Perceptions Towards Adoption of Online Learning Under COVID-19 Pandemic Among Library and Information Science Students

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ABSTRACT

The outbreak of COVID-19 pandemic forced many academic institutions to shift from face-to-face classroom to online classes. This study investigates the adoption and perception of online learning under the COVID-19 outbreak among undergraduates of library and information science (LIS). Using descriptive survey approach, total enumeration technique was used to enlist all undergraduates (457 students) of LIS as participants. A structured questionnaire tagged "perception of adoption of online learning among LIS students" was administered to participants using online Telegram polls within a period of two weeks in February 2021. The findings revealed that 98.5% of respondents used their mobile phones for online classes, the most used learning platforms being telegram (79.05%) and zoom (33.0%). Those that rated their learning achievement 'good' comprised 75.5%, and 72.9% were satisfied to varying degrees with online classes, but just 19.0% of respondents expressed preference for only online lectures, while majority (44.4%) preferred hybrid mix of traditional classroom and online learning. The students considered learning from any location any time and time management as the major advantages of online learning, while inadequate infrastructure/lack of suitable devices, unstable internet connection and extra financial burden for internet data were the major identified disadvantages. The paper concludes by recommending key steps to be taken by university authorities, governments and other relevant stakeholders to make online teaching more familiar and acceptable to the students.

Keywords: online learning, COVID-19 pandemic, students' perception, library and information science students, Tai Solarin University of Education

Received: 24 May 2022 ◆ Accepted: 15 Jul. 2022

INTRODUCTION

The fear of COVID-19 caused by a novel strain of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first detected in Wuhan, China in December 2019 has gripped the whole world since 2020. It has massively disrupted the global health system as well as every other aspect of human life. To contain the spread and break the transmission chain of the virus, governments in many countries introduced certain unprecedented preventive measures that included lockdown, suspension of social gatherings, travel ban/restrictions and school closures. The closure of educational institutions had adverse impact on students' academic study, interrupted their learning, and disrupted assessment, with students from disadvantaged settings experiencing more severe consequences (UNESCO, 2020a). The UNESCO monitoring report on COVID-19 educational disruption and response, reported that closure of schools affected over 60% of students' population globally (UNESCO, 2020b). In Nigeria, the pandemic deprived students in public universities the opportunity to learn in the four walls of their classrooms for several months as social distancing and other protocols needed to be observed and adequate measures had

to be put in place in order to curtail the spread of the virus in the academic environment.

To mitigate the impact of disruptions to education, many educational institutions moved from traditional face-to-face classroom learning to emergency online learning. The transition from in-person classroom experience to electronic teaching was a good educational innovation and a paradigm shift in the educational processes in government tertiary institutions in Nigeria which enabled students to return to academic work after lecturers' strike action. It is abundantly clear now that post COVID-19, online learning has come to stay as one of the means of lecture delivery in Nigeria.

Apart from the epidemiological advantages of e-learning during the COVID-19 pandemic, other notable strengths identified in literature include increased students enrollments and profits, extension of university reach, increased technological skills for both learners and teachers, taking care of shortfall of instructors, removal of overcrowding of classrooms, reduction of infrastructure cost and air pollution, students working at their own pace, flexibility due to the possibility of learning anywhere and anytime, diversity in students learning experience, improved retention and graduation rates, more

efficient and reliable means of knowledge sharing, convenience and flexibility, conducive environment for corporate training, easy access to learning resources and significantly less time needed for teaching and learning (Popovich & Neel, 2005; Selken, 2020).

