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Pre-service Teachers Perception of the Use of E-learning During Covid-19 Pandemic in Colleges of Education in North-West, Nigeria

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Abstract

This study of pre-service teachers' perception of the use of e-learning during the Covid-19 pandemic in colleges of education in the North-west, Nigeria, was guided by two objectives; to find out the availability of e-learning tools in colleges of education in North-west, Nigeria during Covid-19, to investigate the perceived usefulness of e-learning by the pre-service teachers in colleges of education in North-west, Nigeria during Covid-19 and two research questions; are e-learning tools available for teaching and learning in colleges of education in North-west, Nigeria during Covid-19? How do pre-service teachers perceive the usefulness of e-learning in colleges of education in North-west, Nigeria during Covid-19? The researchers used mixed methods (quantitative and qualitative) for data collection. A Multistage (called clustering) sampling technique was employed to select the sample from the colleges of education in North-west, Nigeria. The total population of the study is 113,030. The total sample that was chosen is 372 for quantitative and 23 for qualitative. The instruments used for data collection were adapted (questionnaires were used for quantitative, while data-blank was used for qualitative). The frequency and percentage were employed to analyze the respondents' demographic information. To answer research questions one and two descriptive statistics (frequencies and percentages) were used. The summary of the major findings points out that, there are no adequate e-learning resources in colleges of education in North-west, Nigeria that will enable them to use e-learning during Covid-19 and the pre-service teachers in colleges of education in North-west, Nigeria didn't use to e-learn during Covid-19. The study affirmed that e-learning can be used as an instructional tool in colleges of education in North-west, Nigeria.

Keywords: Availability; Covid-19; e-learning; pedagogy; usefulness.

1. INTRODUCTION

In this era, technological advancement is everywhere which gives birth to what is called e-learning. E-learning in the 21st century was accepted among many educationists as a panacea when our schools were officially closed worldwide as a result of the Covid-19 pandemic. The World Health Organization

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(WHO) on March 11, 2020, declared Covid-19 a pandemic and since then, the spread has worsened and more deaths have occurred. The Federal Ministry of Education closed all tertiary, secondary and primary schools nationwide over the outbreak of the virus in Nigeria (Adedigba, 2020 March, 19). The Coronavirus which is popularly known as Covid-19 has disrupted the global educational system as most countries around the world have resulted in the temporary closure of all educational institutions in an attempt to contain the spread of the pandemic (Adeoye, Adanikin & Adanikin, 2020). In light of the rising concerns about the spread of Covid-19 and calls to contain the coronavirus, a growing number of tertiary institutions have shut down to avoid face-to-face classes globally; the Coronavirus has revealed emerging vulnerabilities in education systems around the world.

Given the circumstances, the world found itself as a result of the total closure emanating from the pandemic; it is now clear that society needs flexible and resilient education systems as we face unpredictable futures (Ali, 2020). Large-scale, national efforts to utilize technology in support of remote learning, distance education and online learning/e-learning during the Covid-19 pandemic are emerging and evolving quickly (Ali, 2020).

No society will develop without sound education. In this case, any government that needs its society to develop must change their education system from conventional classes to e-learning. The fundamental guiding principle of government education policies is to do everything possible to guarantee the continuity of teaching activity, which has resulted in different initiatives on three different fronts: platforms, teacher training and digital content (Covid-19 Response, 2020). The primary and most significant area of initiatives has been to favour the implementation of emergency technological solutions for teaching continuity. Attention has focused on making available to higher education institutions that lack their virtual education platforms, technological mechanisms and resources for teaching distance courses, thereby guaranteeing minimal platform infrastructure. This has been the case for example, in Argentina, Brazil and Chile. While Chile has free access to the Google Classroom platform thanks to a commercial agreement with this company, Brazil, taking into consideration the approximately 19,000 university students at Higher Education Institutions (HEIs) which do not have their platform, has chosen to expand the capacity of its National Rede do Ensino e Pesquisa (NREP) to increase the offer of classes by videoconference to federal universities and institutes (Covid-19 Response, 2020). The North-west, Nigeria and the Nigerian government as a whole need to emulate the aforementioned countries that engaged themselves to find another alternative for teaching and learning processes during covid-19 pandemic. The Nigerian tertiary institutions were closed since when the pandemic broke out and now, they are planning to extend the closure of schools because of the second wave of the pandemic.

