TEACHING AND LEARNING OF LIBRARY AND INFORMATION SCIENCE EDUCATION IN OPEN AND DISTANCE LEARNING USING ELECTRONIC PLATFORMS

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ABSTRACT

Educational institutions in Nigeria are mostly based on traditional methods of learning. In other words, focus is centered more on face to face process of teaching and learning. However, the recent outbreak of the deadly disease corona virus (COVID -19) globally has imposed a shift in teaching and learning approaches in many higher institutions globally especially in the developing countries. Hence, this study evaluated the impact of using electronic platforms in teaching and learning of LIS, the perception of LIS students towards the use of electronic platforms in learning

and the challenges students and lecturers face in teaching and learning LIS using electronic-learning platforms in National Open university of Nigeria. The survey design was adopted for this study. The population of this study comprises all 254 undergraduates and seven (7) lecturers in the Department of Library and information science in NOUN. The instrument used for data collection was a questionnaire. Descriptive statistics was used for analysis of the data. The study identified Zoom and WhatsApp as the electronic platforms used for teaching and learning. The findings revealed that electronic platforms were found to foster intercultural communication irrespective of time, allow teaching irrespective of location and space which came with some. Also, e-learning platforms are user-friendly and have provided flexibility to study at any time convenient to the students. The challenges associated with are poor network, excess workload on the facilitators and lack of ICT skills needed for participation and use of the electronic platform. The paper recommends that orientation of new staff should be carried out effectively, training of both staff and students, first and second year students must be made to study electronic learning content as a general course, availability of study packs at reasonable costs and virtual lectures.

Introduction

Electronic learning (e-learning), also known as online platforms and online learning, is not a new phenomenon. However, the outbreak of the COVID-19 pandemic brought to the forefront the need for e-learning and teaching. It does not mean students can do without their lecturers/facilitators; instead, it is a method used to augment and improve teaching and learning. E-learning occurs via the internet or other digital and electronic media/platforms. According to Lawn et al. (2017),e-learning comprises multimedia, webinars, web-based tutorials, interactive online modules, embedded quizzes, and discussion forums. This definition shows that electronic learning (e-learning) could be synchronous as well as asynchronous. Synchronous e-learning is a real-time class in which the learners and the instructors interact at the same place or location and at a given time. It can be through *Google Meet, Hangout, Skype, Zoom, Moodle*, and *WhatsApp*. Asynchronous e-learning, on the other hand, is self-motivated learning that does not need the instructors and the learners to be at the same place and at a given time. In this case, the learners determine where and when they want to learn without the presence of their lecturers or facilitators. Universities worldwide have been integrating this learning mode, especially open and distance learning (ODL) institutions. ICT help enhance the quality of interaction and the provisions of a wide range of information resources in ODL (Matthew & Iloanya, 2016).

Open and distance learning institutions, such as National Open University of Nigeria (NOUN), provide students with the privilege or opportunity to learn at their own space and time. NOUN was established in 1983 and was shut down by the military regime in 1984. National open university of Nigeria was closed in 1984 under the leadership of President Muhammadu Buhari because of some perceived problems in the educational sector such as declining academic standards, financial mismanagement and general educational reforms. It was later reopened

under the leadership of President Olusegun Obasanjo after most of the issues have been addressed and improved upon. National open university of Nigeria was a response to the dire need for a flexible and accessible education for adults (0kebukola, 2006). However, with the return of the civil government, it was resuscitated on April 12, 2001. Located at Plot 91, Jabi Abuja which has more than 87 study centres across Nigeria (Prospectus of the School of Graduate Studies, 2018). Its main vision is to provide flexible learning and quality education through more comprehensive coverage that exceeds all barriers. One way through which the university can achieve this vision is through electronic learning using online platforms.

As an ODL institution, NOUN offers synchronous and asynchronous e-learning via *Zoom, YouTube videos, Skype, WhatsApp, Google Meet, Moodle*, and *e-mail*. These media of instruction supplement the print-dominated mode of instructional delivery. However, many students prefer printed materials despite the benefits of online delivery modes. It thus seems that there are challenges in the use of electronic platforms in teaching and learning in this institution. Therefore, this study investigated electronic media's impact on delivering LIS education at NOUN.