Online teaching requires that certain technology infrastructures and special skills should be in place for it to work efficiently. It should be of interest to know the level of preparedness of universities in Nigeria and other developing countries before they embarked on online teaching during the COVID-19 outbreak. Furthermore, the success of online learning methods is largely dependent on students' extent of acceptance (Al-Qirim et al., 2018; Maphosa, 2021). Dodge et al. (2009) reported higher drop-out rate with online learning than with face-to-face method. In Nigeria and elsewhere in developing countries, there have been complaints from both students and some lecturers that the online learning being a system newly introduced, they are still not very familiar with it use and that its effectiveness as a learning method is doubtful considering the facilities on ground (Olatunde-Aiyedun et al., 2021). Ojelade et al. (2020) listed the factors that could militate against effective online teaching as inadequate provision for audio-visual aids such as computer, screen and electricity supply/generators, and shortages of human power/personnel. Anyorigya (2020) reported that the National Union of Ghana Students petitioned the Ministry of Education to either proffer solution to key challenges being faced by students on online learning or halt the process as means of lecture delivery. The challenges encountered included the high cost of internet data, lack of appropriate framework for the roll out of the online learning method, and that many students cannot afford access devices.

Statement of the Problem

For academic activities to continue during the COVID-19 pandemic, university authorities in Nigeria and elsewhere commenced online method of delivery of lectures to students. The sudden shift from face-to-face teaching to online was new to students and they have no option but to adapt. The new teaching methodology however, generated a lot of controversy and different opinion from the public, students and their lecturers, as they believed a properly formulated framework to implement such learning methodology was not in place, and that there was also lack of technological skills and experience required for smooth running. However, the benefits of online learning to students include flexibility in terms of time and place to attend lectures, reduced travel expenses, increased technological skills, removes overcrowding of classrooms, reduced cost of infrastructure and air pollution, possibility of working at one own pace, diversity in learning experience, improved retention and graduation rates, more efficient and reliable means of knowledge sharing. The success of online learning depends on the relevant functional ICT infrastructures, competence of students and their lecturers on using computers and internet as well as students' readiness to adopt the system. Thus, it has become necessary for university authorities and policymakers to comprehend students' perception and what could be a barrier to adoption of online learning among students.

The online learning has been in operation for some time, and it is crucial to know the learning achievements, instructional learning preference, their intellectual and emotional stimulation, enjoyment, and the advantages and disadvantages of the online teaching and learning model from students' perspective. This study thus investigates the perception of adoption of online learning by library and information science (LIS) undergraduates.

The study is guided by the following specific objectives:

1. To assess the competence of the students on use of various ICT applications.
2. To find out the pattern of use of online classes by LIS students.
3. To find out the students perceived effect of online learning on their intellectual and emotional stimulation and learning achievement.
4. To find out students' preference for online classroom or the traditional face-to-face classroom.
5. To identify students perceived advantages and disadvantages of online learning.

Research Questions

1. What is the level of competence of students in handling various ICT applications?
2. What are the patterns of use of online classes by LIS students?
3. How do students perceive the effect of online classes on their intellectual and emotional stimulation as well as their learning achievement?
4. Do students prefer the online classroom or the traditional face-to-face classroom?
5. What are the students' perceived advantages and disadvantages of online classes?

LITERATURE REVIEW

Online learning refers to the use of digital/electronic tools with internet connections for teaching and learning. Singh and Thurman (2019) described online learning as "learning experiences in synchronous or asynchronous environments using devices such as mobile phones and laptops with internet access. Synchronous learning involves attendance of scheduled classes through live-streamed lectures, video conferencing, chart room, teleconferencing, and real time demonstrations while asynchronous learning allows students to discuss with classmates and instructors at their convenience (different times) using tools such as emails, social networking sites and discussion boards (TBS Staff, 2021).

Studies have demonstrated the strengths of online classes to include its flexibility due to the possibility of learning anywhere and at any time, prompt delivery of information, convenience, accessibility, and diversity in students learning experience. Alqahtani and Rajkhan (2020) opined that online learning enhances exchange of knowledge between lecturers and students, and strengthens channels of communication, ultimately leading to better performance. Selken (2020) stated that the recent widespread adoption of online classes has propelled forward by ten years the application of technology in education. However, the limitations identified in literature include inadequate technological and social infrastructure, low retention rates, less social interaction and lack of motivation on the part of students (Amir et al., 2020). Carol (2020) enumerated the minimum technological requirements for successful online learning to include the acquisition of hardware such as computers, mobile devices, or webcam, some form of listening device, video conferencing applications such as Zoom or Microsoft Windows or Apple operating systems.