The educational sector globally is seen to be shifting towards e-learning to cushion the effect of this pandemic. However, developing countries evidenced by Nigeria's experience are posed with the challenge of shifting from conventional teaching to e-learning during the pandemic. The challenges arise as a result of the varying degree of preparedness of the institutions, lack of infrastructure, and paucity of funds and policy issues in the education sector. It is in tandem with these prevailing issues that this study examines the Nigerian educational system based on the global pandemic (Adeoye, Adanikin & Adanikin, 2020).

The closure of schools at all levels in Nigeria as a measure to contain the spread of the Covid-19 pandemic is a new thing which brings the attention of leaders, educationists and students to look for another alternative to ensure pedagogical continuity. E-learning can be used during Covid-19 to facilitate teaching and learning. The hitches faced are how to identify the e-learning tools and prepare pre-service teachers in North-west, Nigeria to use e-learning for their learning activities, and if the tools are not available, this shows various levels of our government are just planning what they cannot implement and our tertiary institutions may end of producing handicapped teachers that may not be able to

manipulate e-learning tools for their classroom delivery, with may lead to unqualified teachers that cannot face the 21st-century challenges.

Among the problems faced by the pre-service teachers in colleges of education in North-west Nigeria is how to prepare them to use e-learning tools for their academic activities, and if they did not use them during the Covid-19 pandemic they may end up being at home doing nothing and they may involve in a criminal act. Pre-service teachers in colleges of education may not use e-learning during Covid-19 as a tool that can make them study despite the pandemic. Therefore, research was carried out to find out the availability of e-learning tools in colleges of education in North-west, Nigeria during Covid-19, as well as to investigate the perceived usefulness of e-learning by the pre-service teachers in colleges of education in North-west, Nigeria during Covid-19.

Literature Review

E-learning is one of the technological innovations that are accepted by the general public. Various Literature shows that e-learning is one of the most rapidly growing new technologies in the whole world. Atsumbe, Raymond, Enoch and Duhu (2012), in their study “investigated the availability and utilization of e-learning infrastructures in Federal University of Technology, Minna” the objective of the study was to investigate the availability and utilization of e-learning infrastructures in Federal University of Technology, Minna. The study used a descriptive survey research design; random sampling was used with the use of the questionnaire. The findings revealed that e-learning infrastructures are not adequate in university teaching and learning and management’s efforts towards the development of ICT are mainly for administrative purposes. In addition, lecturers and students both have computers and laptops and can access the internet but, they do not use them for teaching and learning. This study is going to find out the availability, and usefulness towards e-learning resources.

Awodiji and Felicia (2019) investigated the “availability and utilization of e-learning facilities for management and business courses in universities in Kwara state”. A descriptive survey research design was adopted for the study. Stratified sampling techniques were used to select one hundred management and business lecturers in universities in Kwara State. A questionnaire was used for the data collection. The findings indicated that e-learning facilities were moderately available while utilization was found occasionally used for teaching and learning activities of business and management courses in the selected universities in Kwara state. The research used stratified sampling techniques but, in this study, random sampling will be used.

Oladimeji (2020), in his study “Availability and Utilization of E-learning Facilities in the Teaching of Senior School Physics in Ilorin, Nigeria” the study intended to examine the availability and utilization of e-learning facilities for teaching senior school physics in Ilorin. Survey research design was used, he used questionnaires for data collection through simple random sampling techniques. The finding revealed that e-learning facilities were available, but were not utilized for teaching and learning. The research was conducted in senior school physics, but in this study colleges of education in North Nigeria will be examined.

