

Digital Civilization and Teachers' Instructional Practices in Lagos State Secondary Schools

¹Oshionebo, Esther Emike **Abstract**

& ²Owolabi, Olawale

Abiodun

^{1&2}Department of Educational Management, Faculty of Education, University of Lagos, Akoka

Article DOI:

10.48028/iiprds/esjprcd.v12.i1.07

Keywords:

Digital Civilization, Education, Technology, Teaching-learning, ICT Policy

Corresponding Author:

Oshionebo, Esther Emike

As the world rapidly evolves, modern technologies permeate homes and classrooms, precipitating swift changes in society. We currently inhabit a digital age wherein technology exerts influence across nearly every aspect of our daily lives. Despite this pervasive influence, many classroom teachers struggle to effectively integrate technology into their regular instructional activities. The purpose of this study is to assess the relationship between digital civilization and teachers' instructional practices. Employing a descriptive survey design, a sample of 300 teachers was randomly selected from various school education districts in Lagos State. Three research questions and one research hypothesis were formulated to ensure the study's objectives were met. To gather primary data for investigation, researchers developed a questionnaire named Digital Civilization and Teachers' Instructional Practices (DCTIP). Field data collected for the research questions were analyzed using simple percentages, means, and standard deviation, while Pearson product-moment correlation inferential statistics were utilized to test the study hypothesis. Results indicated a significant relationship between the use of technology and teachers' instructional practices. Consequently, it was concluded that full integration of ICT tools and facilities into the educational system is imperative due to the rapid growth of digital civilization. Additionally, teachers should leverage technology and technical programs that prioritize personalization, equality, and efficiency to facilitate successful pupil learning. Moreover, it was emphasized that ICT policies should not merely be outlined but adequately implemented to ensure efficacy.

Background to the Study

Education is described as the means through which the goals and objectives of a nation can be achieved. Over the years, education has been fulfilling its purpose by bringing new ideas, discoveries, innovation, and development in various areas as well as transforming the national economy by developing human capital in various capacities. UNESCO (2000) defines education as a comprehensive process aimed at nurturing human capabilities and behaviors. It encompasses structured and continuous guidance in learning, tailored to impart a blend of knowledge, skills, and moral understanding essential for navigating various facets of life. Education serves to shape individuals holistically, empowering them to tackle life's challenges effectively. Furthermore, it serves as a catalyst for comprehending one's surroundings and, when needed, facilitating positive transformations within the world.

Every day brings forth new lifestyles and efficient methods for accomplishing tasks. Knowledge and technological breakthroughs significantly influence various domains including healthcare, finance, governance, and education. Technological advancements have spurred the proliferation of education, fostering ongoing research and development efforts to introduce innovative solutions that enhance the accessibility and enjoyment of learning. Despite the evolving global landscape, the educational sector, particularly the secondary school system in Nigeria, lags behind in experiencing the necessary development commensurate with its longstanding impact.

No doubt, the covid-19 pandemic revealed the weakness in the Nigerian educational system which led to the shutting down of schools and other vital sectors in order to contain the spread of the virus. However, education in some other countries was active during the covid-19 pandemic due to their development and exposure. Technology existed in Nigeria before the pre-covid-19 era but a lack of rapid development in the educational sector made education less developed during the Covid-19 era.

Considering the significance of digital technologies, many nations have formulated comprehensive educational policies within their systems to prioritize the integration of digital tools and resources. Digital technology goes beyond pictures and light. However, it can be described as the combination of data, technology and ways of working that help individuals and organizations automate, connect, innovate, and make better decisions. Digital technology helps organizations better meet the needs and enhance the experiences of customers and employees. So, in the educational system digital is perceived as the combination of educational data, educational technology, and different ways of ensuring successful teaching-learning processes and also enables students, teachers and the school to connect outside the four walls of the classroom as well as making informed decisions. Data involved in the educational sectors includes names of students, class, grades, exam scores, gender, the total number of students etc.

In essence, civilization within any complex society is defined by urbanization, social hierarchy, symbolic communication methods (often through writing systems), and a perceived detachment from, along with control over, the natural world. Similarly, digital education

entails the innovative utilization of digital tools and technologies within the teaching and learning process. This approach can enhance student engagement, refine lesson planning, and facilitate personalized learning experiences within the classroom. Youssef, Fatiha, and Abdelkarim (2021) argue that digital technologies have fundamentally transformed both society and the economy, leading to a modernized society and an increasingly digitized economy. It is important to recognize that educational institutions are integral components of this evolving societal framework.

