Perceptions on the Effectiveness of E-Learning in Higher Education Institutions During the Covid-19 Pandemic a Case of a Private University in Uganda

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DOI: https://dx.doi.org/10.47772/IJRISS.2024.8120076

Received: 28 November 2024; Accepted: 02 December 2024; Published: 02 January 2025

ABSTRACT

The Covid-19 pandemic has caused many disruptions worldwide in all aspects essential to human life. Universities have had to adapt innovative teaching methodologies to ensure continuity of learning during government directed lockdowns. In this paper, we discuss the perceptions of students and lecturers towards the effectiveness of e-Learning in private Universities in Uganda. This study followed a cross-sectional survey design. A self-administered questionnaire was used to collect data from a sample of 63 undergraduate students and 24 lecturers. The study findings revealed that both students and lecturers have a positive perception towards e-Learning. There exist significant differences between the students and lecturers' perception towards the suitability of the e learning environment ($p=0.0001<0.05$) and the existing ICT support services ($p=0.0008<0.05$). We recommend that higher education institutions create enabling e-Learning environments to support e-Learning methodologies. The Government improves access to eLearning infrastructure like internet, power and affordable e-Learning instructional materials.

Key words: E-learning; effectiveness; Higher Education; private University, Covid-19

INTRODUCTION

eLearning refers to web-based learning that involves the integration of the internet with learning (Alkhadhr, 2017; Kumar, 2019; Wu, Chen, & Chen, 2017). eLearning is given several names including: distance learning, tele-learning, virtual education, digital education, computer-based training, distributed learning and web-based training depending on the emphasis of the delivery methods used (Panagiota Altanopoulou, 2014; D, Salleh, & Iahad, 2012). eLearning is the delivery of an education program by electronic means and often entails the use a computer, mobile phone, overhead projector, scanner, tablets, cloud technologies or any other appropriate electronic device (Eze, Chinedu-Eze, & Bello, 2018; Luaran, Samsuri, Nadzri, & Rom, 2014; Panagiota Altanopoulou, 2014; D, Salleh, & Iahad, 2012). Institutions of higher learning are making use of eLearning to boost their competitive edge in the provision of equitable and accessible quality education (Panagiota Altanopoulou, 2014; Dounas, Mazo, Salinesi, & Beqqali, 2015; Shraim & Khlaif, 2010).

eLearning enriches the traditional delivery methods and at times is used as an alternative to the traditional face-to-face teaching method. This has also become prominent during the Covid-19 pandemic (Ashraf, Khan, & Alouraini, 2023) where the close down of educational institutions has made e-learning a viable option to continue the transmission of knowledge to students from their various locations. The emergence of e-learning methodologies has transformed the role of a teacher from the all-knowing knowledge provider to a facilitator of the teaching -learning process. Despite the advantages associated with e-learning, its adoption in most developing countries has been slowed down by the negative attitude of users, inadequate internet connectivity, unfavorable government policies, limited ICT skills, power failures and a limited financial base of most institutions of higher learning (Eze, Chinedu-Eze, & Bello, 2018; Shraim & Khlaif, 2010).eLearning enables the sending and receiving of information through electronic means like the internet, emails, online chats, discussion forums, video conferencing, online courses, e-books, virtual meetings and white boards (Cappel & Hayen, 2016). Through eLearning, educational programs can be provided to students beyond the four walls of the classroom at any time (Luaran, Samsuri, Nadzri, & Rom, 2014). Online learning thrives in an Online

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue XII December 2024

learning environment enriched with a set of teaching and learning tools designed to aid a student's learning experiences by making use of the computer and internet in the learning process. It may be purely online without any face-to-face meeting or blended learning (Panagiota Altanopoulou, 2014; D, Salleh, & Iahad, 2012).

