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An investigation of the challenges of virtual learning in tertiary institutions in cross River state: The post covid-19 Era

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Abstract

In 2020 the global academic calendar was halted as a result of corona virus pandemic and most schools switched immediately to online learning. This was not the case with schools in Cross River State, as they lack facilities and the technology to run virtual programs. The purpose of this study is to investigate the challenges of virtual learning implementation in tertiary institutions in Cross River State, Nigeria. To achieve the purpose of the study, four research questions were raised to guide the study. Literature was carried out accordingly; the study adopted a mixed method research design. The design was a convergent parallel design that involves the use of qualitative and quantitative approach to data collection and analysis and the population of this study comprises of all teaching staff, students and the administrators from the five selected tertiary institutions under study. Stratified sampling technique was used to select a total of 3000 respondents; of which 2000 were students and 1000 were staff, randomly selected from the population. Two structured instruments were developed for data collection. Also interview was used for data collection and Data collection was done by the researchers and analysed using simple percentage, bar graphs and one sample t-test statistics.

Based on the findings, it was revealed that Majority of the students are aware of the utilization of online learning resources in the study area

- Lack of internet facilities, lack of internet enabled phones, among others are the perceived challenges that hinders students' utilization of online learning resources
- Academic staffs require skills to effectively use the online learning platforms
- Academic staffs do not have the competences required for the utilization of online learning platforms in the study area among others. Based on the findings it was recommended that Staff and students should be trained on how to use the online learning resources for educational purpose, Tertiary institutions in the state should as a matter of urgency incorporate and enforce online learning in their policies and programmes. Government should support the various institutions to invest on internet facilities as well as create a conducive environment for effective online learning delivery.

Keywords: Staff Productivity; Virtual Learning; Tertiary Institutions; Staff Performance; Challenges of Virtual Learning; Post Covid 19 Era; Cross River State.

1. Introduction

The year 2020 was a tough year for the global community, the corona virus pandemic swept across the globe leaving its marks on all aspects of human existence. The global academic calendar was thrown into a state of disarray by the Corona virus outbreak. Most schools from basic to universities were shut down and all academic activities were disrupted.

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Except maybe for some countries, which were able to switch to online learning immediately because they had facilities to accommodate the shift. According to Kharve and Gogia (2016) online learning or e-learning is a process of learning by electronic means which involves the use of computer, mobile phone or other electronic devices and accessing internet. There are two types of online learning: the synchronous interactive settings where learners meet in real time. This type of learning depends entirely on internet based resources and support systems through which anybody with connectivity can access anywhere and participate in the learning process. Asynchronous online-learning on the other hand, involve interactive sessions where participants interact at different times just like what we do in Whats App, Messenger, Telegram etc. It is an “on demand” service providing educational content in form of virtual classroom, webinars, online course, discussions forums and many more. Nevertheless, it is of importance to note that in the online learning, the teacher-centered approach has changed to a student-centered approach (Olayemi, Adamu & Olayemi, 2021).

Over the past two decades, virtual learning has been activated in some global institutes. However, most schools, colleges, and universities do not use this mode of learning, and are not completely aware of what is involved in virtual learning. Although, MOOC (Massive Online Open Course) has facilitated and increased academics’ awareness of online learning and its involvements in virtual learning in bringing education closer to our door steps, this is not the case in third world countries like Nigeria.

The post covid-19 era brought with it the ‘new normal’ –wearing of face mask, hand sanitizing/washing and social distancing. This era changed our social lives and with the introduction of the new safety guidelines, there was need for institutions and organizations to observe these regulations. Thus, in order to meet these guidelines as part of the safety protocols, large crowds and gatherings were not encouraged as they pose serious health threat to others. It was based on this that the decision to introduce virtual learning in the state was introduced. The decision to implement virtual learning in these institutions came as a result of the Nigeria Centre for Disease Control (NCDC) guidelines for covid-19 safety protocols. As such, most Vice Chancellors and Heads of Schools started making plans to introduce and promote virtual learning in order to continue the academic activities which have been halted for over a year in Nigeria due to the covid-19 outbreak. Thus, this did not produce the expected outcome. As all the tertiary institutions in the State soon reverted to face-to-face as soon as the tide subsided. The researcher wonders what could have been the reason for the change of heart; could it be as a result of the disappearance of the threat? However, the researcher perceived that there could be several challenges that led to this, one of which is poor preparation and lack of facilities, lack of knowledge in the use of online learning resources, inadequate infrastructures and so on. For these institutions to be able to embark and implement on virtual learning, there are some strategies for management to follow in order to achieve the desired objectives. Notwithstanding, the fear and worries in the eyes of both lecturers and students was glaring with very little evidence to support management with the decision to go ahead with the implementation (Mahyoob, 2020).

Bao (2020), and Filius, Kleijn, Uijl, Prins, Rijen, & Grobbee, (2019) argued that going entirely virtual requires significant planning and investments from all sectors. So, if the university has not taken the students and instructors through an online teaching training, and does not have enough resources including recording platforms both on campus and at home to get the instructor to record and present the work in a manner that can be accessed by students, then the online plan ends right where it started (Yang & Li, 2018). Therefore, before institutions decide to go virtual in the post COVID-19 era, they should evaluate this issue very well. For instance, Posting PowerPoint slides and sending documents on Whats App for students to read does not constitute online teaching. For any university to consider implementing virtual learning, such a university must have a robust online platform and well trained instructors who can record and present the material for students to access even from their homes. Also students on the other hand should have the means of accessing these materials through their laptops/tablets or android phones, etc. But if these things are not put in place, then it becomes a major challenge.

Hence, in order to bridge the gap and ensure uninterrupted educational delivery, universities across the continent are attempting to shift to online teaching and learning through institutional, national, continental and international initiatives (Olayemi, Adamu and Olayemi, 2021). Online learning is seen as an alternate learning that its entirety is dependent on the use of internet and some other important technologies with no physical contact between the students and the lecturers. This means that our power supply must be uninterrupted, internet access must be available and our devices must be working at all times and all the necessary things put in place for the smooth running of the online learning platforms. However, this has generated a lot of controversy and different opinions from the public, students and the lecturers. This is attributed to the lack of properly laid framework for the implementation of online learning. Other perceived challenges identified include lack of technological skills and experience and poor teaching and infrastructural facilities required for running online learning smoothly. It is well known that online learning depends on the availability of functional ICT facilities, technical-know how (skills) and students’ readiness. It is against this

background that this study intends to investigate the success and the challenges of virtual learning in tertiary institutions in Cross River State in the post Covid-19 era.