According to Praveen and Vasimalairaja (2019), mobile learning refers to the capability to access educational content on individual handheld devices like smartphones and mobile phones. This allows learners the flexibility to engage with learning materials at their convenience, regardless of time or location. The term "educational content" encompasses digital learning resources accessible on various electronic devices. Mobile learning represents a blend of Information and Communication Technologies (ICT), offering education opportunities anytime and anywhere. Gikas and Grant (2013) observed that students utilize mobile computing devices to interact with peers and share knowledge and skills. This interaction includes activities such as recording videos or voice notes for uploading onto course platforms, facilitating discussions within the entire class. Their research highlighted that student effectively communicated and collaborated on course content using mobile devices through text messaging and email.

Students utilize mobile devices for accessing educational materials, sharing content, and creating resources both inside and outside the classroom within the realm of mobile learning. Intel's publication on technology and education highlights that successful integration of technology in classrooms fosters a lifelong passion for learning among students. Moreover, educators constantly strive to personalize learning experiences for students, leveraging technology to provide access to real-time student data, diverse learning materials, and applications, thereby empowering students to reach new academic heights. Digital tools for formative and summative assessments, along with blended learning environments, offer educators innovative methods to enhance teaching and learning in the classroom. In addition, according to Irele (2021), ICT has been seamlessly integrated into the educational system, extending learning beyond traditional boundaries. The adoption of modern technology has streamlined the transfer of knowledge, surpassing the limitations posed by outdated instructional methods.

In the national implementation guidelines for ICT in education in Nigeria, Information and Communication Technology (ICT) is defined as encompassing the art and applied sciences dealing with data and information. This broad definition includes tools, methods, practices, processes, concepts, principles, and sciences utilized in various information activities, such as gathering, processing, presentation, security, exchange, management, organization, storage, and retrieval of data and information. It incorporates computational machinery like computers, hardware, software, and firmware (NIGICTIE, 2019). Information Technology (IT) policy, as outlined by Adomi & Igun (2008), constitutes a formal declaration specifying the aims, goals, principles, and strategies guiding the development, use, and application of

ICT. The overarching objective of such policies is to steer nations towards deploying, harnessing, and leveraging ICTs for socioeconomic advancement at local, national, and sub-regional levels, while also ensuring citizen access to affordable telecommunication, broadcasting, computing, and Internet services. This necessitates concrete actions such as establishing robust regulatory frameworks and enhancing human resource capacity (UNECA, 2009). The formulation of a formal national ICT policy holds significance as it signals the government's commitment to forward-thinking approaches and its readiness to promote ICT usage within society.

The objectives of ICT in education, as outlined in the educational policy on ICT, include:

1. Facilitating the teaching and learning processes.
2. Promoting problem-solving, critical thinking, and innovative skills.
3. Fostering lifelong learning and advancing knowledge.
4. Enhancing various teaching and learning strategies to meet diverse population needs.
5. Supporting research and development.
6. Facilitating effective and efficient education administration.
7. Enhancing universal access to information.
8. Expanding access to education and instructional options through anytime, anywhere, any-place, and any-path learning.
9. Promoting the commercialization of ICT in education.
10. Developing and supporting technical infrastructure to maximize digital creativity, sharing, and innovation.

Traditionally, formal education in Nigeria is basically taking place within the four walls of the classrooms which seems not to be productive in the modern age. Learners need to explore new knowledge and also widen their horizons for better productivity. Students learning is significantly influenced by the instructional practices of their teachers, and effective instruction requires that teachers have a wide range of knowledge and be able to effectively connect students with the necessary information and learning resources. According to Jones and Moreland (2004), students learn best when their teachers possess a diverse set of skills and abilities. These include things like having a thorough grasp of the curriculum's goals and objectives, using a variety of pedagogical techniques, giving constructive criticism, and having solid subject-matter knowledge.

To ensure and enhance students' independence and strategic learning, teachers employ a diverse array of instructional strategies. When students adeptly select and apply these strategies to accomplish tasks, they become effective learning methodologies. Instructional strategies can serve as motivators for students, aiding their focus and aiding in information retention. Among the plethora of efficient teaching techniques, active learning stands out for its ability to encourage students to actively participate in their own learning process. Active learning, as a prominent teaching strategy, empowers students to fully engage in their educational journey. Integrating technology with active learning further enhances student engagement, collaboration, and productivity in the classroom. Through the incorporation of technology into daily class activities, assignments, and projects, students not only acquire the

skills necessary for innovation but also prepare themselves for higher education and future employment opportunities. In the field of education, distance learning is steadily becoming the standard. To create the most interactive learning environment for students, school administrators, parents, and teachers must employ effective teaching techniques, adopt appropriate mindsets, and provide necessary equipment.