The survey of literature shows that online teaching is not a totally new method of learning, but it was COVID-19 that brought it to the mainstream globally and especially in the Nigerian educational system. Gupta (2020) carried out a survey of perspective about online education and found that 50% of the students liked online teaching, with 53% holding the opinion that online education helped in time management, but 58% of the students still preferred physical classroom teaching. Krystalli (2020) studied the perception of undergraduates and found that 76% of respondents preferred traditional classroom teaching. The respondents also pointed out that subjects such as literature, cannot be effectively handled by online learning. The other shortcomings of online education pointed out were lack of human interactions and technical issues of internet connectivity. Amir et al. (2020) examined the perspective of undergraduates on dental program about classroom and remote learning during COVID-19 and found that 44.2% preferred online learning over classroom learning, and the majority (52.6%) of the students believed that online learning was more effective, avails them more time to study (87.9%) and review study materials (87.3%). The challenges identified by the students were unstable internet connection, extra financial burden for the internet, time management and difficulty to focus for long period with online learning.

Armstrong-Mensah et al. (2020) studied the effect of online learning and found that all students had laptop access at home or work; 11% used cellular phones to get access, and only one person indicated not having internet access at home. The students indicated preference for asynchronous online teaching, as it allowed them to learn at their own pace, do course work when they were ready, gain access to pre-recorded course lectures and other resources conveniently, and it enhanced their ability to manage their schedule from any location and at any time. Nambiar (2020) studied perspectives of students and teachers about the impact of online learning during COVID-19. The positive sides of online learning according to the students included time saving, quick coverage of syllabus, possibility of watching recorded lectures later again and again, participation in lectures from any location, lesser disturbance from course mates and reduced anxiety in asking doubts and queries. Conversely, the drawbacks of online lectures identified by the students were quality issues due to technical problems, lack of structure, disturbance of classes, difficulty of clarifying doubts and lack of interest and motivations to attend the classes. Overall, 87.1% of the students preferred classroom teaching as against 12.9% that showed preference for online classes.

Akuratiya and Meddage (2020) studied the perception of IT students about online learning during COVID-19 and found that smart phone (43.8%) was the most used device for online classes and 54.7% of respondent's preferred blended learning of traditional face to face and online learning. Most students believed that online lectures were effective, enjoyable, ability to learn at own pace, and easy access to online materials. The identified demerits of online learning by the students were less interaction between friends and lecturers, social isolation and technical problems. The findings of Means et al. (2010) about online learning showed that students are very excited and enthusiastic about online classes; and tend to be more attentive and participatory in online class activities than in traditional face to face. It was further revealed that students are more likely to put up the best performance during blended classes of combined traditional and virtual classes, and that students perform better in virtual classes than the traditional physical classes. Maphosa (2021) studied perceptions of university students about deployment of online learning during

COVID-19 and found that many students (85%) never used any e-learning platforms before the COVID-19 crisis, and majority of students (65.7%) expressed preference for blended learning and only 21% opted for a solely online learning, and 5% opted for traditional face-to-face learning. Sarpong et al. (2021) examined level of participation, satisfaction, and challenges of teaching during COVID-19 pandemic among university students and found that 9.85% of respondents were unable to be fully involved in online learning due to lack of access devices, unstable internet connectivity, and inability to afford the cost of internet data. It further showed that 90.1% of students were dissatisfied, but nevertheless, the students believed that e learning during COVID-19 is a positive development regardless of the challenges. Zagkos (2022) described and measured the attitudes of students at universities towards the distance learning process. The findings showed that students believed distance learning cannot replace face-to- face teaching, particularly in courses that involves laboratory practical, and that online learning had degraded the pedagogical relationships between lecturers and students as well as between classmates. The students believed that online learning had worsened educational inequalities due to lack of digital equipment and undeveloped technological infrastructure. Egielewa et al. (2022) studied perception of students of higher institutions about online learning during COVID-19 pandemic and found that students are dissatisfied and would want institutions to discontinue online learning after COVID-19 due to infrastructural deficiency.