1.1. Problem statement/justification

Various studies have been conducted globally on virtual or online learning, however there is little or no studies that specifically address issues relating to the extent to which virtual learning implementation can be effective in tertiary institutions in Cross River State in the post covid -19 era. Consequently, Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński and Woźakowska-Kapłon (2020) investigated students' perception of online learning during the Covid-19 pandemic in Poland. The result shows that majority of the students had never experienced any form of e-learning before the pandemic, hence they identified technical issues as one of their key challenges. This result might stem from the fact that both students and staff were not previously exposed to online learning due to inadequate awareness and accessibility to facilities required.

Hence, this study was conducted to investigate the challenges faced by both management and staff in implementing virtual learning and also pinpoint the need for the adoption of virtual learning in our institutions. This became necessary to prepare the institutions to be ready in case of another outbreak or should a situation like this occurs in future even after the post covid-19 era, virtual learning can become a part of the institution's policy. Seeing that the world is a global village and every organisation is going virtual. The need to prepare ahead and be fully ready to tackle the challenges of virtual learning today, will serve as a key for tomorrow's success

1.2. Objectives of the studies

The purpose of this study is to investigate the challenges of virtual learning in tertiary institutions in Cross River State in the post covid-19 era. Specifically, the study seeks to:

- Examine the level of awareness of students on the use of the online learning resources?
- To assess the perceived challenges that could affect students' utilization of online learning resources among students
- Determine What are the skills possessed by academic staff for the utilization of online learning platforms among teachers in universities
- Find out the competences required by lecturers for the utilization of online learning platforms?
- Investigate the perceived challenges that could affect academic staff from participating effectively in online learning platforms in the post covid 19 era
- Ascertain the readiness of management towards deploying online learning platforms

1.3. Research questions

- This study will be guided by the following research questions:
- What is the level of awareness of students on the use of the online learning resources?
- What are the perceived challenges that could affect students' utilization of online learning resources among students?
- What are the skills possessed by academic staff for the utilization of online learning platforms among teachers in universities?
- What are the competences required by lecturers in the use of online learning platforms?
- What are the perceived challenges that could affect academic staff from participating effectively in online learning platforms in the post covid 19 era?
- How ready is management towards deploying online learning platforms?

1.4. Statement of Hypotheses

The following hypotheses were formulated for the study

- The level of awareness of students on the use of the online learning resources is not significantly high. There is no significant difference between students being conversant with online learning resources.
- There is no significant difference between the skills required by academic staff and their utilization of online learning platforms
- The competence possessed by academic staff in the use of online learning platforms is not significantly high.

2. Literature review

The online learning became a necessary tool to prevent the spread of corona virus or any other outbreak and to ensure that educational activities are not halted. Online education has useful learning tools which gives access to educational platforms around the clock at their time preference which makes it flexible, regardless of place and time (Almahasees Mohsen and Amin, 2021). A study by Stec, Smith, and Jacox, (2020) observed that online teaching has three main approaches, namely, enhanced, blended learning, and online approach. Enhanced learning uses the intensive use of technology to ensure innovative and interactive instruction. Blended learning mixes both face-to-face and online learning. The online approach according to them, indicates that the course content is delivered online. Online learning is convenient for students, where they can access online materials round the clock. Online education turns education to be student-centered, where students take part in the learning process, and teachers work as supervisors and guides for students. Online platforms have different tools to facilitate conducting online interactive classes to reduce students' loss. Online education platforms are designed to share information and coordinate class activities. There are most famous prominent interactive online tools: DingTalk, Hangouts Meet, Teams, Skype, WeChat Work, WhatsApp, and Zoom. These are all interactive online platforms that aid learning in an online environment (UNESCO, 2020). The online learning experience is different globally. Some countries have the required resources to facilitate learning, while many others do not have the equipment available in high and middle-income countries. In the Arab region, some countries such as Jordan, KSA, Qatar, Emirates, Bahrain, and Kuwait are relatively developed compared to other Arab countries. During COVID-19, most Arab higher education institutions shifted to synchronous and asynchronous online learning methods.

A virtual classroom is not so different than the traditional classroom; in a virtual class, there is a teacher who is teaching but not in the class but in front of a camera of a computer somewhere and the students participate in his class sitting in their room in front of the computer somewhere else. In the virtual classrooms there can be an interactive session like a traditional classroom, students and teachers can interact. Virtual Classroom can be defined as "A collaborative web conferencing tool with an online white board, breakout rooms, and screen sharing capabilities, for teachers and tutors who want to conduct highly interactive live online teaching sessions." (Nwachukwu, Ugwu, and Wogu, 2021). However, they maintained that digital teaching generally aims to have students actively involved in learning activity to achieve the set learning outcome. Thus, Mason (1998) cited in Dhull and Sakshi (2019) suggested that most online- Learning courses comes in two forms; a "partially online" or a "fully online Learning course" A "partially online" course is one that integrates existing resource materials that are available either in print or non-print format such as textbooks, journals etc. with some elements of online learning. This might include the use of a learning management system or simply a mailing list for some asynchronous discussion (Naidu & Oliver,1999). A "fully online" course, on the other hand, is one that will have most of its learning and teaching activities carried out online.

Sequel to the rising concerns about the spread of COVID-19 and the need to contain and curtail the virus, a growing number of tertiary institutions have shut down in regards to conventional classroom delivery (Ali, 2020). Hence, for the continuity of educational activities, institutions of higher learning alternatively resorted to various digital modalities and strategies to provide virtual learning (Nwachukwu, Ugwu, and Wogu, 2021). Accordingly, Bao (2020) stressed that some universities such as Harvard, MIT, Yale, Oxford, Cambridge, Tsinghua, Peking University, among others are moving in this direction. At the Cross River University of Technology, for instance, Senate approved a calendar to begin virtual learning but unfortunately it ended with in person learning. Also the University of Calabar management had proposed online learning but just like CRUTECH it ended in a traditional (face-to-face) method. The researcher wonders whether is as a result of lack of preparedness by management or unwillingness by lecturers and students to support the system, being that online learning require certain structures and facilities to be put in place. As such, online learning can only be effective where there is adequate support system. For such support to be sustainable, both students and lecturers must have seamless access to electronic devices, internet as well the required skills and competences to navigate the platform. Furthermore, they must be attuned to the new environment and culture of learning. Consequently, the perception of students on online learning resources may lead to acceptance and use which may translate to good additional method of learning during the pandemic lockdown (ASUU-UI Publicity Committee, 2020).