Popovici and Mironov (2015) in their study “students’ perception on using e-learning technologies” the study was carryout in Bucharest, Romania. The objective of the research is to identify students’ perceptions regarding the use of e-learning. The research surveys and questionnaires served as sources of data collection with the use of purposive sampling techniques. They find out that students are well-equipped to use technology in formal environments and are already using these technologies to support their learning process. The study used a purposive sampling technique and there may be bias, in this research random sampling technique will be used and each one has the chance to be chosen.

Almarabeh (2014), examined “students’ perception of E-learning at the University of Jordan based on Technology Acceptance Model”. The purpose of the study is to examine students’ perception of E-

learning at the University of Jordan based on the Technology Acceptance Model. The data in the study was gathered via descriptive survey with the use of a questionnaire, stratified sampling was used. The results of the study showed students are highly qualified and accept the E-learning system with the desire to use it in a more advanced manner in their teaching and learning. The research did not examine the availability of e-learning resources.

Vitoria and Nurmasyitah (2018) in their research “Students’ Perceptions on the implementation of e-learning: helpful or unhelpful?” the research conducted to develop an e-learning web-based module at the Primary Education Department of Syiah Kuala University in Indonesia. The study was a descriptive survey with the use of purposive sampling techniques; the data was collected using a questionnaire and interview. The questionnaire was constructed based on the Technology Acceptance Model (TAM) which suggested that two factors influencing someone’s acceptance of technology were perceived usefulness and perceived ease of use. The result showed that the students perceived the e-learning web-based module to be useful in improving their understanding, independence, self-discipline, motivation to learn and interactions with each other and with the teacher. The students also agreed that the e-learning web-based module was easy to use. Their study captured only usefulness and ease of use, but this research will capture the availability and use of e-learning resources for learning during Covid-19 in North-west, Nigeria.

Mahdizadeh, Biemans and Mulder (2013) in their study “Determining Factors of the use of e-learning environments by university teachers”, the study was designed to identify factors that can explain teachers’ use of e-learning environments in higher education. Descriptive survey research was used; a questionnaire was only used for data collection and the research was conducted at Wageningen University with the use of convenience sampling. They found that teachers’ use of e-learning environments can be explained to a high extent by their perceptions of the added value of these environments, which in turn are substantially influenced by their opinions about web-based activities and computer-assisted instruction for teaching and learning. Their study is limited to only examining teachers’ use of e-learning environments, in this research pre-service teachers will be investigating the availability and usefulness towards the use of e-learning.

Tamta and Ansari (nd) in their “study of university student’s perceptions towards e-learning” was conducted on undergraduate students of a premier State Agriculture University (SAU) in India. The study targeted to find out the perception of students towards e-learning. An exploratory research design was used in the study with purposive sampling; a structured questionnaire was used for data collection. The findings indicated that a large majority of students have positive perceptions about e-learning. The researchers used exploratory research design, which means they are expected to use two instruments for data collection because is a mixed method; a structured questionnaire and either checklist, interview or documentation. In this research structured questionnaire and Data-bank will be used.

Mbabazi and Ali (2016) in their research evaluation of e-learning management systems by lecturers and students in Uganda universities: a case of Muni University, aimed to “evaluate the level of user satisfaction, usability issues affecting e-learning adoption and established the factors hindering the acceptance and use of teach management systems by lecturers and students in Uganda”. A cross-sectional descriptive survey research design was used through a questionnaire only. The respondents agreed that the functionality of the system is good; the system is reliable, portable, usable, maintainable and efficient. The users also showed a positive attitude to using the system and also indicated that there is no specific person available to assist the users with and lack of equipment, course quality concerns, slow speed of the e-system, power problems, accessibility problems, network connections issues, lack of usability policy, legal concerns and lack of regular training on use Moodle hinder their usage of the system. Purposive sampling was used. The researchers did not touch availability of e-learning tools. In the same vein, they are not expected to use purposive sampling because they could be biased.

