Original Research Article

Migration to Digital Education during COVID-19 Pandemic Era in Public Higher Institutions in Abia State, Nigeria

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Abstract: This study was carried out to investigate the readiness of public higher institutions in Abia to migrate to digital education in the covid-19 pandemic era. Covid-19 pandemic era is simply a period everything and sectors of the economy was paralyzed and all activities were halted. Aimed of this study was to determine the extent to which public higher institutions in Abia to migrate to digital education in the covid-19 pandemic era. This objectives was to examined how accessibility of digital learning, and equal education opportunities. Two research questions were raised and answered for the study. Two research hypotheses were formulated and tested at .05 level of significance. Descriptive survey research design was adopted while structured questionnaire were used for data collection. The population of the study comprises 355 Students in six higher institutions in Abia State for 2022/2023 academic session in all the institution accredited by regulatory body, in Abia State. Specifically, the population consist of 71 students from State University (ABSU) Uturu, 62 students from Michael Okpara University of Agriculture (MOUAU), Umudike, 46 students from Abia State Polytechnic Aba, 53 from National Institutes for Nigerian languages (NINLAN), Abia, 47 students from College of Health and Management Technology, Aba and 76 students from Abia State College of Education Technical Arochkwu. The sample sizes for the higher institution were 116 respondents' determined using Taro Yamane formula. Stratified random sampling was adopted while simple random sampling was used to selecting respondents from each stratum. Based on this finding, the study therefore, concluded that infrastructural facilities are very important factors that enhance effective migration to digital education in higher institution. The study recommended that, the regulatory body and accreditation panel should ensure the there is adequate facilities for digital education in all department to enhance effective migration to digital education in public higher institutions and public higher institutions should be well monitored and supervised by NUC, NCCE and National Board for Technical education (NBTE) to ensure standards.

Keywords: Migration, Digital Education, Covid-19, Higher Institution and Pandemic.

INTRODUCTION

In the recent times, the globe was embroiled in "invisible war" otherwise as Covid-19 pandemic. Covid-19 pandemic which is a novel virus that emerged from who sale seafood market in Wuhan, China, which also sold live and freshly slaughtered animals, has redefined "modus operadi" of how humanity and activities were previously conducted. According to Time Magazine (2020) the global clock as reset, with the declaration of Corona Virus as global pandemic on 11th March, 2020 by a global health body called World Health Organization. Business environment were shutdown, borders of counties were lockdown, economies started to bleed as many jobs were lost and educational sector was also shut down. Since the outbreak of the novel Covid-19 infectious diseases in a wholesale seafoods market in Wuhan Province of communist people of China in December, 2019 there has been conjectures among educationist, Scientists, politicians and even world leaders and religious leaders about the source of the virus. Some have postulated that the source of this novel

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virus is from a laboratory experiment in Wuhan while others believed it emanated from consumption of unwholesome animals by Chinese people, since some animals are harbingers of the virus such as snakes, and bats.

The COVID-19 pandemic has brought a new era of constraints for the globe, involving various aspects of our lives. From healthcare to economy, the effects of this global crisis can be seen all over the world. This global health crisis has affected every aspect of everyone lives, including the academic world, world leaders and religious leaders. As we navigate through this new era, it is important to understand the impact of this pandemic on the academic landscape. Through this process, we can gain a better understanding of the constraints and opportunities presented by the pandemic era and how the academic community can adapt and thrive in this new era of digital education migration.

Migration means movement of goods or people from one place to another, but however in this study it entails switch over to another direction such as digital education. This is why Wu, *et al.*, (2022) said innovative migration as people move to achieve something new. With the lock down of all the sectors including the education sector, the future becomes gloomy and hazy especially for Nigerian children in general and Abia State in particular. It is important to note that for effective switch or migration to digital education in Abia higher institutions, which is in order words e-learning education, depends on the factors such as; accessibility of digital learning, equality in education equal opportunity to all groups), quality of education (provision of suitable infrastructure aimed at delivery (Dickson, *et al.*, 2024).

