, 2014). In the education sector, students, faculty, staff, and alumni are the target customers. Digitization of the education sector can be advantageous for both students and faculty. Digital Transformation focuses on improving student and teacher's experience by allowing students to register for admission online through a mobile app or web app, providing them an extensive range of online learning options, allowing faculties to use technology for tracking student progress and run intervention protocols and allowing faculties to conduct and organize online classes (Shailja&Shubhangi, 2022). Effective online teaching depends on factors such as fast and consistent internet connectivity, learning software, digital skills, affordability, and introduction to technology. The disruption caused by the pandemic forced universities to go for digital transformations in the area of education (Murthy & Madhok, 2020). Apart from highlighting the advantages of digital transformation in education sectors, Jha et al. (2020) discussed the various challenges and issues faced by academics, students, and the management due to the digitization of education sectors. The first challenge in digitization is giving online education to students of different caste, gender, and background knowledge. There are many operational issues like the unavailability of internet speed, trained instructors, proper environment, physically developed students, insufficient funds, and so on.

Undie (2023) stated that technology enriches classrooms with digital learning aids like computers and portable devices to improve teaching and learning. It broadens course options, experiences, and learning materials; fosters 21st-century skills; heightens student involvement and motivation; and leads to improved learning and understanding. Every effective teacher prioritizes these factors, and they can be obtained by utilizing Digital Learning Technologies (DLTs). Digital learning technologies are teaching and learning tools that are created digitally

or through the digitization of analogue materials (Undie, 2023). These tools include simulation, animation, quizzes, electronic textbooks, learning objects, graphics, photographs or photos, audio, video, and other digitally formatted capabilities (Bizimana&Orodho, 2014). All sorts of electronically supported learning materials in which text, voice, photographs, images, graphics, and videos can be delivered to students online at the same time are referred to as DLTs. While learning online, these resources enable students to interact with digitally delivered content, network-based services, and tutoring support.

Digital transformation is any general-purpose or learning-specific facility that is available online for use by the classroom teacher in addition to being a learning aid for the learners. Digital transformation technologies are used in web-based learning to generate information and enable the transmission of educational material content. These relatively new technologies, according to Ghavifekr and Rosdy (2015), have new pedagogical delivery systems with the ability to use responsive, quick access, and inclusive instructional climate. Some of the new pedagogical delivery systems introduced by digital transformation facilities include computer-managed instructions, audio-tutorial systems, cybernetics, computer-enabled networking, video and audio conferencing and so on (Undie, 2023). The new systems have varying degrees of interactivity, as well as ways for users to actively participate in knowledge transmission. These distribution systems broaden students' learning options and also impact the educational process, particularly on how, where, and when teachers and students can obtain knowledge and information in the twenty-first century.

In reiterating the importance of digital transformation in effective teaching, Jude (2014) stated that digital learning frees learners from the constraints of time and space that conventional learning imposes, allowing them to choose the time and location for online learning and avoid time or space constraints via the instructors' online engagement mechanism. In a traditional classroom setting, the equipped vibrate with vitality, while the experienced exhibit self-assurance in the unfolding process of instruction. This is because the instructor is the most important factor in a conventional classroom. He sets the tone, defines the space, and directs the flow. He relies solely on the lecture method. This technique gives little room for student-teacher interaction, as a result, teaching becomes monotonous and student engagement suffers. In this regard, digital learning technology has emerged as the most effective medium because it allows for two-way communication as well as the visual presentation of objects and other activities. The application of digitized educational aids could provide more significant and effective direction to the instructor than any personal efforts made in the absence of these resources (Jude, 2014). People's learning habits, where they learn, and when they learn can all be altered by digital transformation. Traditional teaching methods are already evolving in order to improve instructors' professional practice and better meet students' needs in the 21st century (Pavlova, 2020).