As highlighted by Irele (2021), the COVID-19 pandemic and global circumstances necessitate a transition from traditional education models to ones that incorporate digital technologies across all educational facets. This study aims to explore the transformative role of digital technologies in education, specifically focusing on Nigeria's educational landscape. By emphasizing the importance of digital education, the research seeks to advocate for the integration of advanced technological tools and strategies into the educational sector. The ultimate goal is to address existing challenges, modernize the system, and enhance its overall effectiveness.

Statement of the Problem

According to Jacques de Lima Ferreira (2020), Since the beginning of formal education in Nigeria, education has been governed by a traditional idea based on the replication of information, without considering the student as the primary learning process but this old teaching approach is still used in some classrooms in colleges and high schools. To adapt to evolving educational paradigms, numerous teaching methods integrate digital technologies as integral tools for learning. Educational institutions are actively integrating digital technologies into their curricula, teaching methodologies, and continuing education programs to enhance the quality of instruction. The pivotal role of these technologies in facilitating teaching processes became evident during the global COVID-19 pandemic, emphasising their significance in modern education. It is observed that not all teachers are capable of incorporating technology into their regular classroom activities. It is obvious that incorporating technology into the classroom is now required in order for students in this part of the world to stay up with their peers worldwide.

Purpose of the Study

This study is primarily aimed at investigating the correlation between digital civilization and teacher instructional practices in secondary schools within Education District 2 of Lagos State, Nigeria. Accordingly, the study specifically seeks to explore the following:

1. To find out the level of implementation of the ICT policy in Nigeria's educational system
2. To examine the use of technology for effective teacher instructional practices
3. To access the instructional practices adopted by school teachers

Research Questions

In order to guide this study, the following research questions were raised

1. What effect does the use of technology have on teacher instructional practices?
2. What is the level of ICT policy implementation in Nigeria's educational system?
3. What are the instructional practices adopted by school teachers?

Research Hypothesis

One hypothesis guided this research

Ho1: There is no significant relationship between the use of technology and teacher instructional practices

Methodology

This study investigated and assessed how teacher instructional methods in senior secondary schools in Lagos State is related to the digital civilization. All secondary school teachers in Lagos State make up the study's population. For this study, a descriptive survey design was employed. A sample of 300 teachers was selected through a simple random selection method from various schools within Education District 1 in Lagos State, Nigeria. To ensure the achievement of the study's objectives, three research questions and one research hypothesis were formulated. The researchers developed a questionnaire named Digital Civilization and Teachers Instructional Practices (DCTIP) to collect primary data for the investigation. This questionnaire was created online, and responses were collected electronically via a Microsoft form under close supervision. Prior to its use, the instrument underwent face and content validity testing by two experts in the fields of Educational Management and Measurements and Evaluation from the University of Lagos. Furthermore, a pilot test involving 20 teachers who were not part of the sample was conducted to confirm the validity of the instrument. The reliability of the instrument was assessed using Cronbach's alpha, resulting in a reliability coefficient of 0.74. Technology facilitated the rapid collection of results after respondents self-administered the survey. Field data collected for the research questions were analysed using simple percentages, means, and standard deviation. The study hypothesis was tested using Pearson Product-Moment Correlation inferential statistics.

Ethics-Related Matters

To prevent skewed results, the researchers did not offer anything to the respondents. The research does not include the names or other identifying information of the respondents. The information and data that have been gathered are private. After analysing the collected data, recordings were deleted.

Method of Data Analysis

Table 1: What effect does the use of technology has on teacher instructional practices?

S/N	What effect does the use of technology have on teacher instructional practices?	SA	%	A	%	D	%	SD	%
1	Mobile learning help teachers more conveniently when delivering their instructions	188	62.7	21	7.0	91	30.3	-	-
2	E-lesson make teachers more efficient in instructional delivery	126	42.0	75	25.0	99	33.0	-	-
3	Technology create teacher-learning communities where teachers can find lessons, activities, and materials to innovate and supplement their current lessons	124	41.3	83	27.7	88	29.3	5	1.7
4	Technology allows teachers to have a different instructional model that can help alleviate the problem of class size.	151	50.3	17	5.7	94	31.3	38	12.7
5	Technology provides teachers with innovative methods to enhance their lessons, benefiting both educators and students.	191	63.7	22	7.3	55	17.7	34	11.3
6	With the aid of digital civilization, learning processes become easily	176	58.7	121	40.3	3	1.0	-	-

