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Awareness, Perceptions and Challenges of E-Learning among Faculty of Science Undergraduates of Federal University Oye-Ekiti, Nigeria

Olabode OLAJIDE, PhD (CLN)
College of Medicine Library, Federal University Oye-Ekiti
olabode.olajide@fuoye.edu.ng

Rotimi James OMOLEHIN
University Library, Federal University Oye-Ekiti - Library,
james.omolehin@fuoye.edu.ng

OzimedeZuwelatu ANYAKORAH
University Library, Federal University Oye-Ekiti - Library,
zuwelatu.salisu@fuoye.edu.ng

Funmilola Adeola OJO
University Library, Federal University Oye-Ekiti - Library,
funmilola.ojo@fuoye.edu.ng

Abstract

This study examined awareness, perceptions and challenges of e-learning among FUOYE undergraduates during the 2023 general election break in Nigeria.The descriptive survey research design was adopted for this study. All Faculty of Science undergraduates, FUOYEformed the population of the study. A structured questionnaire was made available to students via Google Forms. A total of 370 respondents responded to the questionnaire.Data werearranged and analysed using quantitative analysis to generate frequencies and percentages, and presented in the form of charts and tables.The findings of this study revealed that majority of the students were highly and very highly aware of only two (WhatsApp and Telegram) e-learning platforms out of nine identified e-platforms. Findings also revealed that as some students have favourable perceptions towards e-learning platforms, so some were still indifferent to e-learning.Findings further revealed that majority of Faculty of Science undergraduates, FUOYE encountered myriad of challenges that hindered them from using e-learning platform. By implications, this study is worthwhile in providing a platform for university management to resolve the challenges hindering students from using e-learning platforms for academic purposes, and equally have reasons why e-learning platforms must be fully adopted in teaching and learning activities among undergraduates.

Keywords: Awareness, Perception, Challenges, E–learning Platforms, Election Break, Nigeria

Introduction

In an attempt to prevent disruption of academic calendar occasioned by the 2023 generalelection break, Federal University Oye-Ekiti (FUOYE), Nigeria introduced e-learning to teach students during the break, since face to face physical class cannot be achieved. E-learning, according to Maatukl, Elberkawi1, Aljawarneh, Rashaideh&·Alharbi, (2022), is the formal teaching and learning system with the aid of electronic resources.E-learning allows teaching to take place both inside and/or outside the classrooms, and the use of computer technologies and the Internet is the main component of e-learning (Aboagye, Yawson& Appiah, 2020).Succinctly, digital learning, interactive learning, web-based education, computer-assisted teaching and internet-based learning are known as e-learning (Aljawarneh, 2020).The traditional face to face teaching method was put on hold during the 2023 elections because holiday was declared by Federal Government (Suleiman, 2023), and students were asked to vacate the campus. Despite the challenges associated with e-learning, as shown by research that students are less likely to benefit from this type (e-learning) of education (Lizcano, Lara &White, 2020), FUOYE management considered e-learning as the best option available to ensure the smooth and uninterrupted academic calendar, that may likely be disrupted by the election break.

E-learning has assumed a very prominent and vital role in the present educational system, particularly during the COVID-19, when the whole world was shut down as a result of communicable virus (Kutu, Olajide& Kutu, 2022). As attested to by Maatuk1, Elberkawi1, Aljawarneh,Rashaideh&·Alharbi (2022), most students are now showing interest in e-learning and want to study online and graduate from tertiary institutions around the world.However, their lofty ideas could not be achieved because of isolated places without good internet services they reside.With e-learning, life, time and efforts of students living in farplaces from their universities where they are registered for academic activities can be saved, as there would not be need of frequent travelling for attending physical class. Further, various scholars also support e-learning as it helps ensure that learning can be easily managed, and the learner can easily access the teachers and teaching materials (Mukhtar,Javed, Arooj&Sethi, 2020). Also, e-learning reducesdrasticallymost of the expenses that accompany traditionallearning. In spite of the enormousadvantages of e-learning, there are still challenges associated with it. For example, absence of personal interactions between students and lecturers as well as among the students themselves (Somayeh, Dehghani,Mozaffari, Ghasemnegad, Hakimi&Samaneh, 2016), poor internet connection, insufficient knowledgeabout the use of information and communication technology, etc. However, among the challenges of e-learning, assumptions were rife thatstudentscannot acquire deep knowledge in practical science oriented courses that require physical involvement.It is in this view, this study investigates awareness, perceptions and challenges of e-learning among Faculty of Science undergraduates of FUOYE by extrapolating theirawareness, perceptions and challenges of e-learning during the 2023 election break.Although, numerous studies on awareness, perception and challenges of e-learning have been conducted, however, there is dearth of literature on awareness, perception and challenges of e-learning among undergraduates, particularlyduring the strike/holiday/election break in Nigeria. This current study outstandingly explores this research gap.