Students in the twenty-first century are increasingly becoming digital natives. Most of them need to be taught quickly, while others need further encouragement. Some people, on the other hand, need to study at any time and in any place. Adapting diverse curriculum delivery modalities into the educational environment is one strategy to respond to the needs of today's students. Traditional large-group lectures may meet the learning needs and lifestyles of some students, while others may require a variety of modalities. Digital learning resources hold the

key as they can provide a variety of benefits, including personalized instruction design to meet the needs, abilities, learning styles, and interests of the learners; unlimited access to the same quality content as a full-time student; and encouraging collaboration among students from various locations and cultures (Pavlova, 2020). Digital learning technologies allow for a variety of ways to learn. In hybrid learning approaches, regular in-person classroom sessions are combined with remote access to technology. In both cases, technology can be used to personalize learning strategies for individual students. Teachers can create classes based on their students' interests and strengths. Furthermore, learners can progress at their own pace, which is advantageous (Pavlova, 2020). According to Detola and Johnson (2022), digital transformation in education is a process of replacing traditional educational methods with modern educational methods, including facilities and educational methods, teaching methods, management methods, etc. It makes full use of technology to aim for high quality education. For education in general and higher education in particular, digital transformation offers the opportunity to apply technology to create rapid changes in models, organization and teaching and learning methods. Accurate understanding of digital transformation and proper assessment of the current situation to build a reasonable digital transformation roadmap to quickly improve the quality and effectiveness of training (Detola& Johnson, 2022).

Statement of the Problem

The teaching process in tertiary institutions is faced with myriads of problems ranging from non-availability of the digital technology tools which make it difficult to teach and prepare students for the use of these technologies now and in the future world of work. Poor academic performance among students and lack of employable skills can also be attributed to non-availability digital tools in teaching. In addition, there is a growing number of student's population leading to overcrowding which the old method being used is not helping to deliver information to them at same time. It is also important to note that poor knowledge of computer by the lecturers is also a great challenge to the teaching with the use of ICT, because a lot of them still make use of the old method of teaching even in this jet age and computer era, where understanding is easier, better and faster with digital technology. Unfortunately, government failure to provide adequate facilities for the implementation of such technologies in the classroom has left the situation unchanged. This paper is an attempt to examine digital transformation and effective teaching in public universities in South-West, Nigeria.

Objectives of the Study

The main objective of the study was to examine the influence of digital transformation on effective teaching in public universities in South-West, Nigeria. Specifically, the study strives to identify the:

1. Types of digital transformation required for effective teaching in public universities.
2. Benefits of digital transformation in effective teaching in public universities.

Research Questions

The following research questions guided this study:

1. What are the types of digital transformation required for effective teaching in public universities?
2. What are the benefits of digital transformation in effective teaching in public universities?

Methodology

A descriptive survey research design was used for the study. The design is appropriate because it enabled the researchers to collect the opinions of the respondents towards answering the research questions. The population of this study comprised academic staff in Olabisi Onabanjo University, Ago-Iwoye, Ogun State and Tai Solarin University of Education, Ijagun, Ogun State. A total of 150 academic staff from these selected two universities were the sample size of the study. Purposive sampling technique was used in selecting the sample size. A self-researcher-designed instruments titled Digital Transformation and Effective Teaching Questionnaire (DTETQ) was used for data collection. This questionnaire was used for the collection of data from the academic staff on types of digital transformation required for effective teaching and the benefits of digital transformation in effective teaching. The questionnaire requested responses on a four (4) – point scale format which was a modification of 5-point Likert scale. The responses rating scales are as follows: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). To ensure the face and content validity of the instrument (DTETQ), copy of the instrument was given to 3 experts for content correction. After all the identified corrections have been made, the final drafted copy was used to gather the required data for the study. Reliability test of the instrument (DTETQ) was done using a test-retest method. In this case, copies of the instruments (DTETQ) were administered on 10 academic staff of Lagos State University (LASU), Lagos State that are not part of the sample size within a week interval. The collected data from the administration of the instruments were compared using Pearson moment reliability statistic. The reliability coefficient of the instrument was reported as 0.88. Primary method of data collection was adopted and it involved the usage of questionnaire to collect data needed data for the study. Descriptive statistics of mean and standard deviation were used for answering research questions.

Results and Discussion

Research Question 1: What are the types of digital transformation required for effective teaching in public universities?

Table 1: Descriptive statistics on the types of digital transformation required for effective teaching in public universities

Items	Mean	Standard Deviation	Remark
Improved accessibility and access	2.98	.503	Agreed
Personalize learning approaches	2.76	.679	Agreed
Visual reality	2.82	.664	Agreed
Cloud-based learning opportunities	3.01	.745	Agreed
Incorporating internet access into the school environment	3.21	.773	Agreed
Security across digital devices	2.68	.694	Agreed
Teaching digital citizenship	2.94	.583	Agreed
Cluster Mean	2.91		

Source: Field Survey, 2024.