Tagoe (2012), in his study which is based on the Technology Acceptance Model (TAM) which was conducted in Ghana, examined students' perceptions on incorporating e-learning into teaching and learning. Survey research was used; the researcher relied on the questionnaire only for data collection using stratified sampling. Results from the study showed that students entered the university with computer skills which are critical to the introduction of e-learning; male students use it more often than female students for learning; there was a relationship between the length of time students have been using the internet and frequency of use of the internet; students preferred mixed mode and web supplemented courses in the immediate future than web-dependent and fully online courses. The study was conducted in Ghana based on TAM and they did not touch on the availability of e-learning resources. This research will be conducted in North-west, Nigeria; the target is to investigate the availability and usefulness of e-learning during the Covid-19 pandemic.

Hassan, Kouser, Abbas and Azeem (2014) in their research "Consumer attitude and intentions to adopt smartphone apps" suggested that no matter how the technology is perceived to be useful, the practicality of technology's ease of use may still affect users' intention of initial adoption or continuity. However, Hassan, Kouser, Abbas and Azeem (2014) argue that there is no direct relationship between PEOU and behavioural intention, whereas easy use of technology might be influential to users' perceived usefulness and affect users' adoption intention indirectly. This result is further supported by the applications of mobile services (Hassan, Kouser, Abbas & Azeem (2014). This study revealed that easy use of technology might be influential to users' perceived usefulness and affect users' adoption intention indirectly, they did not examine the availability of e-learning resources.

Based on the various studies reviewed showed those Atsumbe, Raymond, Enoch and Duhu (2012); Awodiji and Felicia (2019) indicated that there are no adequate e-learning resources which is contrary to the finding of Oladimeji (2020) which said e-learning resources are available for teaching and learning. On the usefulness, Atsumbe, Raymond, Enoch and Duhu (2012) showed students did not use e-learning resources to support their academic activities but Popovici and Mironor (2015); Almarabeh (2014); Vitoria and Nurmasyitah (2018) said they do.

E-learning takes the wistfulness of many researchers, especially during the Covid-19 pandemic which resulted in total lockdown. The reviewed literature shows that e-learning is the option that could be utilized to save the educational system entirely during the pandemic in Nigeria and the world in general. During the Covid-19 pandemic, all the schools (Primary, Secondary and Tertiary institutions) were closed and the government of The Federal Republic of Nigeria warned its citizens of the second wave of the Covid-19 pandemic. However, it has been observed by researchers that; the Covid-19 pandemic pushed the world to patronize e-learning as an alternative to continued education. Throughout, the researchers did not lay their hands on any study that said something regarding to availability and usefulness of e-learning for the continued improvement of pre-service teachers' learning activities in North-west, Nigeria during Covid-19. In addition, regarding the availability and usefulness of e-learning resources towards continuing learning, there were different findings by different scholars, some said that there is the availability of e-learning resources in their schools, some said they are not; some of them indicated that students use e-learning tools for learning activities but some said no, they used them for other purposes. Therefore, there is a need for research that will find out the availability and usefulness of pre-service use of e-learning for the improvement and continued learning in North-west, Nigeria during Covid-19; to prefer or improve it up to the standard.

The majority of the researchers that investigated the use of e-learning employed a quantitative method of data analysis with only a questionnaire serving as their instrument, very few used a mixed method. In this research, mixed methods will be employed (quantitative and qualitative methods) with questionnaires and interviews will serve as instruments for data collection. The rationale behind this choice is to get reliable and quality results without any manipulation. However, the majority of the

researchers used purposive and stratified sampling techniques but, in this study, simple random sampling will be used to avoid bias, everyone has a chance of being chosen.

2. METHODS

A descriptive survey research design was used in this study. The selection of this design allowed the researchers to collect samples from a large group based on the opinions and perceptions of people and subject the data to analysis. This is also what Zubairu (2014) described as allowing a group of people or items to be studied by collecting and analyzing data from a reasonable number of respondents or items to be considered representative of the entire group. The researchers used mixed-method research through the use of quantitative and qualitative modes of data collection. The design allows the researchers to collect data from the respondents by using questionnaires and interviews (Data-Blank) to know their opinions and sensitivity, consequently, the data was subjected to statistical analysis and interpretation. More so, the researchers used a convergent mixed method approach. This enabled the researchers to collect data separately (both quantitative and qualitative) and later compare them and see the result if the findings were the same or not.