Research questions

To achieve the objectivesof this study, the following research questions guided the study:

1. What is the level of awareness of e-learning platforms among Faculty of Science undergraduates, FUOYE?
2. What is/are perception/s of e-learning platforms among Faculty of Science undergraduates, FUOYE?
3. What is/are the challenges that hindered Faculty of Science undergraduates, FUOYE from e-learning?

Literature Review

E-learning is any form of learning that involves any of digital learning, interactive learning, web-based education, computer-assisted teaching and/or internet-based learning. According toDhawan (2020), e-learning is no longer an option but a necessity, as online modeof learning (e-learning) is easily accessible at different places (both rural and remote areas) at the same time by many users.

Copious studies have been conducted on awareness, perceptions, possibilities and challenges of e-learning. For example,Oludare, Moradeke &Kolawole (2012) investigated how e-learning could be more effective in the educational field and the advantages of using e-learning. The study revealed that the students were willing to learn more with less social communicationwith other students or lecturers. Likewise,Olayemi, Adamu & Olayemi (2021) conducted a study on perception and readiness of students towards online learning in Nigeria during Covid-19 pandemic, and revealed that the majority of the respondents were conversant with online learning with a high level of readiness to accept its adoption. The study further revealed that fear of high cost of data, poor internet services, erratic power supply, inaccessibility to online library resources and limited access to computer as the major perceived challenges to effective online learning.Similarly, Madu, Aboyade & Ajayi's (2022) study awareness, perceptions and challenges of e-learning among students during COVID-19 lockdown in Nigeria revealed that majority of students were aware of up to six different e-learning platforms that could be adopted for teaching and learning, and that e-learning is "favourably perceived as an easy and simple means of providing better learning experience in a flexible and personalised manner that enhanced understanding of course contents and facilitate communication in a cost effective means".

Further, in a study (Gillett-Swan, 2017) that investigates the challenges of online learningsupporting and engaging the isolated learner, findings revealed several challenges of e-learning (such as low levels of technological competency and proficiency), and concluded by recommending that learner involvement duringplanning and implementation of learning activities

online. Coman, Tiru, Mesesan-Schmitz, Stanciu, &Bularca (2020) conducted a study on students' perspective about online teaching and learning in higher education during the Coronavirus pandemic. The findings revealed technical issues, lack of interaction with teachers or poor communication with them as the challenges experienced during online teaching and learning. Also, in 2017, separate studies by Nyagorme, Qua-Enoo, Bervell &Arkorful andGayan& Daswere conducted on the awareness, perception and use of electronic learning platforms. The findings revealed that participantshad a positive perception of e-learning and its adoption, know and aware of e-learning and e-learning platforms but lacked adequate training on e-learning usage. The findings further revealed low computer literacy, lack of adequate ICT laboratories and reliable internet as major challenges hindering e-learning adoption. Similarly, Mahajan1 and Kalpana (2018) conducted a study of students' perception about e-learning, and revealed that majority of students were aware and have ideas of e-learning. The study concluded by recommendingblogging, online discussions, online submission of home work, and video assisted training as a way of improving e-learning among students.