However, the level of digital learning in Nigeria is still at low ebb due to the resistance to change from traditional pedagogical methods to more innovative, technology-based teaching and learning methods by the educational sector. This may not be far connected with the facts that there is inadequate ICT infrastructure, the educational sector is generally underfunded, poor and limited expertise, lack of training and retraining of both staff and students in the use of the various ICT for online learning as well as the overdependence of educational institutions on government (Nwachukwu, Ugwu, and Wogu, 2021). For instance, Digital readiness indicates a nation's ability to implement digital learning and harness advantage of ICT. In most developing countries, especially Nigeria in particular, learning is mostly done traditionally (face-to-face), thus adapting to online learning would require certain behavioral changes and

regulatory directives in order to make it work for the learner and teachers. This became important because not all the students and lecturers are adequately equipped on how to use online learning platforms. As such, online learning can only be effective if adequate provision is made for both lecturers and students to support the online system. For such support to be sustainable, both students and lecturers must have seamless access to electronic devices, internet as well as the required skills to navigate the platform. Furthermore, they must be attuned to the new environment and culture of learning. Hence, it is the responsibility of management to make sure that all the groups involved are catered for in terms of providing conducive environment, facilities, training and access to be able to pull through with the online learning process.

According to Demuyakor (2020) technology will reshape the universities by 2030. Although the online system of education is seen as relatively new, however, according to research, it will just be as effective as school-based methods in the future (Murphy, 2020; UNESCO, 2020). The US Department of Education analyzed more than 1,000 learning studies. And it was discovered that students who take their courses online outperform classroom-based students across most subject areas. In other review, it was observed that online students had the advantage of time, and according to the author, the gap is likely to widen with the evolvement of programs and technologies. Dhull and Sakshi (2019) maintained that online Learning encompasses a range of technologies such as the worldwide web, email, chat, new groups and texts, audio and video conferencing delivered over computer networks to impart education. It helps the learner to learn at their own pace, according to their own convenience. Online Education requires a great deal of resources and careful planning. In this, teachers act as facilitators rather than transmitters of content knowledge, and ICT is regarded as resource that enhances the learning experience of students. Learners learn through e-learning tools which are available to all. E-Learning has brought back the joy in learning through its innovative and interactive content delivery and has proved to be more appealing among students. Explicating further, Holzberger, Philipp and Kunter in Nwachukwu, et al (2021) saw digital learning as a delivery with digital forms of media such as texts or pictures through the internet in order to enhance learners' learning, to improve teaching effectiveness and promote personal knowledge and skills.

Nonetheless, the digital infrastructural backwardness and the unpreparedness of some educational sectors mostly in developing nations such as Nigeria to totally embrace such change have almost made continuing education through digital modalities unfeasible. With this, there is an exposition and recognition of the increasing importance of online learning in not only in this dynamic world but also in emergency (Oyedele, 2020). It has revealed the weaknesses of the Nigerian educational sector and the need to rethink and review existing education infrastructure as learning has become an activity that can be carried out irrespective of time and place amidst the pandemic, with the support of digital tools, and also in case there is a reoccurrence of any outbreak the doors of our institutions may remain open. Hence, now is an opportunity to improve standards, contribute to knowledge-based economies, enrich learning potentials, facilitate personalized learning and in all, transform pedagogy to make it more student-centered in line with the global standard (Fullan, 2013; Hammond, 2013). Therefore, the adoption of digital learning is very crucial to ensuring the continuity of education in Nigeria which demands that all hands must be on deck (government and organizations) to facilitate the work on our digital infrastructure, up-skilling staff and expanding their capabilities. Accordingly, Nwachukwu, Ugwu, Chinweoke and Wogu, (2021) observed that online learning depends critically on an electronic devices and effective library system with online resources with seamless access from across the globe. In most developing countries, learning is mostly done traditionally (face-to-face), thus adapting to online learning would require that certain behaviors, attitude and perception of those involve must change and a new policy be put in place in order to make it work for both the learners and the teachers.

Hence, Nigerian educational sector is currently being faced with problems transitioning to a digital educational environment due to some factors revolving around digital infrastructural and accessibility issues even though an opportunity presented during the pandemic. Little wonder, Onwuegbuchi (2018) observed that Nigeria was missing in the second edition of world digital competitiveness ranking report. Also, Kazeem (2020) noted that Nigeria has been rooted in the bottom quarter of the global broadband speed rankings for 2019 by UK analytics firm cable which presents a problematic condition that could undermine digital learning in the country. Hence, Dhawan (2020) ascertained that There is need to expand the broadband connectivity and invest handsomely in the necessary structures that will enable digital learning to thrive as seen in first world countries. This will be achieved through the adoption and the implementation of policies and programs in line with the future-oriented education. Consequently, Nwachukwu, et al, (2021) have also observed that due to some hindrances in the Nigerian educational sector, there are obvious and reluctant attempts that encourage reliance on the traditional pedagogy in educational process despite the emergence of technology. The difficulty in fostering digital learning in Nigeria can be tied to our poor digital infrastructure. For instance, the 2020 Digital Global Overview reported that only 20 percent of Nigerians have access to smart phones while about 40 percent only, have access to the internet (Osugwu, P. & Umeh, 2020). This has led to a significant slowdown of digital learning implementation in Nigerian educational sector, especially the public universities which are currently

experiencing total and complete shut down as a result of industrial action. Without the necessary technology and internet accessibility, it will hardly be possible to make both the academics and the students comfortable with delivering and consuming learning content digitally. Also, Wang, Lia, Malik and Anwar, (2021) carried out a study stating the positive and negative aspects of online learning, to assess students level of satisfaction, however, their results produced mixed results. Although the students were satisfied by the overall education experience, they complained of not having quality internet connections and that their devices were not up-to-date.

In the same vein, Almahasees, Mohsen and Amin (2021) carried out a study on Faculty's and Students' perceptions of online learning during COVID-19. The result of the analysis showed that the common online platforms in Jordan were Zoom, Microsoft Teams and WhatsApp which are used for communication with students outside the class. The study found that both faculty and students agreed that online education is useful during the current pandemic. At the same time, its efficacy is less effective than face-to-face learning and teaching. Faculty and students indicated that online learning challenges lie in adapting to online education, especially for deaf and hard of hearing students, lack of interaction and motivation, technical and Internet issues, data privacy, and security. They also agreed on the advantages of online learning. The benefits were mainly self-learning, low costs, convenience, and flexibility. Even though online learning works as a temporary alternative due to COVID-19, it could not substitute face-to-face learning.

Frankl (2021) carried out a research to examine the educational value of a degree obtained through a traditional brick and mortar business school compared to the educational value of a degree attained through an online delivery method. The research outcome was that both kinds of delivery methods have similar educational value, each with its own unique way of delivery, advantages and inconveniences. The study also revealed that virtual schools offer a higher availability to students, and is more economical due to its lower fees and less stress. The research further showed that brick and mortar schools carry more prestige and are better recognized by potential employers, and that students have access to social interaction in

the classroom and it makes it possible for them to bond together, a trait that is not possible with the online learning. Based on the findings the study further, suggested a Program Assessment Method (PAM) for online programs based on competencies and learning outcomes. The PAM addresses issues associated with the academic aspects of the program, the management concerns involved, as well as the accreditations requirements of institutions.