The populations of the study are the pre-service teachers in colleges of education in North-West, Nigeria. A total of One Hundred and Thirteen Thousand, and Thirty (113,030) pre-service teachers are studying in the fourteen colleges of education in North-West, Nigeria. The details about the names of institutions and population of the pre-service teachers are presented in Table 1 (see Appendix A).

A Multistage (called clustering) sampling technique was employed to select the sample from the colleges of education in North-west, Nigeria. Cluster sampling is ideal when it is impossible or impractical to compile a list of the elements composing the population (Creswell, 2014). The Colleges of Education that were selected as per the population are Federal College of Education, Zaria, Kaduna State (FCEZ), Federal College of Education, Kano, Kano State (FCEK), Federal College of Education, Katsina, Katsina State (FCEKK), Shehu Shagari College of Education, Sokoto, Sokoto State (SSCE) and Zamfara State College of Education, Maru, Zamfara State (ZSCEM). The population of each institution listed above is 14,221, 15, 235, 10,151, 12,244, and 5,835 respectively. However, the total population of the sampled colleges is 372 for quantitative, which is in line with the Raosoft sample size calculator. Raosoft is software programmed to help determine sample size. The names of institutions, population and sample size are presented in Table 2.

Table 2. Name of institutions, population and sample size for quantitative.

College of Education	Population	Sample Size
Federal College of Education, Zaria, Kaduna State.	14,221	92
Federal College of Education, Kano, Kano State.	15,235	99
Federal College of Education, Katsina, Katsina State.	10,151	65
Shehu Shagari College of Education, Sokoto State.	12,244	79
Zamfara State College of Education, Maru, Zamfara State.	5,835	37
Total	57,686	372

The qualitative sample is smaller than that of the quantitative. The entire population that was chosen is 23; 5, 6, 4, 5, and 3 from FCEZ, FCEK, FCEKK, SSCE and ZSCEM respectively. (See Table: 3), the data for the qualitative sample is smaller than that of the quantitative. This is because the intent of using the qualitative method is to locate and obtain information from a small sample and to gather extensive information from the sample; whereas, in quantitative research, a large number is needed to conduct meaningful statistics analysis (Ismaila, 2020).

Table 3. Name of institutions, population and sample size for qualitative:

College of Education	Population	Sample Size
Federal College of Education, Zaria, Kaduna State.	14,221	5
Federal College of Education, Kano, Kano State.	15,235	6
Federal College of Education, Katsina, Katsina State.	10,151	4
Shehu Shagari College of Education, Sokoto State.	12,244	5
Zamfara State College of Education, Maru, Zamfara State.	5,835	3
Total	57,686	23

The reason behind the selection of FCEZ, FCEK, FCEKK, SSCE and ZSCEM was due to the time factor and logistics problems. The structured questionnaires were adapted to collect data for quantitative. The questionnaire by Atsumbe, Raymond, Enich and Duhu (2012), their questionnaire on “investigated the availability and utilization of e-learning infrastructures in Federal University of Technology, Minna Questionnaire” and that of Ismaila (2020) questionnaire on “pre-service teachers’ perception on the adoption of smartphone for learning in colleges of education in North-west, Nigeria”. The reason for adapting these questionnaires is that they were all based on the technological resources for e-learning. The questionnaire has two parts; parts A and B. Part A is for demographic information of the respondents which contains 7 items, while part B contains 18 items based on availability and usefulness towards the use of e-learning in North-west, Nigeria during covid-19. In Part A, respondents are to tick the appropriate answer through the spaces provided. In Part B, the respondents are to tick the appropriate option (yes or no). The responses would tell us the accurate personal opinion of the respondents.