In the same vein, a study investigated student challenges about how to deal with e-learning in the outbreak of COVID-19 and to examine whether students are prepared to study online or not is presented in (Aboagye, Yawson& Appiah, 2020). The study established that a blended approach that combines traditional and e-teaching must be available for learners. Equally, Binshehah&Inglea(2021) conducted a study onperception for online learning among undergraduateand postgraduate dental students during COVID-19 pandemic. From the studies, findings revealed that the majority of the students found online classes to be helpful as it is easy to access the site and find their way around the course. Findings also revealed that half ofthe students preferred blended learning(i.e. combination of traditional lectures & Web CT) type of teaching method. Majority of the students agreed that online course is timesaving and will help with revision for exams, as they would email tutor if they need help.Also, a study explored the e-learning process among students who are familiar with web-based technology to advance their self-study skills is described in (Radha, Mahalakshmi, Sathish, &Saravanakumar, 2020). The study's findings showed that e-learning has become popular among students in all educational institutions in the period of lockdown due to the COVID-19 pandemic. In a recent development, Kutu, Olajide & Kutu (2022) conducted a study on "awareness, accessibility and challenges of social media as experienced by postgraduate Information Studies Students, University of KwaZulu-Natal during the COVID-19 pandemics lockdown", and revealed that; Facebook, Instagram, Zoom, Twitter and WhatsApp) as major platforms available for students e-learning activities, and smartphone was a major tool and challenges restraining students from effectively utilising social media for e-learning activities.

In conclusion, from the reviewed literature, it can be inferred that students had positive perception of e-learning (Nyagorme, Qua-Enoo, Bervell&Arkorful, 2017) and they are aware of different e-learning platforms (Gayan& Das, 2017) and associated challenges (Kutu, Olajide& Kutu, 2022; Oludare, Moradeke&Kolawole, 2012; Radha, Mahalakshmi, Sathish, &Saravanakumar, 2020), though, with proper and adequate planning these challenges are not insurmountable. However,

much study has not been carried out on awareness, perceptions and challenges of e-learning among FUOYE undergraduates, particularly among students offering practical science based courses. The gap this study seeks to fill.

Methodology

The study adopted a survey research design. A structured questionnaire was designed to collect quantitative data. This type of research method is centred on proper analyses, interpretation, comparisons, identification of trends and relationships, which provides information useful to the solutions of local problems - issues (Salaria, 2012).The research population was 7,783, and consisted of Faculty of Science undergraduates, FUOYE as shown in Table 1. This faculty was purposively selected because it offered practical science courses to students across 100 Level (first year) to 400 Level (fourth year) during the break.A structured questionnaire was made available to students via Google Forms (https://forms.gle/xToo5WocPd5pkcF6j6). Using this approach, the undergraduate students who were targeted received a message (either via Telegram or WhatsApp group platforms) with a link to the Web-based questionnaire, which was compatible with mobile devices. This approach helped the researchers to be able to reach students via their WhatsApp and Telegram group platforms. The total number of 340 students responded to the questionnaire.The data obtained through the research instrument were arranged and analysed using quantitative analysis. Prior to analysing the raw data, each completed questionnaire via the web was downloaded and checked for missing data, ambiguity, omissions and errors. The data from each of the questionnaire were input into an Excel spreadsheet, and charts and tables were generated. Thus, the analysed data (the findings) were presented in the form of tables and figures, and were expressed as frequency counts and percentages.

Table 1: Study Population: Faculty of Science Undergraduates (2022/2023 session)

Level of Education	**Number of Students**
100 Level (first year)	2649
200 Level (second year)	1828
300 Level (third year)	2029
400 Level (fourth year)	1277
Total	**7783**

Data Analysis and Presentation of Findings

The findings of the study derived from the questionnaire are presented under two sections (A and B). In section A, demographic information of the respondents is presented, while section B presentsdata gathered from the three research questions for the study.

Section A: Demographic information
The students' demographic information such as gender and level of education is presented in this section.