Following the closure of education institutions in Uganda on 20th march 2021, as an effort to curb the spread of Covid-19 (Leticia & James, 2021), education institutions especially Universities had to come up with innovative ways of continuing education of their student population from their various locations where they had been locked up. Many universities that had hitherto preferred the face-to-face mode of instruction strived to acquire or strengthen the existing learner management system to facilitate the teaching learning process during the lockdown. Suffice to say that the lockdown was abrupt and was never expected nor planned for. The students as well as their lecturers were ill-prepared to undertake online studies. There was no form of prior training in eLearning methodologies accorded to both lecturers and students before implementing the eLearning. Neither was there sufficient research done to establish the readiness of both lecturers and students to take on eLearning.

It should also be noted that most students and even some lecturers lack the basic facilities and tools to effectively undertake eLearning. The internet connectivity is mainly in urban areas yet the majority of the students had been locked down in the far remote areas in the villages where internet connectivity is a nightmare. The electricity supply in most rural areas is limited and where it is, it is at times unreliable. The high levels of poverty coupled with movement restrictions left many without access to any form of income yet learners had to purchase data to access eLearning materials. The consent of learners to adopt eLearning given the abrupt nature of the lockdown was ignored. These and many other limiting factors imposed by Covid-19 restrictions to eLearning have made this study necessary to investigate the perceptions of the effectiveness of eLearning in universities during the Covid-19 restrictions.

Effectiveness of e-learning systems

The successful implementation of an e-learning system requires the existence of a well facilitated IT infrastructure and competent staff with ability to deliver e-learning programs efficiently. This however is limited by the digital divide where many lack IT skills, IT gadgets, internet bandwidth and internet connectivity (Paul & Balunywa, 2013; Richard, 2019). (Alkhadhr, 2017) suggests internet connectivity of a reasonable speed of at least a minimum of 64 Kbps and argues that learners make use of the eLearning system for its benefits to be maximized. The eLearning system should be user friendly (Wu, Chen, & Chen, 2017) and adaptive to the different individual needs of students in different learning environments (Zhang, 2004).

Hussain, Zhu, Zhang, & Abidi (2018) identifies among the most significant challenges of e-learning systems to be the lack of students' motivation in the various online course activities. The regular interaction using online tools like forum and quizzes help increase learners' interest in eLearning. E- Learning works on the assumption that learners are ready to undertake individualized self-paced learning (Shraim & Khlaif, 2010) but as (Mamdani, 2007), puts it; there exists a poor reading culture among students and staff. With such a poor reading culture, one wonders the feasibility of learners in higher education institutions in Uganda to effectively make use of the e-learning system. The instructors also need to be well versed with e-learning methodologies and able to use e-learning tools like discussion forums, blogs, wikis and video conferences (Eze, Chinedu-Eze, & Bello, 2018). Similarly, the e-learning philosophy should be well articulated in an institution vision and mission (Uys, Nleya, & Molelu, 2004; Paul & Balunywa, 2013; Shraim & Khlaif, 2010).

The literature identifies two major types of e learning: 1) Synchronous e learning where learning is real time and instructor led (Panagiota Altanopoulou, 2014) and 2) Asynchronous eLearning where the student sets the pace for his/her own learning from any location. Asynchronous eLearning is credited for promoting student centered learning (Mehlenbacher, Miller, Covington, & Larsen, 2000; Panagiota Altanopoulou, 2014). The University of Kisubi encourages the use of the Asynchronous type of eLearning given the varied characteristics of their learners and unpredictable e-learning environment. The unpredictable e-learning environment may be caused by factors like electricity irregularity, limited internet connectivity and the general poverty among the population.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue XII December 2024

ICT support services

The success of e-learning learning activities largely depends on the adequacy of the ICT support activities in form of both the software and hardware. Many of the academic and support staff in institutions of higher learning possess limited skills and knowledge of ICT (Basaza, Natalie, & Wright, 2010). eLearning is a new teaching learning paradigm in many countries that is being fronted to enable continued education activities in lockdown situations caused by the Covid-19 pandemic. New learning requires a lot of support for the recipients to appreciate its usefulness. The lack of learner support has been cited among the factors that impede learning (Basaza, Natalie, & Wright, 2010). Many institutions, staff and students were un prepared for e-learning and therefore its adequacy and effectiveness in implementing institutions need to be investigated.

