



PERCEIVED CHALLENGES TO AND STRATEGIES FOR THE IMPLEMENTATION OF DIGITAL LEARNING IN COLLEGES OF EDUCATION IN OGUN STATE

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Abstract

The study was to ascertain the perceived challenges to and strategies for the implementation of digital learning in colleges of education in Ogun State. Two specific purposes, two research questions and two null hypotheses guided the study. Descriptive survey research design was adopted in the study. A questionnaire titled: Digital Learning Implementation Challenges and Strategies Scale (DLICSS) was used for data collection. The instrument was validated by experts and was further subjected to internal consistency testing using Cronbach Alpha which yielded a reliability coefficient of 0.86. The population of the study comprised 37 Business Educators in four colleges of education in Ogun State namely: FCE, Abeokuta: (16: males 8, females 8); Sikiru Adetona College of Education Science and Technology (SACOTECH) Omu Ijebu (6: males 4, females 2); Awori District COE, Ijako Otta (7: males 3, females 4) and Yewa Central COE, Ayetoro (8: males 4, females 4). Data collected were analysed using simple percentage frequency table and percentages to find answers to the research questions, and t-test to test the null hypotheses. Findings revealed that inadequate of adequate digital skills; inadequate of adequate access to digital technology; poor internet connectivity; shortage of devices and unstable power supply are perceived challenges while adequate training; digital equity; providing high speed internet; provide support team and support students and staff to have enabling devices are perceived strategies for the implementation of digital curriculum. Findings revealed that gender had no significant influence in the way male and female business educators perceived the challenges of implementation of digital learning in colleges of education and there is no significant difference in the mean scores of urban and rural based business educators on the perceived strategies for the implementation of digital learning in colleges of education. It was recommended that agencies or bodies responsible for the development of colleges of education curriculum should take note of challenges such lack of adequate digital skills; lack of adequate access to digital technology; poor internet connectivity; lack of devices and unstable power supply while planning the digital learning curriculum.

Keywords: Perceived, Digital learning, Curriculum, Colleges of Education

Introduction

Digital technologies are great innovations that facilitate personalized learning and improve standards in education. The integration of digital technologies in schools is a rewarding transformation that has been witness in education system in recent times. Digital technologies have brought about a pedagogical shift from traditional face-to-face learning to digital learning in the entire education system (Haleema et al, 2022). As the name implies, digital learning is any instructional practice that effectively uses technology to strengthen teaching and learning experiences. Lynn et al (2022) defined digital learning as the use and sophistication of digital technologies for teaching and learning. The Georgia Governor's Office of Students' Achievement (2022) referred to digital Learning as learning facilitated by technology that gives students some element of control over time, place, path and/or pace. This definition suggest that with digital learning, there is no more restricted to the school period for study; learning is no more restricted within the walls of a classroom; learning is no more restricted methods used by the teacher and learning is personalized to suit individual learner. Mcilwhan (2018) chose to use a vague approach in defining digital learning by referring to it as the umbrella term for any learning that is conducted at least partly in, with or through digital technologies. This mean that digital learning covers blended learning, online learning, and computer stimulation learning among others.

Digital technologies are key tools to support learning in the classroom, school, home or other locations. For Semenovskikh et al (2021), digitalized learning do not merely makes the education process



more flexible, or more adjusted to the realities of the modern day, but also leads to the influx of competitive professionals in the changing digital world. In the study of Lin et al (2017) digital learning was found to have better positive effects on learning motivation and shows better positive effects on learning outcome than traditional teaching does. Digital learning was confirmed to have a significant positive influence of all the tested dispositions on the acceptance of digital learning in the study of Scheel et al (2022). In the assertion of Timotheou et al (2023), the influence of digital learning is more than just on students' performance; it affects several other school-related aspects and stakeholders, too. It enhance administrative and instructional activities. There is similarly some qualitative evidence that digital tools and resources enable teachers to do their job better in relation to teaching, assessment and their own on-the-job learning and development (Scottish Government, 2015). Teachers' efficiency can also be enhanced by digital tools and resources used to prepare for teaching.