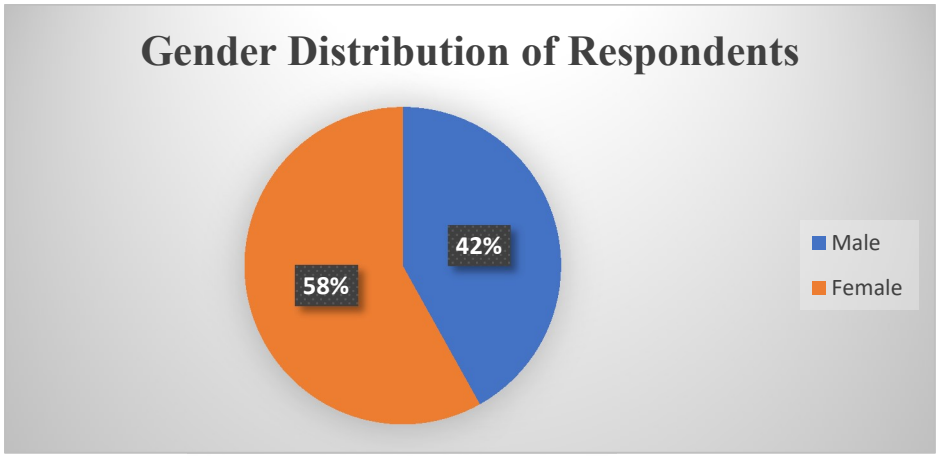

Figure 1: Gender distribution of Respondents

Gender distribution of Respondents
From Figure 1, it shows there were more female215 (58%) than male 155 (42%) students.

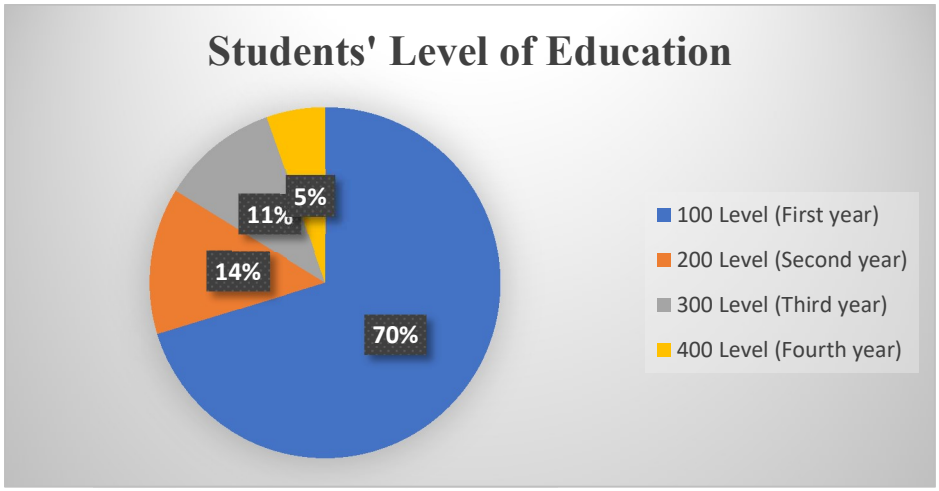

Figure 2: Respondents'Level of education

Respondents' Level of education
Figure 2 shows the respondents level of education. In the Figure, it shows that 70% of the respondents were in 100 Level (first year), 14% were in 200 Level (second year), 11% were in 300 Level (third year), while 5% were in 400 Level (fourth year).

Section B: Answering the Research Questions
Data gathered from the three research questions for the study are presented in this section.

Research Question One: What is the level of awareness of e-learning platforms among FUOYE undergraduate science students?