METHODOLOGY

Study Design

The quantitative descriptive survey research method was employed for the study. The study was carried out at the Tai Solarin University of Education, Ijagun, Ogun State, Nigeria.

Study Participants

The study population comprised all undergraduates (100-400 levels) totaling 457 students of the Department of LIS, in the 2019/2020 session. Total enumeration method was used due to the small number of the population.

Research Instrument

The instrument "perception of adoption of online learning among LIS students" was developed based on insight from past related literature. The instrument has items on demographics, ICT competence and in the following domains about online classes: experience and pattern of use, emotional and intellectual stimulation, learning achievement, preference for face-to-face or online classes and perceived advantages and disadvantages.

Validity of the Instrument

The validation of the instrument was done by three experts, one from ICT unit of the university and two educators that are in the field of measurement and evaluation.

Reliability of the Instrument

The internal consistency of the research instrument was established through the test- retest method using 30 LIS students at another university. The correlation co-efficient of 0.83 was obtained for the

Table 1. Sociodemographic characteristics of respondents

Characteristics	Frequency	Percentage
Gender		
Male	132	28.9
Female	325	71.1
Total	**457**	**100.0**
Age (years)		
15-19	144	31.5
20-24	208	45.5
25-29	77	16.8
≥30 above	28	6.1
Level of study		
100	137	30.0
200	125	27.4
300	102	22.3
400	93	20.4
Regularity of the Internet use		
Daily	415	90.8
Three-five times in a week	36	7.9
Weekly	6	1.3
Types of the Internet used in university campus		
Campus Wi-Fi	28	6.1
Persosnal Wi-Fi	34	7.4
Mobile data	395	86.4
Primary source of the Internet in campus		
University ICT centers	68	14.9
University library	-	-
Department/faculty	-	-
Personal device	389	85.1
Experience with use of the Internet		
Highly experienced	291	63.7
Fairly experienced	166	36.3
Not experienced	-	-

whole instrument; thus, adjudging the instrument as adequate and relevant to the objective of the study.

Administration of the Instrument

The instrument was administered online by the researcher. The students were informed that participation in the survey was voluntary and that their responses were confidential. The link to the telegram that contained the questionnaire was sent to all participating students through their Group WhatsApp platform. There were two reminders to students within the period questionnaire administration which lasted for two weeks in February 2021.

Data Analysis

The responses of the participants were imported into the statistical package for social sciences (SPSS) version 20. Descriptive statistics of frequencies, percentages, and means were employed in data analysis.

FINDINGS AND DISCUSSION

All the 457 copies of the questionnaire administered were duly completed, retrieved and found useful giving a response rate of 100%.

Sociodemographic Profiles

Table 1 shows that out of 457 study participants, 325 (71.1%) were females and 132 (28.9%) were males. The majority of respondents, 208(45.5%) were in the age group of 20-24 years, followed by those in

the age range of 15 to 19 years (31.5%), and the overall average age of respondents was 21.9 years. The level of study distribution shows that 100 level participants had the highest number of participants, 137 (30.0%), followed by 200 level participants, 125 (27.4%), 300 level, 102 (22.3%) and the least 400 level, 93 (20.4%) participants. The vast majority of respondents used internet daily (90.8%). Even when on campus, 84.6% of respondents used mobile data, and 85.1% of respondents used their personal device as the primary source of access within campus, while 63.7% claimed to be highly experienced in the use of internet.