Advantages of eLearning

E-learning is associated with different advantages that include among others: being learner centered, time and location flexibility, ensures high quality learning, cost effectiveness, allows more time for preparation for the instructor, requires no immediate feedback (Nunamaker, Zhang, Zhao, & Zhou, 2004; Alkhadhr, 2017; Hussain, Zhu, Zhang, & Abidi, 2018; Luaran, Samsuri, Nadzri, & Rom, 2014; Wu, Chen, & Chen, 2017) It is more convenient to learners, increases student engagement and allows for freedom of expression (Baig, 2011). E learning aids the teaching learning process as it enables storage and information retrieval (Luaran, Samsuri, Nadzri, & Rom, 2014).

Disadvantages of eLearning

eLearning is associated with high student dropout rates as high as 78 percent if not well managed (Hussain, Zhu, Zhang, & Abidi, 2018; Parker, 1995; Matovu, 2012). The set up costs associated with e-learning infrastructure are high (Paul & Balunywa, 2013) which may be explained by the limited provision of basic telecommunication infrastructure both at country and institutional level (Mutonyi & Norton, 2007; Gulati, 2008). Whereas some researchers have associated e learning with reduced costs (Luaran, Samsuri, Nadzri, & Rom, 2014; Panagiota Altanopoulou, 2014; Paul & Balunywa, 2013), others view e-learning programs to be more expensive than face-to-face programs (Marginson, 2004).

The Open University (London, England) associates the costs of online courses to be about 45% of that of face-to-face courses (Panagiota Altanopoulou, 2014). There are also concerns about the quality issues associated with e learning where many still consider eLearning to be inferior to face to face learning (Alkhadhr, 2017; Matovu, 2012) . eLearning reduces the face-to-face contact between teachers and friends (Luaran, Samsuri, Nadzri, & Rom, 2014). eLearning is associated with technical difficulties (Paul & Balunywa, 2013), may not be suitable for practical subjects (Matovu, 2012) and its success will largely depend on the learners' ability to manipulate a wide range of online of tools like wikis, blogs, forums and virtual meetings (Eze, Chinedu-Eze, & Bello, 2018).

RELATED LITERATURE

Hongjiang & Omamerhi (2007) studied the effectiveness of online learning program in a higher education institution in a sub urban town located in USA with a track record in offering online and distance learning programmed. They employed a qualitative approach and a phenomenological case study method to help them understand the learners' experiences and views on e-learning. The unit of analysis was the colleges studied. They used a sample of faculty and staff involved in online program to study how assessment and delivery methods employed can influence the effectiveness of online program, benefits and constraints experienced in e-learning. They identified the aspect of delivery methods as essential in supporting eLearning. The concluded that using user-friendly course materials and interactive technology aids eLearning. Baig (2011) carried out an experimental study on the effectiveness of online learning on students' achievement using a sample of 40 tenth grade students in physics. Twenty of the students attended face-to-face (experimental group) while 20 taught

online were in the control group. Baig (2011) found that students who studied using online tools performed better than students taught face to face.

This finding is in consonance with earlier research studies done by (Kiboss & Ogunniyi, 2005). This finding may however be disputed given that even students who study face to face can have access and indeed utilize online learning materials to aid their learning. However, his justification for this better performance needs not to be overlooked. Baig (2011) argues that the better performance posited by online students when compared to their face-to-face counter parts lies in part on the reality that online students have access to information and teaching material 24 hours and seven days in a week; and that these materials are made user friendly through animations and various interactive media from different online sources. Baig (2011) recommends a blended form of learning.

Trakru & Jha (2019) studied the effectiveness of eLearning in higher education using students in higher education institutions across gender, course and city. The study sample consisted of students studying MBA and Masters in computer complication who had knowledge about computer application and were being taught through eLearning. The stratified sampling technique was used to arrive at the desired sample. The data was collected using the self-designed questionnaire on a five-point Likert scale ranging from strongly disagree to strongly agree and analyzed using t-test and z-test.