Table 2: Level of awareness of e-learning platforms

S/N	E-learning platforms	Very High Extent	High Extent	Low Extent	Very Low Extent
1	WhatsApp	185 (50%)	125 (33.8%)	35 (9.5%)	25 (6.8%)
2	Google Classroom	70 (18.9%)	110 (29.7%)	135 (36.5%)	55 (14.9%)
3	Google Forms	50 (13.5%)	120 (32.4%)	130 (35.1%)	70 (18.9%)
4	Zoom	55 (14.9%)	105 (28.4%)	140 (37.8%)	70 (18.9%)
5	Microsoft Teams	55 (14.9%)	90 (24.3%)	125 (33.8%)	100 (27%)
6	LinkedIn learning	40 (10.8%)	100 (27%)	135 (36.5%)	95 (25.7%)
7	Telegram	150 (40.5%)	150 (40.5%)	50 (13.5%)	20 (5.4%)
8	Twitter	5 (1.4%)	45 (12.2%)	140 (37.8%)	180 (48.7%)
9	Google Meet	5 (1.4%)	20 (5.4%)	225 (60.8%)	120 (32.4%)

Level of Awareness of E-learning Platforms
Table 2 presents the level of awareness of e-learning platforms among FUOYE undergraduate science students. From the analysis of the data, it shows that majority of the respondents were not highly aware of Google Classroom, Google Forms, Zoom, LinkedIn learning,Microsoft Teams, Twitter and Google meet as e-learning platforms. However, the only e-learning platforms the respondents were at least highly aware of are WhatsApp (83%), and Telegram (81%). Only 4.2% respondents indicated they were aware of other e-learning platforms such as; Chrome, Skype, etc. in general, it could be deduced that majority of the respondent were only aware of very few e-learning platforms (WhatsApp and Telegram) for teaching science.

Research Question Two: What is/are perception/s of e-learning platforms among FUOYE undergraduate science students?

Table 3: Students' Perceptions of E-learning

S/N	Perceptions	Strongly agree	Agree	Disagree	Strongly disagree
1	They provide better learning experience	80 (21.6%)	205 (55.4%)	75 (20.3%)	10 (2.7%)
2	Provide people with flexible and personal way to learn	55 (14.9%)	290 (73.4%)	15 (4.1%)	10 (2.7%)
3	Make learning more interesting	60 (16.2%)	240 (64.9%)	50 (13.5%)	20 (5.4%)
4	They enhance better understanding of course contents	40 (10.8%)	240 (64.9%)	80 (21.6%)	10 (2.7%)
5	Facilitate better communication with lectures	60 (16.2%)	215 (58.1%)	80 (21.6%)	15 (4.1%)
6	Course contents could be too theoretical with no emphasis on practical	55 (14.9%)	240 (64.9%)	55 (14.9%)	20 (5.4%)
7	Not compatible with science based courses	55 (14.9%)	175 (47.3%)	120 (32.3%)	20 (5.4%)
8	I prefer learning through e-learning platform to the traditional face to face teaching and learning	20 (5.4%)	145 (39.2%)	140 (37.8%)	75 (17.6%)
9	E-learning reduces cost of learning	55 (14.9%)	145 (39.2%)	120 (32.4%)	50 (13.5%)

Students' Perceptions of E-learning

Analysis of respondents' perception of e-learning platforms is presented in Table 3. From the analysis, majority of the respondents have favourable perceptions towards e-learning platforms. For example, not less than 77% respondents agreed that e-learning platforms provide better learning experience, at least 88.3% agreed e-learning platforms provide people with flexible and personal way to learn, at least 81.1% agreed e-learning makes learning more interesting, at least 75.7% agreed it enhances better understanding of course contents, at least 73.4% agreed e-learning platforms facilitatesbetter communication with lectures, while not less than 54.1% agreed that e-learning reduces cost of learning. However, some respondents were indifferent towards e-learning. For instance, not less than 55.4% of the respondents still prefer teaching and learning through traditional face to face to e-learning platforms, not less than 79.8% said course contents could be

too theoretical with no emphasis on practical, while at least 62.2% indicated that e-learning is not compatible with science based courses.

Research Question Three: What is/are the challenges that hindered FUOYE undergraduate science students from e-learning during the election break?