The five institutions (FCEZ, FCEK, FCEKK, SSCE and ZSCEM) were used for the collection of data from the respondents through data-bank (see Appendix C). 23; 5, 6, 4, 5, and 3 from FCEZ, FCEK, FCEKK, SSCE and ZSCEM respectively would be selected. The responses were analyzed one after the other, summarizing the key points of the interview by the respondents which made the researchers arrive at the right decision/interpretation.

Data were analyzed in three stages, which are: demographic information, availability of the e-learning resources and usefulness of e-learning by the pre-service teachers’ use of e-learning for the improvement and continued learning was analyzed using part B of the instrument, with the use of Statistical Package for Social Science (SPSS) version 25.0; frequency count and simple percentage to elucidate the demographic data of the respondents. To answer research questions one (1) and two (2), descriptive statistics were used (frequencies and percentages). The qualitative data collected from the individual interview was analyzed and interpreted and the right decision was made. There are two ways of analyzing qualitative data; one of the approaches is to examine your findings with a pre-defined framework, which reflects your objectives. This slant is quite easy and is closely affiliated with policy and programmatic research which has pre-determined interests. This approach allows you to focus on particular answers and abandon the rest. We refer to this approach as ‘framework analyses’ (Ismaila, 2020). After the analysis both the results of quantitative and qualitative will be compared whether are the same or not.

3. RESULTS AND DISCUSSION

Frequency and percentage were employed to analyze the respondents' demographic information on gender and institutions. A descriptive analysis of respondents based on gender is shown in Table 4.

Table 4. Frequency Distribution of Gender

Gender	Frequency	Percentage (%)
Male	186	50%
Female	186	50%
Total	372	100%

Table 4 shows that 186 (50%) of respondents were male while 186 (50%) were female. This indicates that male and female pre-service teachers' respondents were equal in colleges of education in North-Western Nigeria. A descriptive analysis of respondents based on institutions is shown in Table 5.

Table 5. Frequency Distribution of Respondents' Names of Institutions

Name of Institution	Frequency	Percentage (%)
FCEZ	92	25%
FCEK	99	27%
FCEKK	65	17%
SSCE	79	21%
ZSCEM	37	10%
Total	372	100%

Regarding the institution's frequency distribution, 92 (25%) were from FCEZ; 99 (27%) were from FCEK; 65 (17%) were from FCEKK; 79 (21%) were from SSCE; while ZSCEM acquired the list of respondents of 37 (10%). Table 4.2 shows that respondents from FCEK were the majority. A summary of the analysis is presented in Table 6.

Table 6. Availability of e-learning tools

Items	No	Yes
a. Internet services provided by the college are adequate.	353 (95%)	19 (5%)
b. Internet services provided by the college are fast.	251 (67%)	121 (33%)
c. Internet services provided by the college are reliable.	311 (84%)	61 (16%)
d. Internet services can be easily accessed Outside the college (private cyber cafe).	299 (80%)	73 (20%)
e. The college digital library is efficient.	352 (95%)	20 (5%)
f. Educational materials can be accessed from the college website.	364 (98%)	8 (2%)
g. Links to educational resources websites and e-journals can be found on the college website.	361 (97%)	11 (3%)
h. Students can easily get access to a computer in the ICT Centre or within the college.	361 (97%)	11 (3%)
i. Interactive whiteboards are adequately provided in the college.	323 (87%)	49 (13%)
j. E-books are adequately provided online by the college.	370 (99%)	2 (1%)
Cumulative Percentage	90%	10%

Table 6 indicated that 90% of the respondents said; there is no availability of e-learning resources in colleges of education in North-west, Nigeria, only 10% of the respondents said; there is. This revealed that e-learning tools are not adequately provided in colleges of education in North-west, Nigeria with the majority of 90% of respondents.

This research question is answered using. A summary of the analysis about frequency and percentage is presented in Table 7.