Competence in the Use of Various ICT Applications

The participants were asked to assess their competence on various ICT skills on the scales that ranged from 1-poor capability to 5-excellent. **Table 2** shows that the majority of respondents rated their competence as either good or very good or excellent on various computer and internet skills evaluated. The highest area of knowledge indicated by LIS students was on Internet communication tools such as email, chatting, social network sites (Whatsapp) for which 31.9% and 41.4% of respondents rated their competence as excellent and very good, respectively, with a mean rating of 3.99. Next was operations of basic computer skills such as word processing for which 24.7% and 44.9% of respondents rated their competence as excellent and very good, respectively (mean=3.79), The use of search engines such as Google, Scholar Google, Yahoo (mean=3.66) ranked third, and using multimedia contents such as power point ranked fourth with a mean raking of 3.34. The operations in which respondents reported least level of competence were on use of electronic resources such as TEAL, OPAQ, AGORA, databases (mean=2.63) and design of online contents such as Google drive, iCloud (mean=2.44).

The competence of the students in using various ICT applications is key to effective online learning. Generally, the responses showed that many students have sufficient measure of the relevant skills and competencies required for effective use of online learning platforms. Thus, many of the respondents possess the skills required for active participation in online learning.

Participation in Online learning

In response to whether they had participated in any mode of online teaching before the advent of COVID-19, 412 respondents (90.2%) indicated not to have had such experience. That students had not had prior experience of online teaching before COVID-19 agrees with the findings of Akuratiya and Meddage (2020), 62.5% of surveyed students of Dehiwala, Sri Lanka had little or no online learning experience before COVID-19 crisis. However, all the participants answered positively that they have participated in online learning classes after the COVID-19 outbreak.

The data in **Table 3** indicates that nearly all respondents (98.5%) used their mobile phones to access online classes, distantly followed by laptops (14.0%). Tablets ranked third and was used by 19 (4.2%) respondents while the least used device was the desktop computer 32 (7%). Three hundred and ninety-three (349, 76.4%) used only mobile phones for online learning classes. The present result agrees with the findings of Aririguzoh et al. (2016), which found that students in both private and public universities used mainly mobile phones to access the internet. That the students mainly used mobile phones for online classes can be ascribed to its affordability and compactness. A

Table 2. Respondents self-assessed competence in the use of various computer and internet applications (n=457)

Skills	Excellent	Very good	Good	Fair	Poor	Mean
Search engines such as Google, Scholar Google, Yahoo, etc.	48 (10.5)	258 (56.5)	109 (23.9)	32 (7.0)	10 (2.2)	3.66
Basic computer skills such as word processing, spread sheets typing, and editing	113 (24.7)	205 (44.9)	84 (18.4)	38 (83.2)	17 (3.7)	3.79
Internet communication tools like email, chatting, social network sites (Whatsapp)	146 (31.9)	189 (41.4)	98 (21.4)	19 (4.2)	5 (1.1)	3.99
Internet tools for learning such as video chat (Skype) and web video (YouTube)	29 (6.3)	132 (28.9)	212 (46.4)	51 (10.9)	33 (7.2)	3.16
Using multimedia contents such as power point, keystone, etc.	68 (14.9)	75 (16.4)	273 (59.7)	26 (5.7)	15 (3.3)	3.34
Design of online contents such as Google drive, iCloud, etc.	31 (6.8)	48 (10.5)	120 (36.3)	152 (33.3)	106 (23.6)	2.44
Electronic resources such as TEAL, OPAQ, AGORA, databases, etc.	21 (4.6)	57 (12.5)	181 (39.6)	128 (28.0)	69 (15.0)	2.63

Note. Rating scale for competence on computer and internet skills: excellent-5; very good-4; good-3; fair-2; & poor-1

Table 3. Device(s) used for online classes by LIS undergraduates

Device	* Frequency	Percentage (%)
Mobile phones	450	98.5
Laptops	64	14.0
Desktop computers	19	4.2
Tablets	32	7.0