Digital education refers to online learning which includes the use of Internet of Things devices or technology to improve the learning process for digital and distance education. It includes online courses, virtual classrooms, and interactive educational resources, etc. It allows learners to learn on their own at any time in any place and their preferred environment, breaking down traditional barriers to education. Digital education has also been found to improve retention rates and engagement among students. Its importance has been globally recognized and many educational higher institutions have acceptance it into their course content. With the advancements in devices, digital education continues, technology, to provide new educational opportunities in the world. It has opened up a world of possibilities and has become an integral part of new modern of education. With the improving prevalence of technology in education, digital education is becoming part of new modern academic in the institutions of higher learning (Dickson & Okechukwu, 2024b). The virtual classrooms and online courses, learners are not limited by time constraints or location. This allows learnesr to access education from anytime and anywhere in the globe, making learning more inclusive and accessible. Digital education can also be personalized to enable learner to meet their learning styles and needs and achieve success in their careers or their study. Adapt individuals learning applications, learning platforms, and learning software use algorithms and data to tailor the learning experience to each learners abilities. This can lead to a more effective and efficient learning process (Dickson & Okechukwu, 2024a). Digital education has potential to provide a more interactive, flexible, and personalize learning experience, it has the potential to improve learners' output or results and make distance education more flexible for all learners. With the widespread use of the Internet of Things for digital, education with digital devices, digital learning has opened up a world of new possibilities for learners and teachers alike. Through the use of digital tools, learners can access a wide range of resources and learning materials, making the learning process more interactive and engaging learners to learn. Digital learning also allows for personalized learning, where students can progress at their own pace and customize their learning experience according to their needs and interests. Digital education offers a more inclusive approach to education, as it breaks down physical barriers, making education accessible to learners regardless of their location or socio-economic background. This has a significant impact on promoting equal opportunities and providing education to underprivileged communities. Digital education also promotes collaboration and communication among learners and lecturers. With the use of online platforms, learners can connect with their peers and lecturers from different parts of the globe, allowing for a diverse and global learning experience.

STATEMENT OF THE PROBLEM

It is important to note that since the outbreak of COVID-19 pandemic, the world human activities have been adversely affected and grounded, educational programs and activities inclusive. This give rise to migration to digital education. This study sought to investigate the readiness of public higher institute in Abia State, Nigeria to migrate to the digital education.

RESEARCH OBJECTIVES

The main aim of this study is to investigate the readiness of public higher institutions in Abia to migrate to digital education in the covid-19 pandemic era. This study sought to:

1. Determine the extent of accessibility of migration to digital education in public higher institutions in Abia State at the era of covid-19 pandemic.
2. Assess the extent of equal education opportunities provided in migration to digital education in public higher institutions during the covid-19 pandemic era in Abia State.

RESEARCH QUESTIONS

The following research questions were used to guide the study:

1. To what extent are the Abia State public higher institutions accessible to digital education in the Covid-19 pandemic era?
2. What extent are equal education opportunities provided among the public higher institutions in Abia State during Covid-19 pandemic era?

RESEARCH HYPOTHESES

The following research hypotheses were formulated to guide the study:

Ho_1 There is no significant mean difference in accessibility to digital learning among public higher institutions to migrate to digital education during covid-19 pandemic era in Abia State.

Ho_2 There is no significant mean difference in responses of equal education opportunities among public higher institution to migrate education during covid-19 pandemic era in Abia State.

REVIEW OF RELATED LITERATURE

This section is concerned with the review of empirical studies carried out in the areas of digital education and in educational research by different scholars as follows:

In a related study, Hameed *et al.*, (2013) carried out an empirical study to investigate the impact of Social Networking sites on students' academic performance and Attitude in case of Pakistan. The purpose of the study was to assess the effect of social networking sites on students' academic performance and students' behavior. The population of the study was the University students of twin cities Rawalpindi and Islamabad (Pakistan) with a sample size of 300 drawn from Arid Agriculture University COMSATS, Bahria University, Quaid-e-Azam University and NUST. Data analysis was carried out using SPSS for the analysis of descriptive statistics and AMOS structural equation modeling was use for data analysis. The results of the study found that usage of social networking sites have positive and significant relationship with students' educational performance and students' attitudes. Based on the findings, the authors recommended that if parents properly monitor their children activities on internet, then it will be very helpful for their learning purposes; that additional research is needed to explore the most beneficial design to investigate the impact of social networking sites on students' performance and the specific kinds of activities that are most beneficial to learners. This study titled "the impact of Social Networking sites on students' academic performance and Attitude in case of Pakistan has a bearing with the present study because social networking is one of the components of digital education technology resources.