Table 7. Perceived usefulness of e-learning

Items	No	Yes
a. Did you use e-learning during Covid-19?	362 (97%)	10 (3%)
b. Did online learning during Covid-19 improve your learning activities?	362 (97%)	10 (3%)
c. Did you find online learning during Covid-19 useful for learning?	370 (99%)	2 (1%)
d. Did online learning encourage you to read during Covid-19?	198 (53%)	174 (47%)
e. Did you receive immediate feedback from your lecturers while using online learning during Covid-19?	364 (98%)	8 (2%)
f. Did you prefer e-learning using pictures during Covid-19?	267 (72%)	105 (28%)
g. Did you prefer e-learning using audio during Covid-19?	361 (97%)	11 (3%)
h. Did you prefer e-learning using audio-visual during Covid-19?	2 (1%)	370 (99%)
Cumulative Percentage	77%	23%

Table 7 revealed that pre-service teachers of the colleges of education in North-west, Nigeria did not use e-learning for the continuation and improvement of their learning during covid-19 pandemic. This is so since 77% is greater than 23% of the respondents.

Analysis of Individual Interview

The individual interview was held with twenty-three pre-service teachers within the colleges of education in the North-west, Nigeria that were selected randomly. There are some elements of an interview report according to Alshenqeeti (2014), which are: themes and contents; methodology and methods (from designing to interviewing, transcription and analysis); result (the data analysis, interpretation and verification); and discussion.

As you aim to condense all of the information to key themes and topics that can shed light on your research question, you need to start coding the material. A code is a word or a short phrase that descriptively captures the essence of elements of your material (e.g. a quotation) and is the first step in your data reduction and interpretation (Celano, [nd](#)). The codes that were used for this study were: male A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11 and A12, while female B1, B2, B3, B4, B5, B6, B7, B8, B9, B10 and B11.

A summary of the analysis about e-learning tools available for teaching and learning in colleges of education in North-west, Nigeria during Covid-19 is presented in Table 8.

Table 8. Availability of e-learning tools

Items	No	Yes
a. Internet services provided by the college are adequate.	21 (91%)	2 (9%)
b. Internet services provided by the college are fast.	21 (91%)	2 (9%)
c. Internet services provided by the college are reliable.	21 (91%)	2 (9%)
d. Internet services can be easily accessed	12 (52%)	11 (48%)
e. Outside the college (private cyber cafe).		
f. The college digital library is efficient.	21 (91%)	2 (9%)
g. Educational materials can be accessed from the college website.	21 (91%)	2 (9%)
h. Links to educational resources websites and e-journals can be found on the college website.	21 (91%)	2 (9%)
i. Students can easily get access to a computer in the ICT Centre or within the college.	21 (91%)	2 (9%)
j. Interactive whiteboards are adequately provided in the college.	23 (100%)	0 (0%)
k. E-books are adequately provided online by the college.	21 (91%)	2 (9%)
Cumulative Percentage	88%	12%

Based on the availability of e-learning resources in colleges of education in North-west, Nigeria during Covid-19, the above responses show that 88% of respondents have a greater majority than 12%, meaning there were no adequate e-learning resources in colleges of education in North-west, Nigeria during Covid-19 pandemic that will enable pre-service teacher continue and develop their learning.

A summary of the analysis about pre-service teachers perceives the usefulness of e-learning in colleges of education in North-west, Nigeria during Covid-19 is presented in Table 9.

Table 9. Perceived usefulness of e-learning

Items	No	Yes
a. Did you use e-learning during Covid-19?	23 (100%)	0 (0%)
b. Did online learning during Covid-19 improve your learning activities?	23 (100%)	0 (0%)
c. Did you find online learning during Covid-19 useful for learning?	15 (65%)	8 (35%)
d. Did online learning encourage you to read during Covid-19?	23 (100%)	0 (0%)
e. Did you receive immediate feedback from your lecturers while using online learning during Covid-19?	23 (100%)	0 (0%)
f. Did you prefer e-learning using pictures during Covid-19?	9 (39%)	14 (61%)
g. Did you prefer e-learning using audio during Covid-19?	20 (87%)	3 (13%)
h. Did you prefer e-learning using audio-visual during Covid-19?	0 (0%)	23 (100%)
Cumulative Percentage	74%	26%

Table 9 is constructed on the usefulness of e-learning in colleges of education in North-west, Nigeria during Covid-19, the above responses show that 74% of respondents have a greater majority than 26%. The pre-service teachers in colleges of education in North-west, Nigeria during Covid-19 didn't use e-learning during Covid-19.