Note. *Multiple responses possible

Table 4. Learning platforms used for online classes by lecturers

Learning platform	* Frequency	Percentage (%)
Google Meet	91	19.9
Microsoft Teams	109	23.9
Telegram	361	79.0
Zoom	151	33.0
YouTube	33	7.2
Facebook Streaming	23	5.0

Note. *Multiple responses possible

Table 5. Time spent per day by respondents on online classes

Time	Frequency	Percentage (%)
>1 hour	63	13.8
1-2 hours	309	67.6
3-4 hours	85	18.6
Total	457	100.0

Table 6. Respondents perceived learning achievement with online classes

Learning achievement	Frequency	Percentage (%)
Excellent	61	13.3
Very good	94	20.6
Good	190	41.6
Fair	97	21.2
Poor	15	3.3
Total	457	100.0

Table 7. Intellectual and emotional stimulation (IES) with online class

IES	Frequency	Percentage (%)
I am always stimulated	38	8.3
I'm often stimulated	77	16.8
Stimulated	230	50.3
Fairly stimulated	102	22.3
Never stimulated	10	2.2
Total	457	100.0

smartphone could be purchased for as low as 40,000.00 Naira (100 USD), whereas cost of a laptop is from N250,000.00 Naira (625 USD).

The Nigerian Communications Commission stated that as of July 2021, the mobile (GSM) active lines in Nigeria were over 198 million. (Nigerian Communication Commission, 2020 cited by Oyelola (2021). Oyelola (2021) further stated that 92.4% of all internet users in Nigeria connect with smartphones. According to Statista (2022), 70% of the Internet traffic in Nigeria is by mobile devices and this points to poor access to technological equipment to fully make use of internet. The study of Maphosa (2021) also found that 78% of university students deployed mobile phone for online learning, and that this made the tasks of running some applications difficult for the students. Gon and Rawekar (2017) noted that the use of small screens for ICT operations could result in eye strains.

When asked about the platforms used by the lecturers during online classes, Telegram application ranked first as it was chosen by 79.0% of respondents, distantly followed by Zoom chosen by 33.0%, and Microsoft Teams was in the third position chosen by 23.9% respondents (**Table 4**). The least used platforms were YouTube (7.2%) and Facebook streaming (5.0%).

Time Spent on Online Classes

When asked about the time daily spent on online learning, slightly greater than two third of the respondents (67.6%) spent 1-2 hours per day, followed by 18.6% that spent 3-4 hours per day, while 13.8% spent less than one hour daily on online learning (**Table 5**). The average time spent on online learning per day by all respondents was 1.8 hours per day. The timetable for the students for classroom teaching shows that they have on the average four lectures per day with each lasting for two hours, meaning that they spent a total of eight hour per day for physical lectures. The finding imply that time spent on online learning by the LIS students was less than 25% of what they would have spent on their lectures if it was the physical classroom lectures.

Table 6 shows the learning achievement of undergraduate students with the online class. A total of 190 (41.6%) respondents indicated that their learning achievement was good followed by 97 (21.2%) respondents that rated their learning achievement as 'fair'. Next was 94 (20.6%) and 61(13.3%) that rated their learning achievement during online classes as very good and excellent, respectively. If the percentage for excellent, very good and good are pooled together, then 345 (75.5%) respondents rated their learning achievement as good to varying extent. Cook and Triola (2014) had observed that students are able to learn faster online; and that e-learning requires about half of the time needed for face-to-face classroom teaching.

Table 7 shows the intellectual and emotional stimulation with online class by respondents. About half, 230 (50.3%), indicated that they were stimulated intellectually and emotionally with the online class and 102 (22.3%) respondents indicated that they were fairly stimulated. Seventy-seven (16.8%) respondents indicated that they were often

Table 8. Respondents level of satisfaction with online lectures (n=457)

Level of satisfaction	Frequency	Percentage (%)
Very satisfied	15	3.3
Satisfied	176	38.5
Somewhat satisfied	142	31.1
Dissatisfied	86	18.8
Very dissatisfied	38	8.3
Total	457	100