Objectives of the Study

The study seeks to:

1. ascertain the perception of undergraduates about electronic platforms used in teaching and learning LIS at NOUN;
2. identify the electronic platforms used in teaching and learning of LIS at NOUN;
3. find out the impact of electronic platforms used in teaching and learning of LIS at NOUN; and
4. identify challenges associated with electronic platforms used in teaching and learning of LIS at NOUN.

Review of Related Literature

Electronic Platforms used in Teaching and Learning

Some of the e-learning platforms used in teaching by different nations during COVID-19, as stated by UNESCO (2021), include television, databases, radio channels**,** lesson recorded videos, and the Learning Management System platform. Other E-learning platforms used in teaching and learning, as listed by Ramadani and Xhaferi (2020), include *Viber or WhatsApp, ZOOM, Google Meet, Google Classroom, Slide Share*, and *Video Maker Platform*. Idiedoand Tralagba (2023) advocated the use of electronic learning platforms such as Google classroom, Moodle the administering of assignment, quiz and grading of examination. Ahmad (2022) listed the electronic platform use in teaching by most Nigerian lecturers to include Telegram, Zoom, *Google Meet*, *YouTube*, *Facebook*, and *WhatsApp*. Also, the introduction of World Wide Web (WWW) in 1991 necessitated the creation of platforms such as Facebook, Google Classroom, Google Doc, Dropbox, Viber, Zoom, Skype, Yahoo, Google hangout, Twitter, Google drive and others that are helping learners and educators to form online communities for sharing information (Sof-Karim et. al. 2023).

According Valencia-Arias et. al. (2019) cited in Alyoussef (2023) education platforms have undergone major change as a result of the growth of e-learning mechanisms in higher education institutions, with the emphasis now mostly on the students rather than the lecturers. Federal Ministry of Education (2023) realising the benefits of electronic platforms stated that e-Learning platforms should employ global standards for courseware development that provide interoperability and portability in the use of e-content.

Yusuf and Odutayo (2023) identified the electronic learning platforms used by undergraduate in universities in Kwara state, Nigeria during COVID-19 pandemic to include WhatsApp platform, Google Classroom, Google Meet, Moodle Learning Management System, and Telegram. The result showed that Edmodo, Microsoft Teams, Canvas LMS, and Socrative were not used by the students then. However, it was emphasised by Ramadani and Xhaferi (2020) that the *Zoom* platform makes teaching and learning easier and ensures interactions and expanded knowledge for teachers and learners. Also, Albayrak and Yildirim (2015) emphasized using social networks like *Skype, WhatsApp*, and *Facebook* as an electronic platform for teaching and learning because it promotes student participation in online class discussions and out-of-class communication among instructors and students. *YouTube* is also a vital platform for teaching the online class because it appeals to the student's attention, adds fun to the teaching and learning, creates motivation, and uplifts the educational learning environment (Pratama et al., 2020).

Perceptions of Undergraduates about Electronic Platforms used in Teaching and Learning

How undergraduates perceive the use of electronic learning (e-platforms) for teaching and learning will determine their level of satisfaction and rate of involvement in learning and academic performances. Also, the structure of the e-learning platforms and level of computer competence skills have a significant part to play in the perception of students on the use of electronic learning (e-platforms) in teaching and learning. Ahmed, Noor, Khan, Mehmood, Shaheen, and Fatima (2023) carried out a study on students' perception and acceptance of e-learning and e-evaluation in higher education. The study revealed that despite e-learning results in less social contact, lack of social presence and difficulties in communication harmonization, e-learning has a lot of positive sides in the sense that it is a powerful plat in case of emergencies such as the COVID 19 pandemic where students were unable to attend lectures in person and their academics were not disrupted. Sofi-Karim, Baliand Racheal (2023) did a study on online education via media platforms and applications as an innovative teaching method and discovered some challenges such as lack of electricity, lack of electronic devices and lack of required ICT skills for both students and teachers.