The results of the study revealed that both the quantitative and qualitative are the same in regards to the availability and usefulness of e-learning during covid-19 pandemic in the colleges of education in North-west, Nigeria.

Summary of Findings

The following are the findings of the study: (1) There are no adequate e-learning resources in colleges of education in North-west, Nigeria, which is why there is no continuity of teaching and learning during the lockdown (covid-19); (2) Pre-service teachers in colleges of education in the North-west, Nigeria didn't use to e-learning during Covid-19. The results were the same with both quantitative and qualitative modes of data collection.

Discussion of Findings

The finding discovered that there are no adequate e-learning resources in colleges of education in North-west, Nigeria, which is why there is no continuity of teaching and learning during lockdown (COVID-19) and the finding is in line with Atsumbe, Raymond, Enoch and Duhu (2012); Awodiji& Felicia (2019).

Another finding also discovered that pre-service teachers in colleges of education in North-west, Nigeria didn't use e-learning during Covid-19, the finding same as that of Awodiji& Felicia (2019); Atsumbe, Raymond, Enoch and Duhu (2012); Oladimeji (2020).

4. CONCLUSION

The study shows from the analysis above, that there were no adequate e-learning facilities that be used for remote learning during the lockdown and pre-service teachers in colleges of education in North-West, Nigeria didn't learn electronically during Covid-19 since the resources were not adequately available for the tasks.

The following were the recommendations drawn from the findings of the study. Firstly, the Federal Republic of Nigeria should provide all e-learning resources to public universities, colleges of education and polytechnics that will enable them to use e-learning during any pandemic when lockdowns are imposed. Secondly, the Federal Republic of Nigeria through the Federal Ministry of Education should pledge and consolidate seminars, conferences, workshops or lectures regularly to enlighten lecturers on the importance of integration of ICT-related technology especially during the pandemic. Thirdly, the Federal Republic of Nigeria should provide adequate electricity which will enable lecturers and pre-service teachers to use e-learning anytime and everywhere to learn. Fourthly, the Federal Republic of Nigeria and Non-Governmental Organizations should make an effort for the provision of free networks in all parts of the country which will enable access to internet service for continued improvement of learning even during any pandemic.

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APPENDICES

Table A. Name of Colleges and their respective Pre-service Teachers' Population

	Name of the College	Population
a.	Jigawa College of Education, Gumel, Jigawa state.	8,582
b.	Federal College of Education, Zaria, Kaduna State.	14,221
c.	Kaduna State College of Education, Gidan-Waya, Kafanchan, Kaduna State.	7,324
d.	Federal College of Education, Kano, Kano State.	15,235
e.	Federal College of Education (Technical), Bichi, Kano State.	9,983
f.	Sa'adatuRimi College of Education, Kumbotso, Kano State.	8,123
g.	Federal College of Education, Katsina, Katsina State.	10,151
h.	Imam Sa'idu College of Education, Funtua, Katsina State.	1,105
i.	Isa Kaita College of Education, Dutsin-Ma, Katsina State.	7,896
j.	Adamu Augie College of Education, Argungu, Kebbi State.	7,101
k.	Biga College of Education, Arkilla, Sokoto, Sokoto State.	2,80
l.	Shehu Shagari College of Education, Sokoto State.	12,244
m.	Federal Girls College of Education (Technical), Gusau, Zamfara State.	4,950
n.	Zamfara State College of Education, Maru, Zamfara State.	5,835
	Total	113,030

Source: Concerned Authorities of the various Colleges of Education in the North-west, Nigeria (2022).