Table 1 shows that item 1 explains that 188 (62.7) strongly agreed that mobile learning will help teacher more convenient when delivering their instructions, 21(7.0) % agrees, 91 (30.3) disagrees. Item 2 shows that 126 (42.0%) strongly agree that e-lesson makes teachers more efficient in instructional delivery, 75 (25.0%) agree, 99 (33.0) disagreed. In item 3, 124 respondents (41.3%) strongly agreed that technology fosters teacher-learning communities, enabling educators to access lessons, activities, and materials for enhancing and complementing their current instructional practices. Item 4 elucidated that 151 respondents (50.3%) strongly agreed that technology enables teachers to adopt alternative instructional models, potentially mitigating challenges associated with class size while 17(5.7%) of the respondents agreed, 94 (31.3%) disagreed, leaving the 38 (12.7%) respondents strongly disagree to this. Item 6 shows that 176 (58.7%) of the respondents strongly agreed that with the aid of digital civilization, learning processes becomes seamless while 121 (40.3%) respondents agreed, 3(1.0%) disagree.

Table 2: Level of ICT policy implementation in the school system?

What is the level of ICT policy implementation in Nigeria's educational system?									
1	There are ICT policies in the national policy on education	157	52.3	75	25	65	21.7	3	1
2	Schools are well equipped with ICT facilities	69	23	118	39.3	113	37.7		
3	Schools are complying with the ICT policy	119	39.7	15	5	166	55.3		
4	Class time is too limited to use ICT tools during teaching-learning process.	78	26	140	46.7	82	27.3		
5	Students will be able to learn when mobile and remote learning are adopted	113	37.7	89	29.7	98	32.7		
6	The internet facilities in our school enable us to convey instructions to the student	3	1	55	18.3	42	14	200	66.7

Table 2 presents respondents' views on various aspects of ICT policies and facilities in education. For Item 7, 157 respondents (52.3%) strongly agreed that ICT policies exist in the national education policy, while 75 (25%) agreed. However, 65 (21.7%) disagreed, and only 3 (1%) strongly disagreed. Regarding Item 8, 69 respondents (23%) strongly agreed that schools are well equipped with ICT facilities, with an additional 118 (39.3%) in agreement. However, 113 (37.7%) disagreed with this statement. Item 9 states that 119 respondents (39.7%) strongly agreed that schools comply with ICT policies, while 15 (5%) agreed. On the contrary, 166 (55.3%) disagreed. Item 10 discloses that 78 respondents (26%) strongly agreed that class time limitations impede the use of ICT tools during teaching and learning processes. Additionally, 140 (46.7%) agreed, while 82 (27.3%) disagreed. In Item 11, 113 respondents (37.7%) strongly agreed that students benefit from mobile and remote learning adoption, while 89 (29.7%) agreed. However, 98 (32.7%) disagreed. Item 12 explains that only 3 respondents (1%) strongly agreed that internet facilities in their schools enable effective instruction delivery to students. Meanwhile, 55 (18.3%) agreed, 42 (14%) disagreed, and the majority, 200 (66.7%), strongly disagreed.

Table 3: What are the instructional practices adopted by school teachers?

S/N	What are the instructional practices adopted by school teacher								
1	Assigning use of internet related assignment to student help them learn more outside the classroom discussion	142	47.3	122	40.7	36	12		
2	Establishing interest groups which enables student to individual/group projects enables them to understand properly.	163	54.3	47	15.7	81	21.7	9	3
3	Face to face classroom interaction is the best teaching method	199	66.3	18	6	78	26	5	1.7
4	Allowing student to leave the classroom to work in another location such as lab, library exposes them to more understanding of the student matter	72	24	141	47	44	14.7	43	14.3
5	Questioning teaching methods enables student retain what they've learnt	210	70	51	17	39	13		
6	Presentation method enables students learn ways of interacting which makes it an appropriate method	203	67.7	89	29.7	8	2.7		