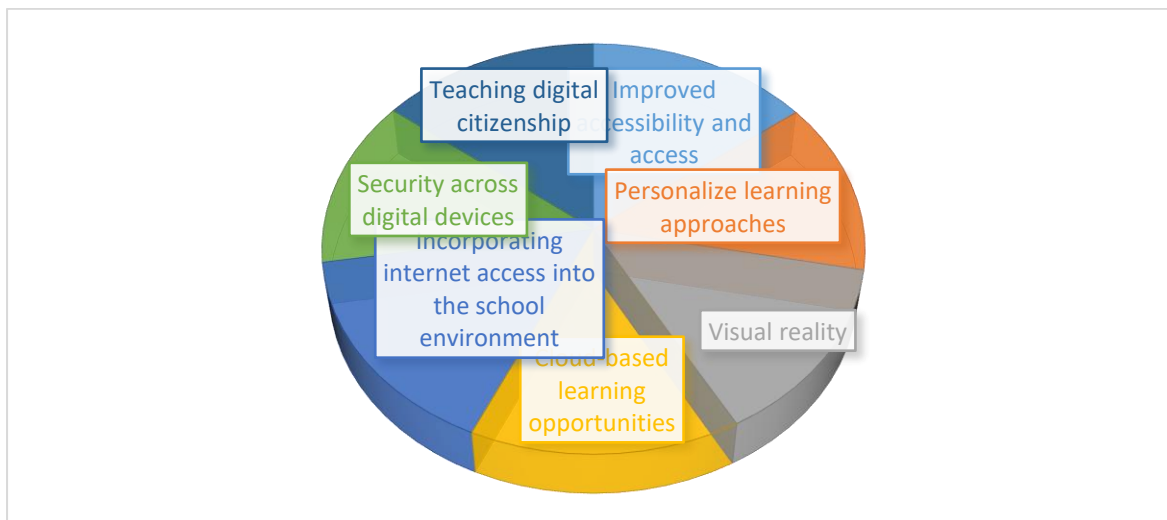


Figure 1: Pie-chart showing the types of digital transformation required for effective teaching in public universities

From the above table 1, it was revealed that cluster mean was 2.91 which greater than the bench mark of 2.50 ($2.91 > 2.50$). The implications of this was that improved accessibility and access, personalize learning approaches, visual reality, cloud-based learning opportunities, incorporating internet access into the school environment, security across digital devices and teaching digital citizenship were among the types of digital transformation required for effective teaching in public universities.

Research Question 2: What are the benefits of digital transformation in effective teaching in public universities?

Table 2: Descriptive statistics on the benefits of digital transformation in effective teaching in public universities

Items	Mean	Standard Deviation	Remark
Proactive in learning and flexible educational environment	3.01	.489	Agreed
Unlimited access to learning materials	2.99	.682	Agreed
Increased interactivity and real-world experience.	2.58	.714	Agreed
The quality of education is improved	2.63	.604	Agreed
Maximum savings in training and learning costs	2.80	.633	Agreed
Improved students engagement	2.74	.599	Agreed
Stimulating innovation in teaching and learning	3.17	.501	Agreed
Enrich collaboration of academic work	3.15	.499	Agreed
Develop digital literacy	3.09	.503	Agreed
Cluster Mean	2.90		

Source: Field Survey, 2024.