Table 4: Challenges that hindered e-learning during election break

S/N	Challenges	Strongly agree	Agree	Disagree	Strongly disagree
1	Inadequate e-learning facilities in the university	80 (21.6%)	170 (46%)	115 (31.1%)	5 (1.4%)
2	Poor internet connectivity	185 (50%)	155 (41.9%)	25 (6.8%)	5 (1.4%)
3	I cannot concentrate while learning through e-learning platforms	85 (23%)	105 (28.4)	170 46%)	10 (2.7%)
4	Insufficient digital skills	65 (17.6%)	165 (44.6%)	115 (31.1%)	25 (6.8%)
5	Lack of physical human contact discourages me from using e-learning platforms	45 (12.2%)	160 (43.2%)	145 (39.2%)	20 (5.4%)
6	Lack of phone/laptop to use for e-learning	60 (16.2%)	140 (37.8%)	135 (36.5%)	35 (9.5%)
7	I cannot afford high cost of data/internet subscription	120 (32.4%)	170 (46%)	55 (14.9%)	25 (6.8%)
8	Epileptic power supply	115 (31.1%)	190 (51.4%)	45 (12.2%)	20 (5.4%)
9	Lack of orientation on the modalities for using e-learning platforms	50 (13.5%)	185 (50%)	110 (29.7%)	25 (6.8%)
10	The University does not encourage using e-learning platforms	45 (12.2%)	105 (28.4%)	190 (51.4%)	30 (8.1%)

Challenges that hindered E-learning during Election Break

Table 4 presents the challenges that hindered e-learning of FUOYE undergraduate science students during the election break. From the analysis, at least 67.6% respondents agreed that e-learning was hindered as a result of inadequate e-learning facilities in the university, not less than 91.9% respondents agreed that poor internet hindered them from e-learning, not less than 62.2% agreed that insufficient digital skills debarred them from e-learning, at least 55.4% agreed that lack of physical human contact discouraged them from using e-learning platforms, at least 54% agreed that lack of phone/laptop to use for e-learning hindered them, not less than 78% agreed that high cost of data/internet subscription hindered them from e-learning, at least 82.5% agreed that epileptic power supply hindered them, not less than 63.5% agreed that lack of orientation on the modalities for using e-learning platforms serves as hindrance to e-learning, while only less than

half (40.6%) agreed that non-encouragement by the University to use e-learning platforms was the challenge they experienced in e-learning during the election break.

Discussion of findings

From findings, it shows there were more female (58%) than male (42%) students. Though, the percentage of students' enrolment in science and technology based courses in Nigerian Universities indicates that females occupy the lower proportion in all the disciplines, in terms of general development, there is a definite increase in the number of girls enrolled in science and technology based courses (Nigeria. National Bureau of Statistics, 2018). Also, majority of the students were in 100 Level (first year).

From the findings, it is revealed that majority of Faculty of Science undergraduates, FUOYE were not highly aware of Google Classroom, Google forms, Zoom, LinkedIn learning, Microsoft Teams, Twitter and Google Meet as e-learning platforms. However, the only e-learning platforms the respondents were at least highly aware of are WhatsApp (83%), and Telegram (81%). Only 4.2% respondents indicated they were aware of other e-learning platforms such as; Chrome, Skype, etc.The result of the analysis of awareness of e-learning platforms among Faculty of Science undergraduates, FUOYE during election break showed that majority of the students were highly and very highly aware of only two (WhatsApp and Telegram) e-learning platforms out of nine identified e-platforms. This is contrary to Madu, Aboyade&Ajayi's (2022) study which revealed that majority of students were aware of more than six different e-learning platforms that could be adopted for teaching and learning.