The study findings revealed the existence of no significant difference in the effectiveness of e-learning among students undertaking different courses; across gender; across different courses and across cities. Eze, Chinedu-Eze, & Bello (2018) examined the adoption and utilization of e-learning facilities by lecturers in a Nigerian private tertiary institution (M-University) using a qualitative approach. The sample selection was purposively done based on the participant's presumed knowledge of the issue at hand. The findings revealed that e-learning facilities were adequate, accessible to users and most teachers were utilizing the e-learning infrastructure. The study recommended the need to constantly up grade and train staff in the use of the fast-changing e-learning technology.

Panagiota Altanopoulou (2014) investigated the effectiveness of a framed wiki-based learning activity using 139 university education students of a Greek education department. The study was guided by the technology acceptance model. The study findings revealed that students with a high number of logged wiki edits had a significantly higher learning gain compared to those that were less active. They reached a conclusion that properly designed; framed wiki-based activities have great potential in higher education. Shraim & Khlaif (2010) explored the potential of e-learning methods in conflict situation with mobility restrictions to enhance the educational process and to provide continuous learning for secondary school students in Palestine. The study findings revealed that both teachers and students had positive attitude towards the usefulness of e-learning methods much as they may be unwilling to adopt them. Authors like Masood et al., (2024) and Ashraf et al., (2023) conducted research on blended learning with specific interest in its application in the teaching of medical sciences.

The reviewed literature consists of studies related to e-learning done before the Covid-19 pandemic restrictions and where e-learning was more of a willed choice than the seemingly forced choice brought about by the lock down. We have found it necessary to investigate the perceptions of e-learning where the choice is more or less imposed by the circumstances than willed by the intended users. We therefore set out to achieve the following study objectives: 1) to establish the students' perceptions on the suitability of the eLearning environment 2) to explore the students' perceptions towards the suitability of ICT support facilities 3) to establish the lecturers' perceptions towards the suitability of the eLearning environment 4) to establish the lecturers' perceptions towards the suitability of ICT support facilities 5) to investigate whether there is a difference in perception towards the suitability of the eLearning environment between the students and lecturers 6) to investigate whether there is a difference in perception towards the suitability of the ICT support services between the students and lecturers

MATERIALS AND METHODS

Research design

This study followed a cross-sectional survey design as we aimed at establishing perceptions of both students and lecturers on the effectiveness of eLearning in the context of a private university known to have taken on

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue XII December 2024

eLearning during the Covid-19 lockdown. The study was largely quantitative in nature. The study's target population were both lecturers and students conveniently selected based on their willingness to participate. Twenty-four lecturers participated in the study of whom 15(62.5%) were males and nine (37.5%) were females. Sixty-three third year students across the university programs participated in the study of whom twenty-two 22 (34.9%) were males and forty-one (65.1%) were females. The study excluded students from the science-based disciplines given the technical nature of handling sciences online. The study was conducted over a four months period, from January 2021 to May 2021 where the first lock down in Uganda was eased to allow learning at all levels to continue in a staggered manner.

A self- administered questionnaire recommended for measuring views and impressions (Best & Khan, 1996) was used to collect information from the study sample; and distributed among the selected respondents using the drop and collect survey technique. E-learning effectiveness was measured in terms of positive perceptions (agreement) on items constructed on suitability of the eLearning environment and suitability of the ICT support in place. The data was collected using the self-designed questionnaire on a four-point Likert scale as opposed to the conventional five-point scale given that when an ordinal no response scale is used, some subjects tend to select the neutral response usually in the middle of the scale thereby avoiding making a real choice (Casley & Kumar, 1988). The reliability of the study instrument was established by running a Cronbach alpha coefficient where a value of 0.918 and 0.923 were obtained for students and lecturers instrument respectively.

Sources of data

Both primary and secondary data sources were employed. Primary data was obtained from the participating subjects using the researchers' own constructed questionnaire while secondary data was obtained through reviewing various literature on eLearning especially in higher education setting.