Nwachukwu, Ugwu, and Wogu, (2021) carried out a study on Digital Learning in Post COVID-19 Era: Policy Options and Prospects for Quality Education in Nigeria. This study ascertains Nigeria's readiness towards digital learning, prospects, challenges and policy options amidst Covid 19 pandemic. Evaluation theory in line with qualitative research design was used to analyze the research questions. The finding showed that though meaningful efforts has been made by few of the private universities but the public universities are not good enough for full implementation of digital learning. The study suggested a liberalization of the educational sector from the bureaucratic bottleneck that has bedeviled its transformational development over the years and concluded that education as a key to national development cannot be relegated to the background but must be fully funded and adequately equipped to face the challenges of sustainable development. Consequently, Barbu, Popescu and Moiceanu, (2022) conducted a research on the Perspective of Teachers and Students towards the Education Process during COVID-19 in Romanian Universities. The results highlighted the discrepancy between the perspectives of the two parties directly involved in the university educational process. The study revealed that the pandemic forced both stakeholders to work harder than before, which negatively affected the way the educational process unfolded, the pleasure of the teaching/learning process, the level of enthusiasm, and sometimes even the academic results. Furthermore, the results also highlighted the need for government to make financial investments for the acquisition of licenses to create virtual animations or simulations, as well as for the training of academic on how to use them.

Demuyakor (2020) conducted a study to examine the Corona virus (COVID-19) and Online Learning in Higher Institutions of Education. The paper aims at assessing whether Ghanaian international students in China are satisfied with the "mass" online learning in higher educational institutions in Beijing, China. The study used an online survey to investigate the level of satisfaction of online learning in higher educational institutions and how Ghanaian international students are coping with these "new initiatives". The findings of the study revealed that the implementation of online learning programs was a very great idea as the majority of the sampled students supported the initiative. The study also showed that students have adequate knowledge of the COVID-19 pandemic. Further findings of the study revealed that students incurred high cost of data in the cause of participating in the online learning. It was further observed from the study that internet connectivity was very slow for students leaving within the dormitories of various universities in China. Confirming this view, Karagul, Seker and Aykut, (2021) in their study aimed at exploring the digital literacy of different school levels, ages, and gender. The result of the findings revealed that there is no significant difference between the variables under study, and all the groups showed that their digital literacy levels were high. The reasons

according to the authors is that, students were already aware and have knowledge of information technology before the COVID-19 pandemic, and e-learning for them, was a near-perfect fit.

Consequently, More recently, various studies on virtual learning have been conducted to find out the perception and attitudes of students during the covid 19 pandemic. Authors like (Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński and Wożakowska-Kapłon , 2020), Shetty, Shilpa, Dey and Kavya, 2020), Abbasi, Ayoob, Malik and Memon , 2020) have all investigated students' perception of online learning and attitudes of students towards online learning during the Covid-19 pandemic in different countries. The result shows that majority of the students had never experienced any form of e-learning before the pandemic; hence they identified technical issues as one of their key challenges. This result might stem from the fact that the students were not previously exposed to online learning due to inadequate awareness and accessibility to facilities required. The result also showed that the students have favourable perceptions towards online learning for sustaining their academic interest and development during the pandemic. Nevertheless, they perceived many challenges during online learning like lack of face-to-face interactions, lack of socialization, distraction by social media, technology related issues and so on. In contrast, Abbasi, Ayoob, Malik and Memon (2020) surveyed the perceptions of students towards e-learning during the lock down at Liaquat College of medicine and dentistry. The result indicated that majority of the students have negative perceptions towards e-learning. The study concluded that there is need for administration and faculty members to take crucial measures for improving e-learning for better education during the lockdown.

Thus, Filho et al. cited in Barbu, Popescu and Moiceanu, (2022) have also outlined the challenge of coping with e-learning, for teachers and students alike. Their paper also mentioned concerns about teaching effectiveness using this method. Again they noted that lack of personal communication and face-to-face interaction that gives students the motivation to bond will be lacking. Following an online survey at the University of Petrosani, with the purpose to monitor the online learning implementation and satisfaction levels, Edelhauser and Lupu-Dima (2020) showed that students quickly adapted to this new way of learning, but pointed out that using different online delivery tools has its challenges

From the literature review above, it has been discovered that both lecturers and students have different perceptions of the use of online learning, hence the outcome varies. This perception might stem from the fact that they have different level of exposure, knowledge, experiences, skills, competences, encounters and so on, in accessing online resources. The literature reviewed also ascertained that there are several challenges associated with online learning platforms. This is partly because there are no lay down structures and facilities in these institutions to cater for the needs of learners and also because of the epileptic power supply in our country. Literature reviewed also revealed that in the past embracing virtual learning was more of a choice this owes to the fact that the digital world was increasingly penetrating the educational domain for teaching and learning purposes (Osuagwu & Umeh, 2020). But today, is a matter of necessity after the marks that the pandemic left behind, for the developed countries the swift was easy but for developing countries like Nigeria, it might take a while before online learning can be embraced completely in our institutions. The reason being that, according to Nwachukwu, Ugwu, and Wogu, (2021) Nigeria ranked 79 from 2013-2017 and 80 from 2018 -2022 in her readiness for institutional e-learning and ability of institutions to use Information communication and technology (ICT) to achieve her mission and vision of digital learning for quality education.

3. Methodology

The study adopted a mixed method research design. The design was a convergent parallel design that involves the use of qualitative and quantitative approach to data collection and analysis. The population of this study comprised all teaching staff, students and the administrators from the five selected tertiary institutions under study. Stratified sampling technique was used to select a total of 3000 respondents; of which 2000 were students and 1000 were staff, randomly selected from the population. Two structured instruments titled: Assessment of Student's Online Learning Resources (ASOLR) and Assessment of Academic Staff Online Learning Platforms (AASOLP) was developed by the researchers for data collection. Two thousand (2000) students and one thousand (1000) staff were drawn randomly from the population as samples for the study. Also, two (2) administrators or management staff or Heads of schools were interviewed from each institution making a total of ten (10) management staff. To ensure the validity of the instrument, face and content validity was carried out by experts in the area of test and measurement. The first part of the questionnaire captured the demographic attributes of the respondents. While the second part of questionnaire assessed the respondents' perception and readiness towards online learning using a four point Likert scale format. The reliability of the instrument was established using Cronbach alpha reliability technique and the coefficient of the sub scales ranges from 0.76 to 0.86. Data collection was done by the researchers and analysed using simple percentage, bar graphs and one sample t- test and the result is presented below.