Zhu (2018) believed that computer literacy and learning styles of individuals are the vital predictors of technology acceptance by students and that e-learning provides space for deeper thinking and also aids the exchange of information, but only when educators understand how it would work and how students learn in the online environment. Still, students expect more natural and social interactions and instructors' participation. Invariably the findings of a study on Students'

Perception towards E-learning during the COVID-19 Pandemic in India: An Empirical Study. Sustainability reveals that e-learning is user-friendly, increases students' satisfaction, reduces the sense of isolation, motivates learning, improves students' performance, gives them access to their teachers and fellow students, eases access to information resources, and provides flexibility in study irrespective of space and time (Khan et al., 2021).

Also, Salloum et al. (2019) observed that most of the students in an online programme have their internet-enabled devices like mobile phones and personal computers and are satisfied with the mode of learning but stressed that the perceptions of the learners are affected by a number of factors such as age, gender, computer competence skills of the learner, individual learning styles and level of technology acceptance. Wingo et al. (2017), in support of these views, observed that even faculty perceptions of the use of e-learning platforms indicated that the platform is user-friendly, improves the overall teaching experience online, recognises faculty's needs and desires in their roles as instructors, and ensures mastering of skills in managing the Learning Management System (LMS), which increases satisfaction in online teaching. Although the faculty expressed that online teaching requires a time commitment and increases workload.

Impact of Using Electronic Platforms in Teaching and Learning

Electronic platforms in teaching and learning (e-learning) have a significant effect on teaching and learning in diverse ways. It has enhanced the possibility of communication between students and teachers using e-mail, enhances learning for students who have difficulty in concentrating and organising tasks, gives students immediate access to the information, stimulates their participation and interactions in lectures, increases knowledge and skills, and allows the learner to focus on essential ideas when compiling the lecture note. Similarly, it will enable everyone to learn at a time that suits them with ease of communication between these parties using discussion boards and e-mail and allows every student to express their opinion (Abed, 2019). Mathew and Iloanya (2016) listed the benefits of using the electronic platform in teaching and learning in open and learning institutions in Africa, including the interaction between students and instructors, students' participation, access to the latest information, content sharing, and communication.

Outlining the impact of using electronic platforms in teaching, Abed (2019) stressed that teachers are provided with various ways to access, build, distribute, and classify information. It increases the possibility of communication between students and teachers, saves the teacher's time, reduces the burdens of teaching each lecture, and allows teachers to respond to students needs instantly. Arkorful and Abaidoo (2014), commenting on the use of electronic platforms in teaching and learning, emphasised that teaching and learning are flexible; enabling both teacher and student flexible in terms of space and time for teaching and learning, enhances knowledge and gives ease of access to information, and increase interactions between teachers and learners during content delivery and discussion forums. Finally, they argue, electronic platforms consider the individual learner's differences and compensate for the scarcity of academic staff; above all, it increases satisfaction and decreases stress.

In addition, research carried out by Aduba and Mayowa-Adebara (2021) on using online platforms in teaching and learning during COVID-19 among LIS students at the Delta State University revealed that lecturers are always online to teach students, students are free to ask questions, learning are taken in the comfort of their homes, lecture notes can be stored, and files can be called up for reuse at any time. All this ensures collaborative learning, and gives easy access to lectures anytime and anywhere.

Challenges Associated with Electronic Platforms used in Teaching and Learning

Some of the challenges facing students using electronic learning (e-learning) platforms as reported by Narh et al. (2019) and Zalat et al. (2021) includes unstable internet connectivity, inadequate computer labs, lack of computers/ laptops, and technical problems, poor computer skills and self-efficacy, insufficient knowledge of internet handles, and another lacked time management skill. Mathew and Iloanya (2016) discovered that access to technology devices, affordability, high cost of internet tariffs, and technophobia are significant challenges facing E-learning in open and distance learning.