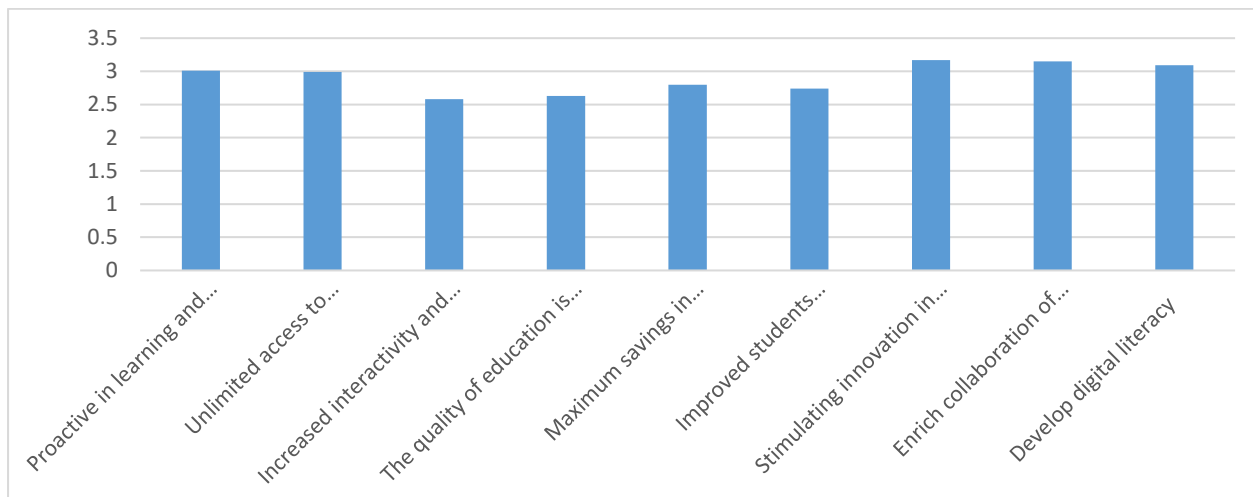


Figure 2: Bar-chart showing the benefits of digital transformation in effective teaching in public universities

Table 2 indicated that cluster mean was 2.90 which greater than the bench mark of 2.50. This implied that proactive in learning and flexible educational environment, unlimited access to learning materials, increased interactivity and real-world experience, the quality of education is improved, maximum savings in training and learning costs, improved students' engagement, stimulating innovation in teaching and learning, enrich collaboration of academic work and develop digital literacy were among the benefits of digital transformation in effective teaching in public universities.

Discussion of Findings

The findings of the study based on research question 1 revealed that improved accessibility and access, personalize learning approaches, visual reality, cloud-based learning opportunities, incorporating internet access into the school environment, security across digital devices and teaching digital citizenship were among the types of digital transformation required for effective teaching in public universities. These findings corroborate with Undie (2023) that the use of virtual reality simulation and teleconferencing by business educators in Nigeria's South-South universities was found to significantly predict their teaching effectiveness.

Based on research question 2, it was indicated that proactive in learning and flexible educational environment, unlimited access to learning materials, increased interactivity and real-world experience, the quality of education is improved, maximum savings in training and learning costs, improved students' engagement, stimulating innovation in teaching and learning, enrich collaboration of academic work and develop digital literacy were among the benefits of digital transformation in effective teaching in public universities. These findings were in support to Mamdouh, Saja and Mohammed (2023) who found that digital revolution encouraged unrestricted access to information on a global scale. Today's classrooms are equipped with a wealth of ICT tools, and almost all instructors have made significant progress in integrating digital technology to improve students' access to information and cooperative learning opportunities.

Conclusion and Recommendations

The government of every country desires to improve the quality of teaching geared towards the improvement in students' academic performance. This is the more reason why digital transformation is needed to be incorporated in our institutions of higher learning. This study examined the influence of digital transformation on effective teaching in public universities in South-West, Nigeria and the following conclusion was drawn based on the findings of the study: that improved accessibility and access, personalize learning approaches, visual reality, cloud-based learning opportunities, incorporating internet access into the school environment, security across digital devices and teaching digital citizenship were among the types of digital transformation required for effective teaching in public universities. Proactive in learning and flexible educational environment, unlimited access to learning materials, increased interactivity and real-world experience, the quality of education is improved, maximum savings in training and learning costs, improved students' engagement, stimulating innovation in teaching and learning, enrich collaboration of academic work and develop digital literacy were among the benefits of digital transformation in effective teaching in public universities. Based on these findings, the following recommendations were provided:

1. Appropriate involvement of government in the development of a digital transformation framework for learning in public higher institutions of learning. The government can equally work in collaboration with the private sector to ensure that a digital transformation framework that meets the needs of students enrolled in the public higher institutions of learning is developed. It should also be sustainable and affordable for students.
2. Government should foster simulation-based education by building a digital learning environment appropriate for effective teaching.
3. Teleconferencing should be deployed by lecturers to deliver many aspects of the curriculum to meet the needs of learners in regular classrooms and those in remote locations.

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