Table 3 indicates that item 13 shows the responses of 142 (47.3%), strongly agreeing that assigning use of internet related assignment to student help them learn more outside the classroom discussion while 122 (40.7%) agree and 36 (12%) strongly disagreed. Item 14 explains that 163 (54,3%) of the population strongly agreed that establishing interest groups which enables student to individual/group projects enables them to understand properly and also encourage team work, 47 (15.7%) of the respondents agreed, 81 (21.7%) disagreed while 9 (3%) strongly disagreed. Item 15 explain that 199 (66.3%) of the respondents strongly agreed that face to face classroom interaction is the best teaching strategies while 18(6%) agreed, 78 (26%) of the respondents disagreed with this while 5 (1.7%) strongly disagreed. Item 16 shows that 72 (24%) of the respondents strongly agreed that allowing student to leave the classroom to work in another location such as lab, library exposes them to more understanding of the subject matter while 141 (47%) agreed, 44 (14.7%) disagreed while 43 (14.3%) of the population strongly disagreed. Item 17 shows that 210 (70%) of the respondents strongly agreed that questioning teaching methods enables student retain what they've learnt while 51 (17%) agreed, 39 (13%) disagreed. Item 18 shows that 203 (67.7%) of

the respondents strongly agreed that presentation method enables students learn ways of interacting which makes it an appropriate method while 87 (29.7%) agreed, 8 (2.7%) disagreed.

Hypotheses one: There is no significant relationship between the use of technology and teacher instructional practices

Table 4: Use of Technology and Teachers' Instructional Practices

Variables	Mean	SD	N	Df	r	N	Decision
Use of technology	3.1344	0.4758					
			300	298	0.284	0.113	Reject Ho ₁
Teacher instructional practices	3.327	0.59139					

($p < 0.05$)

Table 4 shows that there was a significant relationship between use of technology and teachers' instructional practices ($r = 0.298$; $df = 298$; $p < 0.05$). Thus, the null hypothesis which states that there is no significant relationship exists between use of technology and teachers' instructional practices was rejected. This implies that a significant relationship existed between use of technology and teachers' instructional practices.

Discussion

The findings of hypothesis one indicates a notable correlation between the integration of technology and teachers' instructional methodologies. This finding echoes the research conducted by Raja and Nagasubramani (2018), who highlighted that the adoption of modern tools and technology enhances student learning experiences and facilitates interaction. When technology is integrated into learning environments, students perceive it as more engaging and discover a multitude of fascinating avenues for exploration. Knowledge dissemination becomes not only simple but also practical and efficient. Moreover, the findings align with Spears' (2012) assertion that effective integration of technology in classrooms positively impacts students' attention, relevance, confidence, and overall satisfaction. It emphasizes the importance for educators to adopt instructional practices that not only adhere to best practices but also cater to students' needs and interests, thus fostering motivation and enthusiasm for learning. Brink (2011) also highlights the significance of mobile learning, demonstrating how teachers can utilize short messages to communicate assignments, notices, or information to students, further enhancing the learning process.

Conclusion and Recommendation

The primary aim of this research was to explore the transformative impact of digital technologies on the educational system in Nigeria. Undoubtedly, the landscape of education

has undergone significant changes due to the rapid advancement of technology, ushering in a new era of digital civilization. This shift has redefined the essence of education, prompting the need for innovative educational strategies that seamlessly integrate technology into students' daily learning experiences.

In today's digital age, teachers play a pivotal role in preparing students for a lifetime of learning. This necessitates the adoption of pedagogical approaches that leverage technology to cultivate essential skills and competencies relevant to the modern world. It is widely acknowledged that a comprehensive education serves as a cornerstone for individual success, equipping students with the tools and knowledge needed to navigate an ever-evolving society. Education not only imparts academic knowledge but also ensures critical thinking, adaptability, and creativity. By embracing education, individuals can broaden their horizons, embrace new ideas, and unlock greater opportunities for personal and societal advancement. In essence, education serves as a catalyst for empowerment, enabling individuals to realize their full potential and contribute meaningfully to the progress of society.

Educational institutions have long viewed it as ideal to use the internet and technological techniques to improve education by making it more relevant to daily life. Future citizens, who are currently our pupils, will live in the electronic media era. ICT can increase student capacity for creativity and problem-solving. The establishment of a formal national ICT policy holds significant importance, serving as a clear indication of the government's commitment to promoting the use of ICT in society. However, governments must go beyond mere policy formulation and actively implement these policies, setting a precedent by integrating ICT into their own operations and services. Without a cohesive policy framework, the emergence or perpetuation of inefficient infrastructure and resource wastage is likely, even though ICT evolution will continue to progress regardless.

Nigeria, particularly in the wake of COVID-19, must adapt to the "new normal" that emphasizes digitalization in teaching and learning. This paradigm shift necessitates the adoption of compulsory digital learning methods, marking a departure from traditional educational practices. Nigeria must expedite the digitalization of its educational system to align with this new approach to teaching and learning. Teachers play a critical role in this digital transformation, utilizing technology and technical programs to personalize learning experiences, promote equality, and enhance efficiency. By standardizing and modifying learning environments, teachers can prepare students to become the next generation of innovators, both within and beyond the confines of the classroom.

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