Matthew et al. (2019) investigated the teachers' perceptions of the challenges and implications of the virtual e-learning platform. Their study revealed some challenges teachers faced in virtual e-learning platforms, including students' lack of interest in contributing to discussion forums, inability to teach some topics on virtual platforms, and students' reluctance to use technology. The findings of this study were consistent with Elsa et al. (2020), who studied teacher's challenges towards online learning in the pandemic era and reported that teachers experience challenges relating to an Internet connection, quota, the teacher's less skills of technology, designing enjoyable online learning activities, less communication, and lack of interactivity. Ferri et al. (2020) investigated the challenges and opportunities in online learning and emergency remote teaching. The study revealed that some pedagogical constraints affecting teachers were lack of digital skills, the lack of well-structured content versus the abundance of online resources, learners' lack of interactivity, motivation, and teachers' lack of social and cognitive presence.

Furthermore, Ja'ashan (2020) conducted research on the challenges and prospects of using E learning among English as foreign language (EFL) students at Bisha University. Ja'ashan (2020) identified several challenges faced by the teaching staff. Some of these challenges include internet access issues; inability to post course materials in a timely manner; time constraints for creating course content, online examinations, or assignments; not having enough time to convert course materials from hard copy to electronic; lack of technical support/advice; lack of training courses or technical background; lack of home internet access; and lack of adaptive technology.

Methodology

A descriptive survey was designed and adopted for this study. The study population consists of undergraduate students and lecturers in the LIS Department at NOUN. There are a total of 254 undergraduates in 100, 200, and 300 levels of study in the department, while there is a total of seven lecturers within the stated department. A total enumeration technique was used to

cover the entire identified population in this study because of the population's homogeneity and sufficient resources available to carry out this study. The instrument used to collect data was an online structured questionnaire. Two different types of questionnaires were administered among the two groups of respondents. The content of the questionnaire for the lectures were titled "Questionnaire for Faculty Members of Library and Information Science on "Teaching of Library and Information Science Using Electronic Platforms in Open and Distance Learning in Nigeria: Impact and Challenges". The content covered the various electronic platforms used in teaching of Library and Information Science, impact of using the electronic platforms in teaching and challenges encountered by faculty members of Library and Information Science in using electronic Platforms in Learning.

The content of the questionnaire for the Library and Information Science students were titled *Questionnaire for Undergraduates of Library and Information Science on Learning of Library and Information Science using Electronic Platforms in Open and Distance Learning*. The content covered the various electronic platforms used in teaching of LIS; perception of students on e-learning platforms; and the impact of using the electronic platforms in learning and challenges. The data collected were analysed using the percentages, mean, and standard deviation statistics with the aid of Statistical packages for the Social Software (SPSS. Version 21).

Return Rate

All of the 205 copies of the questionnaire distributed to the students were completed, returned and were found usable, even as the whole 5(71%) copies distributed to lecturers were also completed and found helpful for analysis.

Data Analysis and Results

Table 1:Demographic Characteristics of the Respondents (Undergraduates)

Parameters	Number of Undergraduates	Percentage
Gender		
Male	98	47.8
Female	107	52.2
Total	**205**	**100.0**
Level		
100 level	103	50.2
200 level	93	45.4
300 level	9	4.4
Total	**205**	**100.0**

Table 1 shows a ratio of 47.8% of male respondents to their female counterparts, 52.2%. Besides, 50.2% of the respondents were in their first year of study, closely followed by those in the second year, 45.4%, while those in their third year accounted for 4.4%. Overall, the study distribution reflects a balance between students in parts one to three.

Table 2: Demographic Characteristics of Respondents (Lecturers)

Variables/Demographics	Numbers of Respondents	Percentage
Gender		
Male	2	40.0
Female	3	60.0
Total	**5**	**100.0**
Qualifications		
Ph.D.	5	100.0
Total	**5**	**100.0**
Rank		
Lecturer II	1	20.0
Lecturer 1	2	40.0
Senior Lecturer	1	20.0
Reader	1	20.0
Total	**5**	**100**

Table 2 indicates a ratio of 40 males to 60 female gender distributions. In addition, the lecturers had obtained their PhDs in various areas of specialisation. The highest percentage of 40% represents lecturer I, while lecturer II, senior lectures, and readers accounted for 20% each.