Implementation of digital learning involves the activation of digital curriculum or policy plan so that digital learning objective can be achieved. The main players in the activation process are the teacher. For Obiloand and Sangoleye (2012) implementation is the act of translating the curriculum document into action in the classroom by the teacher. It involves teaching the curriculum content and generating feedbacks that will help in improving the curriculum. By teaching the curriculum, the teacher breaks the curriculum into syllabuses, schemes of work and lessons to be delivered to students. More so, it includes every external effort and assistance provided to the teacher to ensure that the curriculum delivered as planned at the classroom level. Implementation in a nutshell is the doing stage of the curriculum.

The Federal Ministry of Education (2023) noted that the implementation of the digital learning policy requires the linking together of key elements from the various sections of the policy into a cohesive and measurable action plan. A careful link of those elements at the planning stage of the digital curriculum increases the chances of a successful implementation process. As Msiza et al (2020) noted, successful digital learning implementation depends on the level of preparation and the measures that authorities put in place. However, the implementation of an individual educational route increases the efficiency of its completion, forms and develops not only students' subject skills, but also increases their motivation, improves their computer literacy, and promotes the development of educational independence (Khairova and Gabdullina, 2020).

The implementation of digital learning is often faced by many challenges. For instance, teachers' attitudes; positive or negative towards digital technologies is a strong predictor of their acceptance of and engagement with digital learning (Blundell et al, 2016). Teacher perception of digital learning may conflict with teachers' understanding of good practice and it could influence the implementation of digital learning. On its part, the Federal Ministry of Education (2023) identifies some of the challenges to digital learning implementation to include: Lack of adequate digital skills on the part of teachers and learners; unstable power supply; exorbitant cost of data; poor internet connectivity and lack of devices. For Msiza et al (2020), challenges revolved around the theft of devices, non-academic material being accessed by learners. Lynn et al (2022) categorise these challenges in terms of access, motivation, skills and competences, and evidence of outcomes. The challenges to the use of new technologies in teaching and learning are identified by Johnson et al (2016) to be external (access to the technology, training and technical support) and personal challenges (teachers and student attitudes and beliefs, resistance to technology and lack of skills).

Datta and Robinson (2020) identified digital divides as challenging to the success of digital learning. The divide as they noted is linked to social norms, poverty, gender, limited skills and literacy and availability of relevant content. They is a divide between those who can afford digital tools and those who cannot. This mean that those who cannot afford digital tools will be deprived of learning. There is also a divide in the line of gender. The male child may be more privilege to digital technologies and use them more than the girl. As Venable (2020) captured it, half (50%) of all male participants were enrolled in computer science, engineering, and related majors, compared to only 12% of women. Digital divide also exist in terms of location. Some places especially the urban have more access to digital learning than the rural areas. In this vein, Lynn et al (2022) maintained that due to lower population densities, rural and remote geographic areas are less likely to have access to the same number or range of digital education providers as those in urban areas.

In other to combat those challenges to digital learning, it is essential that strategies for the implementation of digital learning in place. For Awidi (2013), adopting an appropriate strategies that suits both lecturers and students will require an effective combination of available resources and communication. By way of buttress, Msiza et al (2020) elucidated that preparation for effective implementation of digital learning will require the distribution of devices, and teacher training and support from ICT experts. Soden



(2019) suggested training and motivation as strategies for the implementation of digital learning. Others are fellow-ups, activate technical support team, provision of strong internet coverage and support students and staff to have enabling devices. It is of the interest of this study to investigate which of these strategies are perceived by Business Educators in colleges of education to be more effective.

Statement of the Problem

Digital learning has not been implemented in most colleges of education particularly, in Ogun State. The implementation has been challenged by many factors. Many individuals and institutions have come out with what they perceived to be the challenges to the implementation of digital learning. For instance, the Federal Ministry of Education (2023) attributed the challenges to include lack of adequate digital skills on the part of teachers and learners; unstable power supply; exorbitant cost of data; poor internet connectivity and lack of devices. The teachers who are responsible for the implementation of programmes are in the best position to suggest the challenges they face with digital learning. Unfortunately, the perception of teachers has been neglected. In addition, the teachers are in best position to suggest certain actions to be taken to make digital learning effective. The teacher perceived strategies in this regard has equally been neglected. It became imperative therefore, to conduct a study in this direction. In a question form, the problem of the study can be expressed thus, what are the perceived challenge to and strategies for the implementation of digital learning in colleges of education in Ogun State?