Dickson (2024) conducted a study on Overview of Internet of Things (IoT) Network Architecture for Digital. The main aim of this study is to evaluate the Internet of Things network architecture for distance learning and digital education (IoTNADLDE). The specific objectives included assessing the: IoT network architecture layers, scalability and security of the Internet of Things network standards and protocols of the Internet of Things network and Challenges presented by large-scale IoT network deployments. The method adopted in this study was the incremental descriptive model (IDM). The Internet of Things network architecture comprises multiple layers, which consist of the application layer, physical layer, data layer and network layer. Each layer within the Internet of Things (IoT) network architecture is vital for effectively implementing and functioning distance learning applications, facilitating secure and reliable data communication and sharing. The physical layer encompasses all hardware components and sensors responsible for data collection, whereas the network layer oversees the interactions between devices and gateways. The application layer is tasked with data analysis and processing, while the data layer is responsible for the storage and management of the gathered information. In summary, the IoT network architecture serves as an essential element in the operational success of the Internet of Things, allowing interconnected devices to communicate and share resources or information seamlessly. In conclusion, this study discussed the overview of the Internet of Things network architecture for distance learning.

A study conducted by Giuseppe *et al.*, (2003) titled "the use of the internet in psychological research: comparison of online and offline questionnaire at the Universita Cattolicadel Sacro Cuore, Milan, Italy." The study utilized the survey research design and had four research objectives and three hypotheses. The population was made up of web-based respondents and undergraduate university students. Simple random sampling method was employed to obtain 203 respondents and 202 undergraduate students bringing the sample size to a total of 405 respondents. Instrument for data collection were two categories of similar questionnaire: one web-based and the other paper printed. The online participants completed the Web-based survey by accessing a designated Web site. This site was developed in HTML format using the Ms FrontPage 2000 editor, and hosted on a MicrosoftNT Server with FrontPage extensions. On completion of the survey, participants were prompted to submit their data. On submission, the data were automatically entered into a table limited format file and were no longer available to participants. The hard copies of the questionnaire was administered and retrieved from the respondents. Statistical tools include frequency, percentage and Chi-square. The study found no relevant differences in the psychometric properties of the different questionnaire. This study is related to the present study in the sense that HTML format was developed use in digital education.

In the research conducted by Carlos *et al.,* (2009) carried out on Web Design: A Key Factor for the Website Success: a case study of University of Zaragoza, Spain. The aim of the study was to find out the main factors that affect the success of the e-commerce websites from a consumers' point of view and the role played by web design, two research questions and two null hypotheses were formulated to guide the study. The data for the study were collected by means of questionnaires; the data collected were analysed using tabulated frequency count and percentage. The study adopted survey design approach. The findings revealed that the website design addressed to simplicity and freedom of navigation provides clear, timely and accurate information in all its contents and an appearance that calls for the users' attention. This study is related to the present study in the sense that both studies centre on digital development/education.