3.1. Results (expected outputs)

It expected that at the end of this study, Cross River government will see the need to:

- Establish a relationship between use of virtual learning tools and the willingness to accept virtual learning.
- Determine the extent of management’s readiness to deploy online learning platforms.
- Examine the skills and competences that lecturers posses in using online platforms.
- Identify the perceived challenges that could affect staff and students from participating effectively in online learning and also management staff from implementing virtual learning in the post covid-19 era.

4. Result

4.1. Research question one

What is the level of awareness of students on the use of the online learning resources? The question is a one variable research question with level of awareness of online learning resources as its primary focus. To answer this research question, simple percentages and bar graphs was used and the result is presented in Table 1.

Table 1 Simple percentages analysis on the awareness of online learning resources among students

s/n	Items	HA	A	SA	NA	Remarks
1	Zoom	1042(52.1%)	402(20.1%)	258(12.9%)	284(14.2%)	Aware
2	Skype	442(22.1%)	1104(55.2%)	52(2.6%)	402(20.1%)	Aware
3	Microsoft Team	52(2.6%)	402(20.1%)	442(22.1%)	1104(55.2%)	Not aware
4	Google hang out	374(18.7%)	218(10.9%)	294(14.7%)	1114(55.7%)	Not aware
5	WhatsApp	410(2.05%)	1170(58.5%)	90(4.5%)	330(16.5%)	Aware
6	Youtube	864(43.2%)	462(23.1%)	446(22.3%)	228(11.4%)	Aware
	Total	3184(26.53%)	3758(31.31%)	1582(13.18%)	3462(28.85%)	Not aware

HA-highly aware , A-aware , SA-somehow aware and NA-Not aware (Source : field work, 2022)

The result in Table 1 and Figure 1 showed that on aggregate , 3184 responses representing 26.58% noted that they are highly aware of the use of online learning resources, 3758 response representing 31.3% noted that they are aware of the use of online learning resources, 1582 responses representing 13.18% noted that they are somehow aware of the use of online learning resources while 3462 responses representing 28.85% noted that they are not aware of the use of online learning resource. Cumulatively 57.89 % responses of the respondents showed that they are aware of the use of online learning resources while, 42.11% responses showed that they are not aware of the use of online learning resources. This implies that majority of the students are aware of the utilization of online learning resources in the study area

4.2. Research question two

What are the perceived challenges that could affect students’ utilization of online learning resources among students? The variable in this research question is perceived challenges to the utilization of online learning resources among students. To answer this research question, simple percentages and bar graphs were used and the result is presented in Table 2.

Table 2 Simple percentages analysis on the perceived challenges of the utilization of online learning resources among students

s/n	Items	SA	A	D	SD	Remarks
1	Lack of internet facilities	246(12.3%)	462(23.1%)	864(43.2%)	428(21.4%)	Agreed
2	Poor access to online resources	684(34.2%)	778(38.9%)	202(10.1%)	336(16.8%)	Agreed
3	Inadequate data for surfing the net	864(43.2%)	640(32.0%)	442(22.1%)	54(2.7%)	Agreed
4	Poor power supply	264(13.2%)	378(18.9%)	1064(53.2%)	294(14.7%)	Not agreed
5	Lack of internet enabled phones	864(43.2%)	676(33.8%)	324(16.2%)	136(6.8%)	Agreed
6	Lack of sufficient school-based laptops	650(32.5%)	910(45.5%)	436(21.8%)	4(0.2%)	Agreed
7	Financial constraints	684(34.2%)	804(40.2%)	406(20.3%)	106(5.3%)	Agreed
8	Low level of knowledge of internet surfing	284(14.2%)	330(16.5%)	886(44.3%)	500(25.0%)	Not agreed
	TOTAL	4540 (28.38%)	4978 (31.11%)	4624 (28.9%)	1858 (11.61%)	Agreed

SA-strongly agreed; A-agreed; D-disagreed and SD-Strongly disagreed (Source : Field work 2022)

The result in Table 2 and Figure 2 showed that on aggregate, 4540 responses representing 28.37% strongly agreed that there is lack of internet facilities, lack of internet enabled phones ,poor power supply, lack of sufficient school based laptops, low level of knowledge of internet surfing are perceived factors that challenges the utilization of online learning resources , 4978 responses representing 31.11% agreed that the aforementioned are the challenges, 4624responses representing 28.9% disagreed that the aforementioned factors are not challenges that are militating against the utilization of online learning resources while 1858 responses representing 11.61% strongly disagreed that lack of internet facilities, lack of internet enabled phones , power supply, lack of sufficient school based laptops, low level of knowledge of internet surfing are perceived factors that challenges the utilization of online learning resources. Cumulatively, 59.49% of the responses showed agreed that lack of internet facilities, lack of internet enabled phones , power supply, lack of sufficient school based laptops, low level of knowledge of internet surfing are perceived factors that challenges the utilization of online learning resources while 40.51% respondents representing disagreed that lack of internet facilities, lack of internet enabled phones ,poor power supply, lack of sufficient school based laptops, low level of knowledge of internet surfing are perceived factors that challenges the utilization of online learning resources. This implies that the aforementioned. Factors are the perceived challenges to the utilization of online learning resources among students

4.3. Research question three

What are the skills possessed by academic staff for the utilization of online learning platforms among teachers in universities? The variable of the study here is skills possessed by lecturers for the utilization of online learning platforms. To answer this research question, simple percentages and bar graphs were used and the result is presented in Table 3.