Research Questions

The following research questions were formulated for the study:

1. What are the perceived challenges to the implementation of digital learning in colleges of education?
2. What are perceived strategies for the implementation of digital learning in colleges of education?

Hypotheses

The following null hypotheses guided the study and were tested at 0.05 level of significance:

1. There is no significant difference in the mean scores of male and female business educators on the perceived challenges to the implementation of digital learning in colleges of education.
2. There is no significant difference in the mean scores of urban and rural based business educators on the perceived strategies for the implementation of digital learning in colleges of education.

Methodology

Descriptive survey research design was adopted in the study. A questionnaire titled: Digital Learning Implementation Challenges and Strategies Scale (DLICSS) was used for data collection. The instrument was validated by experts and was further subjected to internal consistency testing using Cronbach Alpha which yielded a reliability coefficient of 0.86. The population of the study comprised 37 Business Educators in four colleges of education in Ogun State namely: FCE, Abeokuta: (16: males 8, females 8); *Sikiru Adetona College of Education Science and Technology (SACOTECH) Omu Ijebu* (6: males 4, females 2); Awori District COE, Ijako Otta (7: males 3, females 4) and Yewa Central COE, Ayetoro (8 males 4, females 4). Data collected were analysed using simple frequency and percentages to find answers to the research questions, and t-test to test the null hypotheses. For any item to be perceived as a challenge to or a strategy for the implementation of digital learning, the number of yes to the item must not be at least 50%. Similarly, for any of the null hypothesis to be accepted, the calculated t-value must be less than or equal to the critical t-value otherwise rejected.

Results

Research Question one: What are the perceived challenges to the implementation of digital learning in colleges of education?

Table 1: Perceived Challenges to the Implementation of Digital Learning in Colleges of Education

S/N	Challenges to Digital Learning Implementation	N0. of YES	%	N0. of NO	%	Decision
1	Funding	17	45.94	20	54.06	Not a challenge
2	Attitude towards embracing modern technologies	16	43.24	21	56.76	Not a challenge
3	Lack of devices	26	70.27	11	29.73	*Challenge
4	Lack of adequate digital skills	34	91.89	3	08.11	*Challenge
5	Lack of adequate access to digital technology	30	81.08	7	18.92	*Challenge
6	Lack of support team	25	67.56	12	32.44	*Challenge
7	Unstable power supply	20	54.05	17	45.95	*Challenge



8	Exorbitant cost of data	15	40.54	22	59.46	Not a challenge
9	Poor internet connectivity	26	70.27	11	29.73	*Challenge
10	Teachers and student resistance to change	18	48.64	19	51.36	Not a challenge
Total		227	61.40	143	38.60	

Six items were agreed by the respondents to be challenges to the implication of digital learning as follows: Lack of adequate digital skills 91.89%; Lack of adequate access to digital technology 81.08%; Poor internet connectivity 70.27%, Lack of devices 70.27% and Unstable power supply 54.05.

Research Question two: What are perceived strategies for the implementation of digital learning in colleges of education?

Table 2: Perceived Strategies for the Implementation of Digital Learning in Colleges of Education

S/N	Strategies for Digital Learning Implementation	NO. of YES	%	NO. of NO	%	Decision
11	Adequate training	32	86.48	5	13.52	*Agree Strategy
12	Evaluating the engagement of the learner	16	43.24	21	70.28	Not a Strategy
13	Digital equity	30	81.08	7	18.92	*Agree Strategy
14	Provide clear expectations of the digital policy	17	45.94	20	54.06	Not a Strategy
15	Support students and staff to have enabling devices	23	62.16	14	37.84	*Agree Strategy
16	Provide support team	25	67.56	12	32.44	*Agree Strategy
17	Constant follow up of digital learning	13	35.14	24	64.86	Not a Strategy
18	Motivation for teachers and students to adopt digital learning	17	45.94	20	54.06	Not a Strategy
19	Simplify digital learning contents	15	40.54	22	59.46	Not a Strategy
20	Providing high speed internet	28	75.67	9	83.79	*Agree Strategy
Total		216	58.38	154	41.62	