The research conducted by Dickson and Ukegbu (2024) focuses on IoT-Enabled Smart Agriculture as a strategic avenue for Nigeria's economic recovery and sustainability. The burgeoning development of the Internet of Things (IoT) alongside the advent of Smart Agriculture offers Nigeria a significant opportunity to foster substantial economic growth and enhance the quality of life for its citizens. This study seeks to explore the capacity of IoT-enabled Smart Agriculture to serve as a catalyst for economic revitalization and sustainable development within the country. The specific aims include a comprehensive review of the current state of Nigeria's agricultural sector and the myriad challenges it encounters, such as security concerns, privacy issues, financial constraints, data management difficulties, energy shortages, limited access to advanced agricultural techniques, and inadequate land use oversight. The research methodology employed is the incremental descriptive model (IDM). The study subsequently outlines potential solutions that IoT-enabled Smart Agriculture can offer to mitigate these challenges, equipping Nigeria's agricultural sector with the necessary resources to enhance productivity and promote environmental sustainability. In conclusion, with the implementation of appropriate policies and strategies, this system has the potential to pave the way for economic advancement and ecological sustainability. Furthermore, the system's ability to alleviate poverty and generate employment opportunities for rural communities presents a vital chance for Nigeria to maintain its competitiveness in the global market while concurrently achieving its environmental objectives.

RESEARCH METHOD

Design of the Study: The study adopted a descriptive survey research design. Survey research design involves the collection of data through the use of interviews, observations and questionnaire at one point in time and used for opinion survey (Akpabio & Ebong, 2009). According to Nworgu (2006), descriptive survey research design is one in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group using questionnaire, In addition, Anyakoha (2009) stated that descriptive survey research design involves the use of questionnaire, interview and observation in order to determine the opinions, attitudes, performance and perception of persons of interest to the investigator. This design is considered appropriate for this study since information will be collected from students in all higher institutions in Abia State, Nigeria to determine the extent to which digital education migration in Covid-19 pandemic era.

Population of the study: The population of the study comprises 355 Students in six higher institutions in Abia State for 2022/2023 academic session in all the institution accredited by regulatory body, in Abia State. Specifically, the population consist of 71 students from State University (ABSU) Uturu, 62 students from Michael Okpara University of Agriculture (MOUAU), Umudike, 46 students from Abia State Polytechnic Aba, 53 from National Institutes for Nigerian languages (NINLAN), Abia, 47 students from College of Health and Management Technology, Aba and 76 students from Abia State College of Education Technical Arochkwu. The study population consists of all higher institution (Schools Authority 2022).

Sample and sampling technique: The sample sizes for the higher institution were 116 respondents' determined using Taro Yamane formula. Stratified random sampling was adopted while simple random sampling was used to selecting respondents from each stratum.

Instrumentation: The researcher developed instrument tagged "Covid-19 Pandemic and Migration to Digital Education (CPMDE)" was used in collecting data for the study. The questionnaire was sub-divided into two sections (A-B). Section A, sought respondents' demographic data. Section B elicits data from the respondents on digital education. Responses were based on a five-point rating scale

Reliability of the instrument: A test of the instrument was carried out to determine internal consistency using 20 respondents each from public higher institutions respectively who were not part of the main study. The data collected were subjected to Cronbach's Alpha reliability test. The Cronbach's Alpha was preferred because in order to establish a more accurate reliability of the instrument (Olaitan & Nwoke, 2000).

Method of data collection and analysis: The distribution of the questionnaire was carried out by the researcher with the help of one research assistant in order to achieve high rate of returns and as well prevent loss of instrument. Research assistant was guided on the procedures for distribution and collection of the instrument from the respondents. Two hundred and

sixteen (216) copies of the questionnaire were distributed while 116 copies were retrieved representing 91%. Therefore, copies were retrieved from public higher institution respectively. In answering the research questions, the mean and standard deviation was used, while independent t- test was used to test all the null hypotheses at .05 level of significance.

DATA ANALYSIS AND DISCUSSION

The results of the study are presented in accordance with the research questions and hypotheses the results of the data analyzed under the following subheading:

Research Question 1: To what extent do accessibility to digital education during COVID-19 pandemic era influence migration to digital education in public higher institutions in Abia State?

Data in Table 1 revealed responses on how accessibility to digital learning influence migration to digital education in public higher institutions in Abia State in COVID-19 pandemic era.