Data analysis

After the data collection process, the researcher edited, coded and entered the data in the excel sheet from where it was imported into Stata 12 software for the required analysis. To test perceptions, descriptive statistics were used while to test the difference in perceptions between students and lecturers, the two sample t test with equal variances was performed. Given that, our instrument followed a four-type Likert scale ranging from: 1. Strongly Disagree (SD) 2. Disagree (D) 3. Strongly Agree (SA) to 4. Agree (A), each computed mean was compared with the theoretical mean rating of 2.5. Response items, which had their computed means above 2.5, indicated respondents' agreement while items with a mean below 2.5 indicated respondents' disagreement with stated item (Nsoh & Amedorme, 2015).

The research process was guided by sound ethical principles that ensured voluntary participation of the respondents, respect, informed consent, anonymity and confidentiality of the provided information for only academic purposes.

RESULTS

Descriptive Statistics

Objective 1: Students' perceptions towards the suitability of the e-learning environment

This objective sought to establish the students' views on the existence of a suitable e-learning environment based on the reviewed literature on some of the aspects that would promote the success of e- learning. The findings are presented in Table 1.

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Table I: Students' perceptions on the existence of conditions that favor e-learning environment

Item	Obs	Mean	Std. Dev.	Decision
I have access to regular electricity	63	2.92	0.68	Agree
I am in possession of a smart phone	63	2.94	0.72	Agree
I have easy access to computer facilities	63	3.00	0.72	Agree
I can easily access internet while away from university	63	2.87	0.71	Agree
I have a subject class wats ap group	63	3.00	0.57	Agree
I have adequate knowledge on the use of the computer	63	3.02	0.68	Agree
I am happy with the way lectures are delivered online	63	2.68	0.64	Agree
The e-learning materials are user friendly	63	2.75	0.69	Agree
I can easily upload my assignments on the e-platform	63	3.10	0.67	Agree
Regular quizzes are provided during the course delivery	63	3.06	0.74	Agree
I prefer face to face to e-learning	63	3.38	0.71	Agree
I prefer to receive university information on my personal email than on university email	63	2.94	0.76	Agree
I regularly visit the e-learning system to check on updates	63	3.16	0.54	Agree
The ICT policy is enshrined in the University mission	63	3.10	0.67	Agree
The e-learning activities are engaging & motivating	63	2.92	0.83	Agree
I was adequately oriented in the use of e-learning system	63	2.86	0.76	Agree
E-learning makes the lesson interesting & easy to follow	63	2.81	0.74	Agree
Overall mean	**63**	**2.97**	**0.37**	**Agree**

Source: Primary data, 2021

Table 1 indicates that students are generally happy with the e-learning environment (overall mean of 2.97). The students can access computer facilities, are making good use of social media platforms like Wats ap groups, are provided with regular quizzes, regularly visit the e-learning platform, and on the whole described the e-learning environment as engaging and motivating. Much as the e-learning environment is rated as conducive, if chance exists for face-to-face learning, the students' preference will fall for face-to-face learning. This is not surprising given the existing theories that stress the important role played by the teacher in the student's learning process especially the aspect of personal contact between the teacher and the learner that tends to be missed out in the e-learning environment.

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Objective 2: Students' perceptions towards the suitability of the ICT support services

This objective sought to explore the students' views on the existence of a suitable ICT support services. The findings are presented in Table 2.