Table 3: Respondents' Distribution on e-platforms used (Undergraduates)

Platforms	No of Respondents	Percentage
Zoom	135	65.9
WhatsApp	65	31.7
WhatsApp Telegram, Zoom, Google Meet, Google Hangout	5	2.4
Total	**205**	**100.0**

Table 3 reveals that almost two third 65.9% - of the undergraduates have received lectures and training in library and information science via the _Zoom_ platform while 31.7% and 2.4%, respectively, have taken classes via _WhatsApp_, _Edublog_, _Flipgrid_ and _YouTube_.

Table 4: Respondents' Perception about the e-platforms in Use (Undergraduates)

Perception	N	Ranking of Mean
Reduces the cost of travelling for lectures by students and lecturers	205	3.7
It allows me to study at my own pace	205	3.7
Enhance knowledge and easy access to learning	205	3.6
The interactive video helps me to watch and listen to lectures as many times that I want	205	3.6
Flexibility of time and place of study	205	3.5
It increases ICT skills and literacy of learners	205	3.5
Provides opportunity for public interaction between the learner and the instructors using discussion forums	205	3.3
	Grand mean	**3.6**

Table 4 indicates that the three most perceived benefits of electronic platforms used in teaching and learning of LIS at NOUN include reduce cost (mean = 3.7); allow individual study (mean = 3.7); enhanced knowledge; and easy access to learning (mean = 3.6). Besides, the benefit with the fewest responses was the provision of an opportunity for public interaction between the learner and the instructors using discussion forums (mean = 3.3). These results indicate a high level of positive perception of the perceived benefits of electronic platforms used in teaching and learning LIS at NOUN with an overall mean of 3.6 on a scale of 4 points.

Table 5: Impact of e-platforms Used (Undergraduates)

Impact	N	Ranking of Mean
e-learning platform enables me to study irrespective of where I am in the country	205	3.7
The E-learning platform allows me to participate in online forums and submit assignment electronically	205	3.7
The use of e-learning has provided flexibility to my study at any time convenient to me	205	3.5
The e-learning platforms used for teaching LIS are user friendly	205	3.5
The electronic learning platform has increased my knowledge on the use of ICT for information access and information sharing online	205	3.5
The electronic tools available allows for interactive communication between me and the instructors without meeting them face-face	200	3.3
The electronic learning platforms have helped to simplify my learning process	202	3.3
The electronic learning platform has helped in bridging the gap between me and my lectures]	205	3.3
In subject areas where practical experiments like cataloguing, indexing and abstracting is needed, I find it difficult to participate	205	3.3
The use of e-learning platforms has enhanced my academic performance	201	3.2
It discontinues vital personal interaction between learners and instructors	201	3.1
The software of the e-learning platform is too complicated to use	205	2.3
	Grand mean	**3.3**

Table 5 indicates that the topmost reported impact of electronic platforms used in teaching and learning of library and information science in NOUN as reported by undergraduates includes e-learning platform that enables individual students to study irrespective of where they are in the country (mean = 3.7). Also, the e-learning platform allows to participate in online forums and submit assignments electronically (mean = 3.7), and the use of e-learning has provided flexibility to study at any time convenient to the students (mean = 3.5). Other impacts include e-learning platforms used for teaching LIS are user-friendly (mean = 3.5). It has increased knowledge on the use of ICT for information access and information sharing while the software of the e-learning platform is too complicated to use and accounted for the least percentage (mean = 2.3). The grand mean of 3.3 indicates a high level of perception about the impact of e-platforms used in teaching and learning library and information science in NOUN.