Table 3 Simple percentages analysis on the skills required for the utilization of online learning platforms among teachers in universities

s/n	Items	HA	R	SR	NR	Remarks
1	Surfing skills	241(24.1%)	653(65.3%)	77(7.7%)	29(2.9%)	Required
2	Editing skill	543(54.3%)	219(21.9%)	165(16.5%)	73(7.3%)	Required
3	Internet connection skills	342(34.2%)	398(39.8%)	276(27.6%)	16(1.6%)	Required
4	Typing skills	432(43.2%)	410(41.0%)	132(13.2%)	26(2.6%)	Required
5	Downloading skills	149(14.9%)	457(45.7%)	233(23.3%)	161(16.1%)	Required
5	Downloading skills	149(14.9%)	457(45.7%)	233(23.3%)	161(16.1%)	Required
6	Copying and pasting skills	287(28.7%)	444(44.4%)	109(10.9%)	160(16.0%)	Required
	TOTAL	1994 (33.23%)	2581 (43.01%)	992 (16.53%)	465 (7.8%)	Required

HR-Highly required; R-required; SR-Somehow required and NR-Not required; (Source: field work 2022)

The result in Table 3 and Figure 3 showed the responses of the respondents to the skills required for the utilization of online learning platforms among teachers in universities. The result showed that 1994 responses of the respondents representing 33.23% showed that surfing, editing, internet connection, typing, downloading and copy and paste skills are highly required, 2581 responses representing 43.01% showed that the aforementioned are required for online resources platforms, 992 responses of the respondents representing 16.53% noted that there are somehow required while 465 responses of the respondents representing 7.8% noted that there are not required. Cumulatively, the result showed that 76.24% responses showed that surfing, editing, internet connection, typing, downloading and copy and paste skills are required while 23.76% responses noted that surfing, editing, internet connection, typing, downloading and copy and paste skills are not required. This implies that the skills mentioned above are required for online learning platforms among academic staff

4.4. Research question four

Table 4 Simple percentages analysis on the competences required by teachers for the utilization of online learning platforms

s/n	Items	SA	A	D	SD	Remarks
1	I access any material online at any time	143 (14.3%)	242 (24.2%)	421 (42.1%)	194 (19.4%)	Not agreed
2	I often download materials for my research work online	432 (43.2%)	254 (25.4%)	211 (21.1%)	103 (10.3%)	Agreed
3	I set my zoom facilities each time I want to attend an online conference	142 (14.2%)	102 (10.2%)	243 (24.3%)	513 (51.3%)	Not agreed
4	I have no knowledge of zoom technology at all	108 (10.8%)	132 (13.2%)	178 (17.8%)	582 (58.2%)	Not agreed
5	I have difficulties in attending virtual meetings because of ICT operation	142 (14.2%)	201 (20.1%)	232 (23.2%)	425 (42.5%)	Not agreed
6	I efficiently use my computer for almost all my academic activities in school	423 (42.3%)	242 (24.2%)	243 (24.3%)	92 (9.2%)	Agreed
7	I send and receive mails with my computer	523 (52.3%)	242 (24.2%)	121 (12.1%)	114 (11.4%)	Agreed

Total	1913 (27.32%)	1415 (20.21%)	1649 (23.56%)	2023 (28.9%)	Not agreed
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SA-strongly agreed; A-agreed; D-disagreed and SD-strongly disagreed; (Source: field work, 2022)

What are the competences required by teachers for the utilization of online learning platforms? The variable in the research question is competencies for the utilization of online learning platforms. To answer this research question, simple percentages and bar graphs were used and the result is presented in Table 4

The result in Table 4 and Figure 4 showed that 1913 responses of the respondents representing 27.32% strongly agreed that they have competencies required for the utilization of online learning platforms, 1415 responses representing 20.21% agreed that that they have competencies required for the utilization of online learning platforms, 1649 responses representing 23.56% disagreed that that they have competencies required for the utilization of online learning platforms while 2023 responses representing 28.90% strongly disagreed that they have competencies required for the utilization of online learning platforms. cumulatively, 47.53% responses of the respondents agreed that they have competencies required for the utilization of online learning platforms while 53.47% responses representing disagreed that they have competencies required for the utilization of online learning platforms. This implies that academic staff do not have the competences required for the utilization of online learning platforms in the study area.

4.5. Research question five

Table 5 Simple percentages analysis of the perceived challenges affecting academic staff from participating effectively in online learning platforms

s/n	Items	SA	A	D	SD	Remarks
1	Lack of internet facilities	245 (24.5%)	342 (34.2%)	251 (25.1%)	162 (16.2%)	Agreed
	Poor access to online resources	278 (27.8%)	532 (53.2%)	142 (14.2%)	48 (4.8%)	Agreed
	Inadequate data for surfing the net	342 (34.2%)	344 (34.4%)	134 (13.4%)	180 (18.0%)	Agreed
	Poor power supply	123 (12.3%)	108 (10.8%)	452 (45.2%)	317 (31.7%)	Disagreed
	Lack of internet enabled phones	452 (45.2%)	342 (34.2%)	105 (10.5%)	101 (10.1%)	Agreed
	Lack of sufficient school-based laptops	452 (45.2%)	238 (23.4%)	111 (11.1%)	204 (20.4%)	Agreed
	Financial constraints	422 (42.2%)	324 (32.4%)	98 (9.8%)	156 (15.6%)	Agreed
	Low level of knowledge of internet surfing	145 (14.5%)	172 (17.2%)	452 (45.2%)	231 (23.1%)	Disagreed
	Low motivation for research	542 (54.2%)	231 (23.1%)	19 (1.9%)	118 (11.8%)	Agreed
	Total	3001 (33.34%)	2633 (29.25)	1764 (19.6%)	1517 (16.85%)	Agreed

(Source :Field work, 2022)

What are the perceived challenges that could affect academic staff from participating effectively in online learning platforms in the post covid 19 era. The variable involved in this research question is the perceived challenges that could affect academic staff from participating effectively in online learning platforms. To answer this research question, simple percentages and bar graphs were used and the result is presented in Table 5.

The result in Table 5 and Figure 5 showed the responses of academic staff to the perceived challenges affecting academic staff from participating effectively in online learning platforms. The result showed that 3001 responses of the respondents representing 33.34% strongly agreed that lack of internet facilities, inadequate data, poor access to online resources among other are the perceived factors that could affect academic staff from participating effectively in online learning platforms, 2633 responses of the respondents representing 29.25% agreed to the items, 1964 responses of the respondents representing 19.6% disagreed while 1517 responses of the respondents representing 16.85% strongly disagreed that lack of internet facilities, inadequate data, poor access to online resources among other are the perceived factors that affect academic staff from participating effectively in online learning platforms. Cumulatively, 62.59% responses of the respondents agreed that lack of internet facilities, inadequate data, poor access to online resources among other are the perceived factors that affect academic staff from participating effectively in online learning platforms while 37.41% responses of the respondents disagreed to it. This implies that lack of internet facilities among other mentioned in the scale are perceived challenging to the utilization of online learning platforms among academic staff

4.6. Hypothesis testing

4.6.1. Hypothesis one

The level of awareness of students on the use of the online learning resources is not significantly high. The main variable in this hypothesis is awareness of students on the use of the online learning resources, measured continuously. To test this hypothesis, one sample t-test was used and the result is presented in Table 6

Table 6 One sample t-test of the level of awareness of students on the use of the online learning resources

Variable	N	Mean	SD	Population Mean	df	t-cal	p-val
level of awareness of online learning resources	2000	15.80	5.09	23.44	1999	-11.54	.000

The result as presented in Table 6 showed that ($t=-11.54, p<.05$). Since $p(.000)$ is less than $p(.05)$, this implies that students awareness on the use of the online learning resources is significantly high. Thus, the null hypothesis is rejected, and the alternate hypothesis upheld

4.6.2. Hypothesis two

There is no significant difference between the skills required by academic staff and their utilization of online learning platforms. This main variable in this hypothesis is utilization of online learning platforms among academic staff, measured continuously. To test this hypothesis, one sample t-test was used, and the result is presented in Table 7

The result as presented in Table 6 showed that ($t=13.72^*, p<.05$). Since $p(.000)$ is greater than $p(.05)$, this implies that skills required by academic staff for the utilization of online learning platforms is significantly high. Thus, the null hypothesis is rejected, and the alternate hypothesis retained.