Table 2: Students' perceptions towards the suitability of the ICT support services

Item	Obs	Mean	Std. Dev.	Decision
I am happy with the University mode of communication	63	2.97	0.62	Agree
The staff is very supportive during the e-learning sessions	63	2.97	0.57	Agree
I am proud of the University counseling services	63	2.97	0.59	Agree
I am aware of the ICT support desk	63	3.08	0.58	Agree
The ICT support desk is very supportive	63	3.06	0.54	Agree
I regularly make use of the University e-resources	63	2.98	0.66	Agree
I have a university email address	63	3.24	0.56	Agree
I regularly check on my university email address	63	3.08	0.60	Agree
Lecturers use a variety of assessment methods e.g. quizzes	63	3.02	0.63	Agree
There is continuous training in the use of e-learning	63	2.81	0.76	Agree
I was provided with e-learning training before starting e-lessons	63	2.97	0.74	Agree
Overall mean	**63**	**3.01**	**0.46**	**Agree**

Source: Primary data

The students' have a positive perception of the university ICT support (overall mean of 3.01). Students are aware of the existence of the ICT support desk, personal university emails were created for each student, and training in eLearning was provided prior to the start of the e-lectures.

Objective 3: Lecturers' perceptions on the suitability of the e-learning environment

This objective sought to establish the lecturers' views on the existence of a suitable e-learning based on known aspects from the literature that tend to promote successful e- learning. The findings are presented in Table 3.

Table 3: Lecturers' perceptions on the suitability of the e-learning environment

Item	Obs	Mean	Std. Dev.	Decision
I have access to regular electricity	24	3.58	0.58	Agree
I am in possession of a smart phone	24	3.67	0.48	Agree
I have easy access to computer facilities	24	3.50	0.51	Agree
I can easily access internet while away from university	24	3.46	0.51	Agree

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I make use of the students' wats ap groups	24	3.33	0.48	Agree
I have adequate knowledge on the use of the computer	24	3.29	0.46	Agree
I am happy with the way I deliver lectures online	24	3.29	0.55	Agree
The learning materials are user friendly	24	3.33	0.56	Agree
Students can easily upload assignments on the e-platform	24	3.29	0.46	Agree
Regular quizzes are provided during the course delivery	24	3.38	0.49	Agree
I am competent enough to deliver e-learning lectures	24	3.46	0.51	Agree
I prefer face to face to e-learning	24	3.38	0.58	Agree
I prefer to receive university information on my personal email than on university email	24	3.00	0.88	Agree
I regularly visit the e-learning system to check on updates	24	3.29	0.55	Agree
The ICT policy is enshrined in the University mission	24	3.21	0.72	Agree
The e-learning activities provided are engaging & motivating	24	3.17	0.64	Agree
I was adequately oriented in the use of e-learning system	24	3.17	0.48	Agree
E-learning makes the lesson interesting & easy to deliver	24	3.13	0.45	Agree
Overall mean	24	3.33	0.33	

Source: Primary data

The lecturers have a positive perception towards the suitability of the e-learning environment (overall mean of 3.33). The lecturers possess smart phones, have access to regular electricity, access to computer facilities, access to internet while away from the university and felt confident to deliver eLearning lectures. The lecturers however if given a choice would prefer face to face to eLearning lectures.

Objective 4: Lecturers' perceptions on the suitability of the ICT support services

This objective sought to establish the lecturers' views on the existence of a suitable ICT support services. The findings are presented in Table 4.

Table 4: Lecturers' perceptions on the suitability of the ICT support services

Item	Obs	Mean	Std. Dev.	Decision
I am happy with the University mode of communication	24	3.29	0.55	Agree
The staff is very supportive during the e-learning sessions	24	3.50	0.51	Agree
I am proud of the University counseling services	24	3.33	0.48	Agree
I am aware of the ICT support desk	24	3.33	0.48	Agree

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The ICT support desk is very supportive	24	3.42	0.50	Agree
I regularly make use of the University e-resources	24	3.29	0.46	Agree
I have a university email address	24	3.38	0.49	Agree
I regularly check on my university email address	24	3.46	0.51	Agree
Lecturers use a variety of assessment methods e.g. quizzes	24	3.29	0.46	Agree
There is continuous training in the use of e-learning	24	3.42	0.50	Agree
I was provided with e-learning training before starting e-lessons	24	3.38	0.49	Agree
Overall mean	24	3.37	0.34	Agree

Source: Primary data

There is a positive perception among the lecturers on the ICT support services in place (overall 3.37). The lecturers not only obtain support from the ICT support desk but also from fellow lecturers.