Table 6: Challenges Associated with e-platforms used (Undergraduates)

Challenges	N	Mean
Slow speed of internet during E-learning process	205	3.8
General network challenges for accessing the recorded videos uploaded in my virtual learning environment	205	3.6
Much money and resources on buying internet data	205	3.6
I have insufficient fund to purchase needed ICT devices that can aid my learning	205	3.3
Insufficient power supply to use ICT in learning	205	3.2
Installation, operation, maintenance and network administration	205	3.1
Lack of ICT skills needed for participation and use of the electronic platform	205	3.0
Lack of ICT skills needed for participation and use of the electronic platform	205	2.9
I do not have time to participate in online class teaching	205	2.5
Anxiety and experiences using computers affects my acceptance of e-learning	205	2.2

Table 6 shows that the topmost identified challenge stated by undergraduates includes slow speed of internet (mean = 3.8), general network challenges (mean = 3.6), cost of buying data (mean = 3.6), insufficient fund to purchase needed ICT devices (mean = 3.3), and insufficient power supply to use ICT in learning (mean = 3.2) among others.

Table 7:   Electronic Platforms used by the Respondents (Lecturers)

Platforms used	Frequency	Percentage
Zoom	3	60.0
YouTube	2	40.0
Total	**5**	**100.0**

Table 7 shows that 60% of the lecturers teach LIS at NOUN via Zoom while 40% prefer YouTube.

Table 8: **Impacts of Electronic Platforms used (Lecturers)**

Impacts	N	Ranking of Mean
It removes physical interaction between learners and instructors	5	3.8
In subject topics where they need practical experiments like cataloguing, indexing and abstracting the learner might not participate fully	5	3.4
Learners' acceptance behaviour towards the web-based learning system	5	3.4
It brings about congestions in some websites	5	2.6
The use of e-learning has provided flexibility to teaching students can be taught anytime and any days of the week	5	4.0
e-learning platforms provides avenue to teach irrespective of location	5	4.0
e-learning platforms allow lecturers engage the students in an online discussion forum where students can express their opinions	5	4.0
Electronic tools allow for interactive communication between the instructors and the students without meeting them face to face	5	4.0
The virtual learning environment designed by the University's Management Information System unit for teaching LIS is user friendly	5	3.6
The use of e-learning enhances teaching performance	5	3.6
The e-learning platforms increase knowledge of the use of ICT for information searching and sharing online	5	3.6
It makes teaching interactive using audio and visual aids	5	3.6
It makes teaching visible to others through the use of YouTube	5	3.6
The electronic learning platforms helps in bridging the gap between the lecturers and the learners using phone calls, emails and WhatsApp	5	3.4

Data from Table 8 the highly ranked impact of using electronic platforms in teaching and learning LIS at NOUN as stated by the sampled lecturers include flexibility in teaching students (mean = 4.0), teaching irrespective of location (mean = 4.0), and the opportunity of teachers engaging the students. Also, removing physical interaction between learners and instructors (mean = 3.8); in subject topics where they need practical experiments, the learner might not participate fully (mean = 3.4); learners' acceptance behaviour towards the web-based learning system (mean = 3.4); congestions in some websites (mean = 2.6); facilitator/lecturer might not possess the needed ICT skills for the electronic platforms (mean =2.3).

Table 10:Challenges Associated with Electronic Platforms used (Lecturers)

Challenges associated with the e-platforms used	N	Ranking of Mean
Network challenges for both students and facilitators/lecturers	5	3.8
Takes a lot of time in preparing lesson notes, Power Points and converting audio recorded Power Point slides into YouTube	5	3.8
Lack of commitment by learners in online class participation]	5	3.4
Excess workload on the facilitators part	5	3.4
Anxiety and experience using computers affects students' acceptance of e-learning	5	3.4
Lack of ICT skills needed for participation and use of the electronic platform	5	3.2
Poor teaching methods in course content delivery as a result of	5	3.2
[Inadequate technical support for lecturers and students (installation, operation, maintenance and network administration	5	3.0
Slow speed of internet during e-learning teaching process	5	2.8
Lack of security and privacy of lecturers can be viewed by many from different locations	5	2.4
Some lecturers don't have a grasp of what they are teaching	5	2.2
Inadequate computers and laptops	5	2.0
Lack of training on the use of electronic platform by the institution	5	2.0
Fear of criticism by colleagues and students	5	1.8
The software of the E-learning platform is too complicated to use	5	1.8

The most-reported challenges stated by lecturers include network challenges (mean = 3.8), takes a lot of time in preparing lesson notes and slides (mean = 3.8), lack of commitment by learners (mean = 3.4), and the excess workload on the part of facilitators (mean = 3.4). Overall, it means that a lot is militating the effective use of electronic platforms in teaching and learning of LIS at NOUN.