Table 7 One sample t-test of the skills required by academic staff for the utilization of online learning platforms among teachers

Variable	N	Mean	SD	Population Mean	Df	t-cal	p-val
skills possessed for the utilization of online learning platforms	1000	18.89	5.09	15.0	999	13.72*	.000

*=significant at .05 level

4.6.3. Hypothesis three

The competence possessed by academic staff in the utilization of online learning platforms is not significantly high. To test this hypothesis, one sample t-test was used and the result is presented in Table 8

Table 8 One sample t-test of the competences possessed by academic staff in the utilization of online learning platforms

Variable	N	Mean	SD	Population Mean	Df	t-cal	p-val
competences possessed for the utilisation of utilization of online learning platforms	1000	17.05	5.09	17.5	999	-1.38	.654

The result as presented in Table 8 showed that ($t=-1.38, p>.05$). Since $p(.654)$ is greater than $p(.000)$, this implies that skills competences possessed by academic staff in the utilization of online learning platforms is not significantly high. Thus, the null hypothesis is retained and the alternate hypothesis rejected

5. Discussion

The results of the findings were analysed using simple percentages, bar graph and one sample t test and the results are shown below:

5.1. Research question one

What is the level of awareness of students on the use of the online learning resources? From the result in table one figure one, it reveals that students are aware of online learning resources and are able to use them, judging from the responses of the respondents. Cumulatively 57.89 % responses of the respondents showed that they are aware of the use of online learning resources. This implies that majority of the students are aware of the utilization of online learning resources in the study area. This study contradicts the study carried out by Shetty, Shilpha, Dey and Kavya, (2020) who investigated student's perception and attitude towards online learning during the covid-19 pandemic and found that majority of students had never experienced any form of e-learning. Also the findings collaborates the findings of Almahasees, Mohsen and Amin (2021) in their study on Faculty and Students' perceptions of online learning during COVID-19. The result of the analysis showed that the common online platforms in Jordan were Zoom, Microsoft Teams and WhatsApp which are used for communication with students outside the class. However, a small percentage of respondents noted that they are not aware of some of the online learning platform with a cumulative response of 42.11% responses rate showing that they are not aware of the use of online learning resources.

Hypothesis One

The level of awareness of students on the use of the online learning resources is not significantly high. The result as presented in Table 7 showed that Since $p(.000)$ is less than $p(.05)$, this implies that students awareness on the use of the online learning resources is significantly high. Thus, the null hypothesis is rejected, and the alternate hypothesis upheld

5.1.1. Research Question Two

What are the perceived challenges that could affect student's utilization of online learning resources? The result gotten from the bar graph and the simple percentage analysis, it was revealed that majority of the responses strongly agreed that lack of internet facilities, internet enabled phones, poor power supply, lack of sufficient school based laptops, low level of internet surfing, inadequate data, poor access to online resources among others are seen to be the perceived factors that could affects academic staff from participating effectively in online learning platforms. This study agrees with the study of Demuyakor (2020) and Shetty, Shilpha, Dey and Kavya (2020) who both identified technical issues and lack of socialization and social media technology related issues as challenges faced by students. Also the findings corroborates with the findings of Barbu, Popescu and Moiceanu, (2022) who outlined some challenge of coping with e-learning, for teachers and students alike to include; lack of personal communication and face-to-face interaction that gives students the motivation to bond well. However, a few respondents disagree and strongly disagree that the above factors does not affect them. Based on the findings it can be said that majority of the students face varied challenges that hindered them from using the online learning resources.

5.1.2. Research Question Three

What are the skills posed by academic staff for the utilization of online learning platforms? Based on the result from the bar graph and simple percentage, the result showed that academic staff in the institutions under study require surfing, editing, internet connection, typing, downloading and copy and paste skills to be able to run the online learning perfectly. Hence, the study is in tandem with the study of Karagul, Seker and Aykut, (2021) whose finding revealed that

both lecturers and students are knowledgeable in their digital literacy levels. Thus, for anyone to do something he/she must first of all have the skills to do that which is required of him before it can be put to use. Hence, the result showed that lecturers in Cross River State have the skills required to be able to perform certain computer operations. Therefore, are able to use the online learning platforms if at all they asked to do so. This assertion confirmed the findings of Nwachukwu, et al, (2021) who observed that due to some hindrances in the Nigerian educational sector, there are obvious and reluctant attempts that encourage reliance on the traditional pedagogy in educational process despite the emergence of technology.

Hypotheses two

There is no significant difference between the skills required by academic staff and their utilization of online learning platforms. From the result in table 7 it can be deduced that skills required by academic staff for the utilization of online learning platforms is significantly high. This means that academic staffs in these institutions are well vast with the knowledge and skills of Information and Communication Technology (ICT) this findings agrees with the findings of Karagul, Seker and Aykut, (2021) as they explicably explained that the literacy level of staff and students are significantly high.

5.1.3. Research question four

What are the competences required by lecturers for the utilization of online learning platforms?

From the results in the simple percentage table and the bar graph shows that academic staff are not competent in the use of online learning resources. Cumulatively, 47.53% responses of the respondents agreed that they have competences required for the utilization of online learning platforms while 53.47% responses of the respondents disagreed that they have competences required for the utilization of online learning platforms. This implies that academic staffs in Cross River State do not have the competences required for the utilization of online learning platforms. This means that although lecturers have the skills, they do not have the competence to effectively run the online learning resources. This however means that, even though they have the skills they still need to undergo some training in order to be efficient in carrying out their tasks. This study contradicts the study of Karagul, Seker and Aykut, (2021) whose findings revealed that there is no significant difference between the variables under study, and all the groups showed that their digital literacy levels were high. The authors noted that, students and staffs were already aware and have knowledge of information technology before the COVID-19 pandemic, and e-learning for them, was a near-perfect fit.

Hypothesis three

The competence possessed by academic staff in the utilization of online learning platforms is not significantly high.