Objective 5: To investigate whether there is a difference in perception towards the e-learning environment between the students and lecturers

To achieve this objective, we state both null and alternative hypotheses thus:

Ho: There is no significant difference between the students and lecturers' perceptions towards the suitability of the eLearning environment

Ha: There is a significant difference between the students and lecturers' perceptions towards the suitability of the eLearning environment

Table 5: Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval
Students	63	2.970	0.046	0.366	2.878	3.062
Lecturer	24	3.329	0.067	0.329	3.190	3.468
combined	87	3.069	0.042	0.389	2.986	3.152
Diff		-0.359	0.085		-0.529	-0.189

diff = mean (Students)-mean (Lecturer) t = -4.1943

Ho: diff = 0 degrees of freedom = 85

Ha: diff < 0 Ha: diff ! = 0 Ha: diff > 0

Pr (T < t) = 0.0000 **Pr (T > |t|) = 0.0001** Pr (T > t) = 1.0000

There is a significant difference between the students and lecturers' perceptions on the suitability of the eLearning environment (p=0.0001<0.05). We thus reject the null.

Objective 6: To investigate whether there is a difference in perception towards the suitability of ICT support services between the students and lecturers

To achieve this objective, we state both null and alternative hypotheses thus:

Ho: There is no significant difference between the students and lecturers' perceptions towards the suitability of the ICT support services

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Ha: There is a significant difference between the students and lecturers' perceptions towards the suitability of the ICT support services

Table 6: Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Students	63	3.013	0.057	0.456	2.898	3.128
Lecturer	24	3.371	0.069	0.339	3.228	3.514
combined	87	3.112	0.049	0.455	3.015	3.209
Diff		-0.358	0.103		-0.562	-0.154

diff = mean (Students) - mean (Lecturer) t = -3.4915

Ho: diff = 0 degrees of freedom = 85

Ha: diff < 0 Ha: diff! = 0 Ha: diff > 0

Pr (T < t) = 0.0004 **Pr (|T| > |t|) = 0.0008** Pr (T > t) = 0.9996

There is a significant difference between the students and lecturers' perceptions on the suitability of the ICT support services (p=0.0008<0.05). We thus reject the null.

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

Discussions

Students' perceptions towards the suitability of the e-learning environment

There exists a suitable eLearning environment supported by the students' ease of access to computer facilities. This is possible as those who may lack computers can borrow from relatives and friends. The students have made good use of social media platforms to keep in close contact with both their lecturers and fellow students. The eLearning platform is interactive and students are making good use of it. This description of the eLearning environment supportive as being suitable echoes the findings in the studies done by (Kiboss & Ogunniyi, 2005; Baig, 2011; Eze, Chinedu-Eze, & Bello, 2018; Hussain, Zhu, Zhang, & Abidi, 2018; Wu, Chen, & Chen, 2017; Shraim & Khlaif, 2010).

It is however interesting to note that despite the students regarding highly the existence of the conducive e-learning environment, they still would prefer face-to-face learning to eLearning. This is not surprising given the existing theories that stress the important role played by the teacher in the student's learning especially that aspect of personal contact between the teacher and the learner that tends to be missed out in the e-learning environment. We therefore support the idea that where circumstances allow, for instance in cases of partial lock down where students are allowed to access their institutions in a staggered way, a blended form of learning be planned as advocated for by earlier researchers like (Baig, 2011).

Students' perceptions towards the suitability of the ICT support services

The students depicted a positive perception towards the university ICT support services. The university was credited for having ICT support desk that is functional. Prior to be being enrolled into eLearning, efforts were made to train the students and continuous support is provided as and when necessary. The staff involved in eLearning provides the necessary support to the learners and the teaching learning process is made interesting through the various teaching methodologies adopted by the lecturers. The students' positive perception towards the university ICT support services is in line with earlier studies done by (Shraim & Khlaif, 2010; Eze, Chinedu-Eze, & Bello, 2018). The ICT support may however be hampered where students are not able to access the internet, or may lack data or in cases of power failures especially in rural areas.