Discussion of the Findings

Electronic Platforms Used in Teaching and Learning of LIS at NOUN

The study revealed that, out of the 205 respondents, only 131 received lectures via Zoom, while 64 respondents took courses via WhatsApp and other electronic platforms. There is a need for the lecturers in the LIS department to inform students on the need to join live Zoom classes. This can be through the orientation of new students, which comes up at the beginning of every session. Also, the result of the various electronic platforms used by faculty in teaching LIS at NOUN revealed that they use Zoom (60%) and YouTube (40%) in teaching these students. This finding is consistent with some of the various electronic platforms used in teaching and learning identified by Ramadani and Xhaferi (2020) and Pratama et al. (2020): *YouTube*, *Viber* or *WhatsApp, ZOOM, Google Meet, Google Classroom, Slide Share, Video Maker* are common platforms.

Perception of Undergraduates about e-Platforms used in Teaching and Learning of LIS at NOUN

Undergraduates of the LIS department perceived that the electronic platform for teaching and learning LIS helped reduce cost, enable independent study, enhance knowledge and easy access to learning, and increase ICT skills and literacy of learners. The study's findings agree with Garrison et al. (2009), who affirm that online learners pay attention to the structure and leadership of virtual learning environments to take a deep and meaningful approach to learning. Furthermore, in a similar agreement, Rienties and Toetenel (2016) stated that the time dedicated to student communication activities has been considered a predictor of academic performance.

Impact of Electronic Platforms Used in Teaching and Learning of LIS at NOUN

Electronic platforms have impacted students learning. LIS students of NOUN agreed that the e-learning platforms enable students to study irrespective of the time or place, allow for participation in online forums, and submit an assignment electronically; the platform is user-friendly and increases knowledge on the use of ICT for accessing information and information sharing online. Electronic media have also allowed interactive communication between the instructors and users without meeting them face-to-face. The result of the study is corroborated by the study of Topchyan and Zhang (2014), which validated some factors that affect the perception of distance education students to develop the competencies to work in virtual learning teams, which are: loyalty, integrity, conscientiousness, communication, cooperation, creativity, learning motivation, persistence, independence, and intercultural communication which all have an impact on students' perception on e-learning.

The faculty members revealed that the impact of using an e-platform in the teaching of LIS students at NOUN removed physical interaction between them and the learners, provided flexibility to teaching, enhanced faculty teaching performance, made teaching interactive and visible through the use of *YouTube*, offered audio and visual aids for education, and bridged the gap between the lecturers and the learners. The findings also revealed that faculty members could recognise their students and interact with them using phone calls, emails, and *WhatsApp* without meeting them face to face; engage the students in an online discussion forum where everyone expresses their opinion; and increase the faculty knowledge on the use of ICT for information searching and information sharing online.

Faculty members agreed that the acceptance behaviour of the faculty and learners towards the web-based learning system has an impact on the use of e-platforms in the teaching of LIS but disagreed that the facilitator/lecturer might not possess the needed ICT skills for the e-platforms. Invariably, this shows that the faculty members possessed the needed ICT skills to use electron platforms in teaching LIS at NOUN. Faculty members also agreed that in subject topics where they need practical experiments, the learners may not participate fully and that the virtual learning environment designed by the university management information system unit for teaching LIS is user-friendly. These findings corroborate with the views of Arkorful and Abaidoo (2014) and Abed (2019) on the use of e-platforms in teaching and learning, which emphasise the flexibility of time and place of teaching and learning, increased knowledge and ease of access to a vast amount of

information, and increased interactions between teachers and learners during content delivery and discussion forums.