In Table 2 five items were agreed to be strategies for the implementation of digital learning as follow: Adequate training 86.48%; Digital equity 81.08%; Providing high speed internet 75.67%; Provide support team 67.56% and Support students and staff to have enabling devices 62.16%

Hypotheses

Hypothesis one: There is no significant difference in the mean scores of male and female business educators on the perceived challenges to the implementation of digital learning in colleges of education.

Table 3: t-test analysis of male and female business educators on the perceived challenges to the implementation of digital learning

Gender	N	X̄	Sd	t-cal	t-Crit	Decision
Males	19	11.4	3.30	0.08	2.02	Accept
Females	18	11.3	3.62			

❖ Df =35

Table 3 revealed that the calculated-t 0.08 was less than the critical-t 2.02. The null hypothesis was retained, indicating that there is no significant difference in the mean scores of male and female business educators on the perceived challenges to the implementation of digital learning in colleges of education.

Hypothesis two: There is no significant difference in the mean scores of urban and rural based business educators on the perceived strategies for the implementation of digital learning in colleges of education.



Table 4: t-test analysis of urban and rural based business educators on the perceived strategies for the implementation of digital learning

Location	N	X	Sd	t-cal	t-Crit	Decision
Urban	22	10.9	4.22	0.16	2.02	Accept
Rural	15	10.7	3.30			

❖ Df =35

In table 4, the calculated-t was 0.16. Because the value is less than 2.02, it was accepted that there is no significant difference in the mean scores of urban and rural based business educators on the perceived strategies for the implementation of digital learning in colleges of education.

Discussion

Six items were agreed to be challenges to the implication of digital learning as follows: Lack of adequate digital skills 91.89%; lack of adequate access to digital technology 81.08%; Poor internet connectivity 70.27%, Lack of devices 70.27% and unstable power supply 54.05%. The finding agrees with Ertmer, et al (2012) that the most commonly cited reason for lack of technology implementation in the classroom is inadequate professional development and training. Modern technologies require new skills to function effectively. In a situation where teachers and students lack the basic training to function with the new technologies, effective teaching and learning cannot be achieved. Evidence increasingly shows that digital learning is more effective when embedded in a clear pedagogical framework supporting teachers. In the assertion of Brossard et al (2021), it raises new challenges regarding the role and required skills needed for teachers to effectively deploy technology. Their willingness to improve skills will eventually increase educator-specific digital competences and makes the use of digital tool in teaching more effective (Semenovskikh et al, 2021).

Lack of access to digital technology is another reason teacher students may not effectively participate in digital learning. This is because not every student has the devices such as computer, laptop, smartphone or Chromebook to access online learning. A careful observation by Bank (2020) indicated that the rise in the use of virtual learning has added new items to students' school supply lists of which many are expensive.

Some students are in locations with poor internet connectivity. This also makes it difficult to access online learning. In this regard, Aljumaily (2020) noted that online teaching and learning is challenged by the lack of Internet service in many areas and the difficulty to deliver decent service to all teachers and students. It is even difficult to have a support team in some areas to quickly fix a faulting device thereby making digital learning difficult. Digital devices are powered by electricity. The epileptic power supply also disturbs the efficiency of digital learning. All these perceived challenges are very critical to the effective implementation of digital learning and need to be fixed.

Testing of hypothesis in regard to the challenges to the implementation of digital learning in Table 3 revealed that there is no significant difference in the mean scores of male and female business educators on the perceived challenges to the implementation of digital learning in colleges of education. This means that the educators have common challenges which affect them all in an equal measure. The finding is similar with Ja'ashan (2020) who found male and female teachers strongly agree that they face challenges when they use digital learning during their teaching of English. Similarly, Mia (2022) founds no gap exists between the responses of male and female learners on digital learning challenges.