The result as presented in Table 8 revealed that competence possessed by academic staff in the utilization of online learning platforms is not significantly high. Thus, the null hypothesis is retained and the alternate hypothesis rejected. This means that academic staffs in tertiary institutions in Cross River State do not have the competence in using the online learning platforms to carry out their educational activities

5.2. Research question five

What are the perceived challenges that could affect academic staff from participating effectively in online learning platforms in the post covid 19 era. The result in table 5 figure 5 showed that academic staff in Cross River State faced challenges as they use online learning resources in the study area. Cumulatively, 62.59 % responses of the respondents agreed that lack of internet facilities, inadequate data, poor access to online resources among other are the perceived factors that affects academic staff from participating effectively in online learning platforms while 37.41% responses of the respondents disagreed to it. This implies that lack of internet facilities among other mentioned in the scale are perceived challenging to the utilization of online leaning platforms among academic staff. Based on the results it was revealed that lecturers faced various problems ranging from lack of internet facilities to financial constraints in the use of online learning resources. This study collaborate the study of Nwachukwu, Ugwu, and Wogu, (2021) whose findings revealed public universities are not good enough for full implementation of digital learning due to the fact that they lack technological infrastructures and internet facilities to effectively run the online learning. Also, the findings confirms the findings of Barbu, Popescu and Moiceanu, (2022) who outlined the challenge of coping with e-learning, for teachers and students to include; lack of personal communication and face-to-face interaction among others.

Research question six: How ready is management towards deploying online learning platforms?

From the interviews conducted it was observed that a few tertiary institutions in the state were able to introduce and deploy virtual learning in their schools. However the implementation was not a success due to the fact that most of the academic staffs were reluctant and resistant in the use of online learning resources. The interview sessions also revealed that majority of the students do not have android. Thus it made the implementation of virtual learning in these institutions very challenging. Below are some of the extracts from the interview sessions.

“Yes, we were able to introduce virtual learning during the Covid-19 Pandemic. However, we took a much different approach to virtual learning. The truth is that most universities in Nigeria do not (and still do not) have the technological and manpower resources for virtual learning. The on-going industrial strike action by Asuu is a clear pointer that funding is a huge problem in Nigeria’s universities, and there are gaps that in investment in the technologies of teaching, Internet and ICT. Besides this, the reality is also that many Nigerian academics have little or no ICT skills required to perform their duties virtually. Many have no computers, most do not have requisite ICT skills at all, and Internet access is abysmal at both the universities’ level and the individual academic staff level. Since we are a multi-campus university, our challenges are even more than what single campus universities have, because we need to connect four campuses in a virtual learning situation. From this background of the lack of resources and paucity of funds, we developed a Short Term Modality (STM) for virtual learning, as against the regular long-term modality that requires heavy funding. The objective of this framework was to develop a doable, affordable short term modality for virtual learning, while we planned ahead for a longer-term infrastructure. The short term modality depended on a combination of social media tools already familiar to staff and students, such as WhatsApp, Telegram and Zoom, built around a superstructure of Study Rooms created on the university website. While the social media platforms were for student-teacher engagements, the Study Rooms reflected the Faculties, Departments, programmes and classes. Each Study Room on the website contained study materials specific to each class. This Short Term Modality enabled us to do virtual learning in its cheapest and most affordable way, using social media and internet skills already familiar to staff and students. Basically, there was no need to either teach new skills to staff and students, or to buy expensive ICT equipment, tools and installations. We just used the staff and students’ own mobile handsets and social media Apps for the purposes. From this Short Term Modality (STM), we hope to scale-up, modify and transform into more permanent capacities for hybrid learning, compatible with emerging opportunities that the post-pandemic’s “new normal” will bring, in terms of remote learning, remote working and remote research” (anonymous, 2022)

On the area of the challenges or obstacles that hindered the virtual learning implementation, from the management point of view, the following responses were given; “we did commence virtual learning. But there were issues arising from it, because many staff did not have capacity for Internet use, and were very resistant to using the virtual processes we developed”. “We do not have the structures to run online learning”. “We don’t have fund to run online learning”. “We do not have the resources to run the online learning”. “Many staff and students do not have internet friendly phones these hindered our implementation of the online learning”. “We do not have the internet facilities that will enable us implement online learning”. From the comments gathered from management staff on the challenges that may affect online learning, it can be deduced that lack of internet facilities, lack of funds, high-speed internet facilities among others were the major challenges faced by management in deploying virtual learning in their schools. Another challenge they envisage is that both the staff and students did not undergo any training that will equip them to effectively participate in the online learning.

The management staffs were asked if they are still deploying the virtual learning after the pandemic. They all said “No”, we are no longer deploying the virtual learning process. And these were their reasons; “We discontinued because the pandemic is now generally under control, and we are planning to deploy more robust capacities for hybrid learning, remote learning, remote working and remote research. We plan to be able to admit and train students who may be remote and not even be on our Campuses. However, they agreed that there is possibility for them to revisit online learning in the future. “We plan online, virtual, hybrid and other forms of teaching and learning. As a multi-campus university, we do not have a choice, but to establish a robust virtual learning platform to network and harmonize the teaching and learning processes in our four Campuses”.

5.3. Summary of findings

The following are the findings of this study

- Majority of the students are aware of the utilization of online learning resources in the study area
- Lack of internet facilities, lack of internet enabled phones, among others are the perceived challenges that hinders students’ utilization of online learning resources
- Academic staffs require skills to effectively use the online learning platforms

- Academic staffs do not have the competences required for the utilization of online learning platforms in the study area
- Lack of internet facilities among others mentioned in the scale are perceived challenging to the utilization of online learning platforms among academic staff
- The results from the interview sessions with management revealed that, majority of the management staff are ready to accept virtual learning in their institutions

6. Conclusion

In an attempt to ensure continuity in education, the vice chancellors and Heads of schools of some institutions in the area under study did proposed online learning to academic staff and students but the implementation was never carried out maybe because the initial shock and the panic has passed, or because people have started to live a normal life. However, now is a good time to reconsider how to prepare, plan and invest time and resources in building our online learning platforms. Should there be a reoccurrence the government and people of Cross River State would have been fully prepared. Online learning is a global development hence, tertiary institutions in Nigeria as a whole and Cross River State in particular must embrace the digital world fully in order to meet up with the rest of the world.

Recommendation

- Staff and students should be trained on how to use the online learning resources for educational purpose
- Tertiary institutions in the state should as a matter of urgency incorporate and enforce online learning in their policies and programmes.
- Government should support the various institutions to invest on internet facilities as well as create a conducive environment for effective online learning delivery.

Compliance with ethical standards

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Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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