Table 9. Teaching style preference of undergraduates after COVID-19

Learning method	Frequency	Percentage (%)
Classroom	167	36.6
Online learning	87	19.0
Online & classroom	203	44.4
Total	457	100.0

stimulated intellectually and emotionally, and 38 (8.3%) agreed that they were always stimulated with online lectures, while only ten respondents (2.2%) said they were never stimulated. If we pool together those that were always, often up to fairly stimulated, then it means 447 respondents (97.8%) were stimulated, though at varying extents with online lectures. This result is in tandem with Schunk et al. (2008), which noted that more than half (53.6%) of the respondents reported that they were able to stay motivated and complete their assignments on time with online learning.

Satisfaction with Online Lectures

The findings in **Table 8** shows that only 15 (3.3%) of respondents were very satisfied with the online classes, while the majority 176 (38.5%) claimed they were "satisfied". A further 31.1% said they were 'fairly satisfied'. Those that indicated they were 'dissatisfied' and 'very dissatisfied' together constituted 124 (27.1%) respondents. The addition of those that were fully satisfied, satisfied and somewhat satisfied was 333 (72.9 %%), and this could be considered as those satisfied to varying degrees with online classes. The findings thus shows that majority of the respondents were satisfied with the online lectures. This result aligns with the result of a survey carried out among Polish medical students where a total of 589 (73%) respondents rated e-learning as enjoyable (Baczek et al., 2021). It is however in sharp contrast to the finding of Sarpong et al. (2021) which found that 90.1% of students of higher institutions were dissatisfied with e-learning.

Table 9 shows that majority of the participants 203 (44.4%), preferred blended online and classroom learning, followed by those that preferred classroom learning 167 (36.6%) respondents, while only 87 (19.0%) respondents indicated preference for only online lectures. The result buttressed the findings of Akuratiya and Meddage (2020), Maphosa (2021), and Rajab et al. (2020), majority of respondents preferred blended learning of traditional classroom and online teaching. The results however contradict that of Krystal (2020) and Namibia et al. (2020), which found that students expressed preference for traditional classroom teaching. The report of Egielewa et al. (2022) carried out among higher institutions cutting across universities, polytechnics and colleges of education found majority of students expressing dissatisfaction with online lectures, with 56% of them rejecting blended form of lectures and that institutions return back to traditional classroom learning after COVID-19.

Perceived Advantages of Online Learning

In response to the question on the advantages of online lectures in **Table 10**, a total of 225 (49.2%) respondents indicated that learning can be from any location at any time while 155 (33.9%) respondents indicated time management provides more time to study, 152 (33.3%) indicated easy access to learning materials and 147 (32.2%) respondents indicated ability to learn at one's own pace. However, only 10.5% considered the need not to be buying books all the time and 5.9% that online lecture is cost saving as advantages of online lectures. That online learning can take place at anytime and anywhere and that it avails easy access to learning materials is in line with the findings of Gori (2017), which found that medical students agreed that online learning allows learning anytime anywhere and allows easy accessibility to learning materials respectively. That time management is one of the major strengths of online learning buttressed the findings of Amir et al. (2020) and Gupta (2020) that students believed that online teaching helped them in time management and availed them more time to study.

Perceived Disadvantages of Online Learning

Table 11 shows the disadvantages of online learning cited by LIS undergraduates of Tai Solarin University of Education (TASUED). An overwhelming majority 415 (90.8%), indicated Inadequate infrastructure/lack of suitable device as a disadvantage, followed by 349 (76.4%) respondents that cited unstable internet connection, 76 (60.4%) respondents considered extra financial burden for internet data, and 198 (43.3%) respondents indicated that it is harder to pay attention/stay on task with online class, 187 (40.9%) respondents indicated difficulty of lecturers to cope with technology and 165 (36.1%) indicated lecturers feedback was poor, were disadvantages of online classes. This finding supports Maphosa (2021) which found that poor access to technological devices was the major challenge to adoption of online learning. This study found that not up to one third of respondents had access to desktop computers and laptops in agreement with the findings of Aboagye et al. (2020) and Maphosa (2021) that lack of access to computers and laptops made the shift to online learning difficult. It is also consistent with the finding of Sarpong et al. (2021) that insufficient/unstable internet connectivity and technical problems are two of the major setbacks to adoption of e learning among students of higher institutions in Ghana.