In Table 2 five items were agreed to be strategies for the implementation of digital learning as follows: Adequate training 86.48%; Digital equity 81.08%; Providing high speed internet 75.67%; Provide support team 67.56% and Support students and staff to have enabling devices 62.16%. Teachers need to have a wide range of competencies in the use of digital technologies in order to meet the vast learners' learning experiences. Providing adequate training and support that both school teachers and students need to successfully integrate technologies into their work is likely to increase the success of any digital learning initiative (Greaves et al in Best and Dunlap (2012). Similarly, successful digital learning initiatives include teachers in the development of implementation strategy, demonstrate to teachers how technologies help them meet their curricular goals, and provide continuous training on both technical and pedagogical best practices related to any digital learning initiative (UNESCO in Best and Dunlap (2012). Teachers with good training in digital learning tools can competently use such tools to teach. Training is essential for teachers' effectiveness and it should be taken seriously.

Digital equity means that every student should have a device that allows access to digital learning so that they can comfortably fit in and participate. It is obvious that socio-economic stratification exists, and



students from rich homes can comfortably afford laptops, sophisticated smartphones and other devices that can be used to access online learning, while those from poor background may not. Equity must be maintained otherwise technological based learning will be meant for a group of students who can afford it. Snelling and Fingal (2020) who clearly understood this scenario noted that equity is the biggest challenge in preparing for online learning and it is the first thing to think about if all students are expected to participate. They further suggested that a survey of teachers and students should be done ahead of time to figure out who will need devices and bandwidth and adequate provision made on time before kick-off. By implication, the school must ensure that every student have equal access so that no one of them is cut off from the learning programme. In a situation where the school cannot rent to the students the needed devices, the learning should be channelled through common devices the students use to access learning such as smartphones.

Providing high speed internet is another perceived strategy for the effective implementation of digital learning. The internet is the most powerful tool in digital learning, especially in online learning. It provide connectivity of various systems so that information can be shared in real time. Without the internet it is difficult to send and receive information, be it lecture material or whatsoever. It is therefore, a strategy to provide not just internet services but a strong network coverage to students at various locations. This will allows students and teachers to download, manipulate, and create multimedia projects; communicate with others around the world; participate in online courses and assessment; and access abundant open education resources (Best and Dunlap, 2012).

Provide a technical support team is another perceived strategy. A technical support team could comprise the technologist and workshop assistants or attendants. A technical support team provide help to students and staff to quickly resolve technical issues that may arise during virtual teaching and learning. The finding is in line with Zalat (2021) that providing technical support will reduce issues that prevent effective digital learning participation. Thus, having a functional technical team that will timely respond to and attend to callers is generally believed to increase the chances of success in the implementation of digital learning.

Supporting students and staff to have enabling devices is a strategy that will increase access to digital learning. The finding relates with Snelling and Fingal (2020) who found that, most students and staff do not participate in digital learning because they do not have the necessary devices needed for such learning. Therefore, one way to increase students' participation is to support them to have required devices, particularly, in colleges of education in Ogun State.

Conclusion

Digital learning is perceived by business educators to be challenged by Lack of adequate digital skills 91.89%; lack of adequate access to digital technology 81.08%; Poor internet connectivity 70.27%, Lack of devices 70.27% and unstable power supply 54.05%. These challenges are not gender sensitive. They affect both males and females. Secondly, the strategies for the implementation of digital learning are adequate training 86.48%; Digital equity 81.08%; Providing high speed internet 75.67%; Provide support team 67.56% and Support students and staff to have enabling devices 62.16%. These strategies can be applied urban and rural areas.

Recommendation

Based on the findings of the study, it was recommended that:

1. Agencies or bodies responsible for the development colleges of education curriculum should take note of challenges such lack of adequate digital skills; lack of adequate access to digital technology; poor internet connectivity; lack of devices and unstable power supply while planning the digital learning curriculum.
2. School administration should consider such strategies as adequate training; digital equity; providing high speed internet; provide support team and support students and staff to have enabling devices for the successful implementation of digital learning.

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