From the findings, it is revealed that majority of Faculty of Science undergraduates, FUOYE have favourable perceptions towards e-learning platforms. For example, not less than 77% respondents agreed that e-learning platforms provide better learning experience, at least 88.3% agreed e-learning platforms provide people with flexible and personal way to learn, at least 81.1% agreed e-learning makes learning more interesting, at least 75.7% agreed it enhances better understanding of course contents, at least 73.4% agreed e-learning platforms facilitates better communication with lecturers, while not less than 54.1% agreed that e-learning reduces cost of learning. However, some respondents were indifferent towards e-learning. For instance, not less than 55.4% of the respondents still prefer teaching and learning through traditional face to face to e-learning platforms, not less than 79.8% said course contents could be too theoretical with no emphasis on practical, while at least 62.2% indicated that e-learning is not compatible with science based courses. From the analysis, it could be concluded students have favourable perceptions towards e-learning platforms. Disappointedly, majority were still indifferent to e-learning as some (79.8%) raised concern that course contents could be too theoretical with no emphasis on practical, some (55.4%) still prefer teaching and learning through traditional face to face to e-learning, while some (62.2%) said e-learning is not compatible with science based courses. This is contrary to findings of different studies conducted by Nyagorme, Qua-Enoo, Bervell and Arkorful (2017), Gayan and Das (2017) and Madu, Aboyade and Ajayi's (2022) study which revealed that e-learning is "favourably perceived as an easy and simple means of providing better learning experience in a

flexible and personalised manner that enhanced understanding of course contents and facilitate communication in a cost effective means" in 21st century.

From the findings, it is revealed that majority of Faculty of Science undergraduates agreed that myriad challenges (such as: inadequate e-learning facilities in the university, poor internet; insufficient digital skills; lack of physical human contact; lack of phone/laptop to use for e-learning; high cost of data/internet subscription epileptic power supply; lack of orientation on the modalities for using e-learning platforms) hindered them from e-learning during the election break. From the findings, it could be inferred that majority of Faculty of Science undergraduates encountered one challenge or the other in using e-learning platforms during the election break. The challenges such as; insufficient digital skills, lack of physical human contact discouraged them from using e-learning platforms, high cost of data/internet subscription, lack of orientation on the modalities for using e-learning platforms among others. This is in tandem with the findings of Gillett-Swan (2017) and Coman,Tiru, Mesesan-Schmitz, Stanciu and Bularca (2020) which revealed several challenges of e-learning as; lack of interaction with teachers or poor communication with them, low levels of technological competency and proficiency.

Implications of this Research

This study is worthwhile in providing a platform for university management to resolve the challenges hindering students from using e-learning platforms for academic purposes, and equally have reasons why e-learning platforms must be fully adopted in teaching and learning activities among undergraduates. This is pertinent considering the incessant strike and holidays that usually interrupt academic calendar in Nigerian universities, and teaching, learning and research activities must not be jeopardised because of incessant holidays. Besides, this study would equip students and lecturers to reconsider their orientation and traditional approaches to teaching and learning, and instead lay more emphasis on holistic adoption of e-learning in discharging their academic activities.

Conclusion and recommendations

This study addressed the issue of awareness, perception and challenges of e-learning among FUOYE undergraduates during the 2023 election break in Nigeria. E-learning is no longer an option but a necessity, as online mode of learning (e-learning) is easily accessible at different places (both rural and remote areas) at the same time by many users.Given this and in light of the main findings as revealed in this study, the following specific conclusions are made:

1. Majority of the students were highly and very highly aware of only two (WhatsApp and Telegram) e-learning platforms out of nine identified e-platforms.
2. Some students have favourable perceptions towards e-learning platforms. Conversely, majority were still indifferent to e-learning as some (79.8%) raised concern that course contents could be too theoretical with no emphasis on practical, some (55.4%) still prefer teaching and learning

through traditional face to face to e-learning, while some (62.2%) said e-learning is not compatible with science based courses.

3. Finally, majority of Faculty of Science undergraduates, FUOYE encountered myriad of challenges that hindered them from using e-learning platforms during the election break.

Recommendations

The following recommendations are made based on the findings of this study:

1. Students should always be involved during planning and implementation of e-learning activities.
2. Indigent students should be provided with laptops/phone with internet (data) compatible with e-learning.
3. Management should improve on the adequacy of e-learning facilities in the university.
4. Training on acquisition of sufficient digital skills should be organised for students.
5. During orientation, students should be well informed of the modalities for using e-learning platforms. This will encourage them in buying to the idea of e-learning on time.

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