CONCLUSION

The COVID-19 pandemic impacted on the education systems all over the world, forcing many institutions to suddenly turn from the traditional face to face to online learning. The paradigm shift was not that smooth in developing countries such as Nigeria where students and lecturers have not been well trained for such switch. The study established the perceptions of LIS students of TASUED regarding online teaching adoption and has contributed to the body of knowledge on the implementation of e online learning in Nigeria during COVID-19. The majority of the respondents expressed their satisfaction about online classes; rated their learning achievement to be high and were also intellectually and emotionally stimulated. Thus, LIS students are optimistic on the adoption of online learning for lecture delivery. Nevertheless, the students preferred blended mix of face to face and online classes. The major advantages of online lectures mentioned by respondents included being able to learn from any location at any time,

Table 10. Perceived advantages of online lectures by library and information science undergraduates

Advantages of online classes	* Frequency	Percentage (%)
Learning can be from any location at any time	225	49.2
Time management provides more time to study and use materials	155	33.9
Easy access to learning materials	152	33.3
Learning at one's pace	147	32.2
Even when you are sick you may not miss the class	133	29.1
Easy for students to participate	129	28.2
Flexibility	100	21.9
Efficiency	78	17.1
Do not have to be buying books all the time	48	10.5
Cost saving	27	5.9

Note. *Multiple responses possible

Table 11. Perceived disadvantages of online lectures by library and information science undergraduates

Disadvantages of online classes	* Frequency	Percentage (%)
Inadequate infrastructure/lack of suitable device	415	90.8
Unstable internet connection	349	76.4
Extra financial burden for internet data	276	60.4
Harder to pay attention/stay on task	198	43.3
Difficulty of lecturers to cope with technology	187	40.9
Lecturers feedback poor	165	36.1
Background noise	141	30.9
Difficulty in joining class	133	29.1
Less social interaction	130	28.4
Not easy to ask/get answers to questions	122	26.7
Increased distractions	79	17.3
Harder to retain information	68	14.9
Increased screen time	40	8.8

Note. *Multiple responses possible

time management availing more time to study and easy access to learning materials. However, more than three quarter of respondents cited technical difficulties (inadequate infrastructure/lack of suitable and unstable internet connection) as the main drawbacks of online classes. The other frequently mentioned disadvantages of online lectures were extra financial burden for internet data, harder to pay attention/stay on task with online class and difficulty of lecturers to cope with technology.

Recommendations

This study has shown widespread use of online classes among LIS students of TASUED. In view of the fact that students considered their learning achievement to be good and were intellectually and emotionally stimulated with its use, it is clear that addressing a number of issues identified as drawbacks in this study will make online lectures to be more acceptable to the students. Based on the findings, the following suggestions are being put forward to improve the adoption of online classes.

The University management should develop clear policy framework that will support the deployment of online learning. The university should ensure that community members are exposed to training and retraining on a continuous basis to bolster students and lecturers ICT competence and its deployment for online learning.

The government, telecommunication providers and university authorities should collaborate and work out a modality to reduce cost of internet subscription for both students and lecturers to make it more affordable.

The university should take steps that would increase students' ownership of laptops and desktop computers since this could increase students' adoption of electronic learning. The University could initiate schemes that will assist students to acquire their own laptops and PCs such as going into partnership with technology vendors to purchase desktop computers and laptops at affordable prices or on credit for students. An example of this was the partnership of Obafemi Awolowo University Ile Ife, Nigeria with Cooperative Information Network (COPINE) through which students of OAU acquired PCs at affordable prices (Bankole & Babalola, 2012).

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