Table 1: Mean and Standard Deviation of influence of Accessibility of Digital Learning in COVID-19 Era on Migration to Digital Education

Variable	N	Mean	SD
Accessibility to digital learning	116	15.27	2.66
Migration to digital education	116	20.34	4.37

Table 1 revealed that the mean and standard deviation of accessibility to digital learning in COVID-19 pandemic era was 15.27 and 2.66 respectively while migration to digital education was 20.34 and 4.37 respectively, the difference in the mean scores indicated that the extent of accessibility to digital learning in COVID-19 pandemic era have influence on readily to migration to digital education by public higher institutions in Abia State

Research Question 2: To what extent does equal education opportunity inCOVID-19 pandemic era influence migration to digital education in public higher institutions in Abia State?

Data in Table 2 reveals respondents responses on how equal education opportunities in the COVID-19 pandemic era can influence migration to digital education in public higher institutions in Abia State.

Table 2: Mean and Standard Deviation of influence of equal education opportunity in COVID-19 Era on Migration to Digital Education

Variable	N	Mean	SD
Equal education opportunity	116	11.38	1.83
Migration to digital education	116	20.34	4.37

As can be seen in Table 2, the respondents reported that mean (11.38) and (1.83) standard deviation for equality in education opportunities in the COVID-19 pandemic era. For migration to digital education, a mean scores and standard deviation of 20.34 and 4.37 respectively were obtained. The difference in the mean scores revealed that the equality in education opportunities in COVID-19 pandemic era has influence on migration to digital education to a large extent.

Testing of Hypotheses

Ho1: There is no significant influence of accessibility to digital learning in COVID-19 pandemic era on migration to digital education in public higher institutions in Abia State.

Data in Table 3 shows t-test analysis of the influence of accessibility of digital learning in COVID-19 era on migration to digital education in public higher institutions in Abia State

Table 3: Paired t-test analysis of Influence of Accessibility of Digital learning in COVID-19 era on Migration to Digital Education (N=116)

Variables	Mean	SD	Df	t-value	Sig.
Accessibility to digital learning	1.38	1.83			
			115	20.80	.000
Migration to digital education	20.34	4.37			

Table 3 revealed that the t-valve (115) = 9.68. The significant level (.000) is less the chosen alpha level (.05). Based on the result, the null hypothesis that stated that there is no significant influence accessibility to digital learning in Covid-19 pandemic era on migration to digital education in public higher institutions in Abia State was therefore, rejected. The result implied that accessibility to digital learning Covid-19 pandemic era has significant influence on migration to digital education in public higher institutions in Abia State.

Ho2: There is no significant influence of equal education opportunity in COVID-19 pandemic era on migration to digital education in public higher institutions in Abia State

Data in Table 4 shows the paired t-test analysis of influence of equal Education opportunity in COVID-19 era on migration to digital education in public higher institutions in Abia State

Table 4.4: Paired t-test analysis of Influence of Equal Education opportunity in COVID-19 era on Migration to Digital Education (N=116)

Variables	Mean	SD	Df	t-value	Sig.
Equal education opportunity	11.38	1.83			
			115	20.80	.000
Migration to digital education	20.34	4.37			

Table 4.4 indicated that t-value (115) = 20.80. The significant level (.000) is less than the chosen alpha level (.05). based on the result, the null hypothesis that postulated that there is no significant influence equal education opportunity in Covid-19 pandemic era on migration to digital education in public higher institutions in Abia State was therefore, rejected the result implied that equality in education opportunities in Covid-19 pandemic era influenced significantly migration to digital education in public higher institutions in Abia State.

CONCLUSION AND RECOMMENDATIONS

The result of the study seems to imply that there was a greater influence of digital education migration during Covid-19 pandemic era in higher institutions in Abia State. Many countries have responded to rapid technological change by reshaping school education to develop learners' capacities for working with data and computation. Despite the present situation, many nations' curriculum now lags behind digital education. Based on the findings of the study, the following recommendations were made:

1. The regulatory body and accreditation panel should ensure the there is adequate facilities for digital education in all department to enhance effective skills acquisition in public higher institutions.
2. Public higher institutions should be well monitored and supervised by NUC, NCCE and NATIONAL Board for Technical education (NBTE) to ensure standards.

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