Challenges Associated with e-Platforms used in Teaching and Learning of LIS at NOUN

Some of the challenges encountered by students when using the e-platforms include slow internet connectivity during e-learning sessions, network challenges when accessing the recorded videos uploaded on the Virtual Learning Environment, cost of buying Internet data, and insufficient funds to purchase electronic devices such as phones, laptops, iPad, and computer systems that can aid learning. The findings of this study support Molawa (2009), who opined that access to technology due to its high cost is also a challenge, especially in many parts of Africa. Likewise, Mathew et al. (2016) found out in their study that the high price of the internet is another major challenge, and many of the learners found the affordability of the Internet as a primary concern for online learning.

The result of the finding on challenges associated with the use of electronic platforms in teaching as identified by faculty includes poor network challenges for both the teachers and students during online class; amount of time needed for the preparation of lesson notes; PowerPoints and converting audio recorded PowerPoints slides into YouTube; lack of commitment by learners in online class participation; lack of ICT skills needed for participation and use of the electronic platform by students, anxiety and experience using computers affects students' acceptance of e-learning and inadequate technical support for lecturers and students (installation, operation, maintenance, and network administration). On the contrary, other challenges like lack of training on the use of e-platforms by the institution is not a challenge; some lecturers don't have a grasp of what they are teaching, fear of criticism by colleagues and students, and software of the e-learning platform being too complicated to use are not considered as challenges being faced by faculty in using the electronic platform in teaching and learning.

This reveals that they are seen as challenges in using e-platforms in teaching students at NOUN. Some of the findings corroborate with the results of Ja'ashan (2020) that identified the challenges that faced academics include problems with internet access issues; inability to post course materials in a timely manner; time constraints for creating course content, online examinations, or assignments; not having enough time to convert course materials from hard copy to electronic; lack of technical support/advice; lack of technical background, and lack of training. On the contrary, the teaching staff do not lack training on using e-platforms in teaching and learning at NOUN, with a mean score of 2.0. This finding disagrees with Coman et al. (2020). They reported a lack of technical skills among teachers that may hinder them from using some functions such as videoconferencing, screen sharing, and chats as offered by e-learning platforms.

Conclusion

The result of the finding emphasised that the e-platform in use in the University Teaching and learning is user-friendly, accommodates flexibility of time and place of teaching and learning. The high cost of the Internet, which constituted a significant challenge, and this should be carefully considered for a hitch-free teaching learning experience. Therefore, the further research

might explore the effects and the correlation between students' and lecturers' perceptions of electronic platforms for teaching and learning library and information science education in NOUN.

Recommendations

Based on the findings and conclusion reached, the following recommendations:

1. The faculty and librarians should help in marketing of various electronic platforms to create awareness on their existence during orientation of new students and new faculty, library weeks and seminars.

2. The electronic platforms used in teaching and their links should be posted in every student electronic learning portal for easy access.

3. The faculty should endeavour to use other electronic platform like *Google Meet, Google Classroom, Viber* or *WhatsApp*, *Slideshare* not only *YouTube*, and *Zoom* platforms for teaching and information dissemination.

4. There should be training and retraining of students and teaching staff on effective electronic learning skills to ensure more interactive sessions between teachers and learners during content delivery and discussion fora. The in-house training and retraining for students and faculty on the ICT skills will help in remove anxiety on the part of the students and enhance the acceptance of electronic learning.

5. The management should try to increase Internet bandwidth to remedy slow internet connectivity during e-learning sessions, uploading and accessing recorded video on the virtual learning environment.

6. To reduce the cost of buying internet data, the management should provide *Wi-Fi* access, extending to far-flung areas with enough data connection.

7. The university management should equip the library and the study centres with Internet connected devices such as computers and laptops for students to connect to the electronic platforms.

8. The university management should employ and assign more supporting technical staff to lecturers and students to ensure adequate installation, operation, maintenance and network management.

9. The school authority should assign a percentage of score to online class participation to motivate and increase students' committed to online facilitation.

10. More facilitators should be employed to reduce the workload on the existing facilitator. When the workload is reduced there will enough time for the preparation class

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