Lecturers' perceptions towards the suitability of the e-learning environment

The lecturers' perception towards the suitability of the e-learning environment was positive (Overall mean of 3.33). The lecturers have the necessary tools and gadgets to support eLearning.

The lecturers are able to develop user-friendly eLearning materials that make learners engaged and motivated to learn, are able to provide regular quizzes to their learners, which makes the learning more interactive and motivating. This finding is consistent with studies on the requirements of eLearning effectiveness done by earlier researchers like (Wu, Chen, & Chen, 2017; Zhang, 2004). However, like the students they teach, lecturers prefer face-to-face learning to eLearning if a choice was possible. It is thus imperative that in the new normal, policy makers endeavor to interest lecturers into integrating eLearning methodologies in all their professional instructional practice. We strongly believe that if eLearning becomes an integral part of the lecturers' professional practice, they would steadily fall in love with eLearning methodologies and thus strive to make their lectures more interactive. Interactive teaching makes learning more interesting and is supported by several researchers (Hussain, Zhu, Zhang, & Abidi, 2018; Wu, Chen, & Chen, 2017; Panagiota Altanopoulou, 2014).

Lecturers' perceptions towards the suitability of the ICT support services

There was a general agreement among lecturers on the suitability of the existing ICT support services. The lecturers are able to use several online tools to help increase learners' engagement in eLearning. This is line with (Hongjiang & Omamerhi, 2007; Baig, 2011; Hussain, Zhu, Zhang, & Abidi, 2018; Panagiota Altanopoulou, 2014). Lecturers in need of additional support can easily obtain it from the ICT desk, which has technical staff that facilitated the pre and ongoing training sessions in eLearning.

Ho1 Hypothesis testing: There is no significant difference between the students and lecturers' perception towards the e-learning environment

The results indicated the existence of a significant difference between the students and lecturers' perceptions on the suitability of the eLearning environment ($p=0.0001<0.05$). The null hypothesis was rejected. These findings are contrary to (Trakru & Jha, 2019) who found no significant difference across gender, course and city students among students in higher education institutions studied. This may be explained given that the study involved a homogenous group (only students) while our study attempts to compare the perceptions of the students and lecturers (Heterogeneous groups). The difference in perception may be explained based on the unique characteristics of these two groups we study. The lecturers can be categorized as a working population that can easily access key eLearning support materials while the students on the other hand can be described as a largely dependent group that mostly rely on others to access the necessary eLearning materials. It can also be argued that the students and lecturers view certain things differently probably based on their state of readiness. For instance, whereas students were not very happy with the way online lectures are delivered and the user friendliness of the eLearning materials, the lecturers posted a higher mean on both of these items.

Ho2 Hypothesis testing: There is no significant difference between the students and lecturers' perception towards the suitability of ICT support

The results indicated the existence of a significant difference between the students and lecturers' perceptions on the suitability of the ICT support services ($p=0.0008<0.05$). The null hypothesis was rejected. The reasons for this observed difference are not very different from those already cited under Ho_1 which we basically attribute the differences in the state of readiness between the students and their lecturers. This difference as earlier noted can be traced from their unique status broadly classified as the difference between the working (lecturers) and the dependents (students). Some specifics leading to this apparent difference in perception of the suitability of the ICT support services was evident from the level of perception in the support provided by the ICT support desk during the eLearning sessions, the use of e-resources, the use of the university email address and the refresher sessions on eLearning.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue XII December 2024

CONCLUSIONS

Students perceive the eLearning environment as suitable if conditions that facilitate eLearning like have access to a computer are in place. The students perceive the university ICT support services as being effective as continuous online support is provided to the students. This support is not only from the ICT technical desk, but also from the lecturers that were described as being supportive to the eLearning program. The lecturers have a positive perception towards the existing e-learning environment since they have access to the basic requirements for effective learning like possession of a smart phone and access to internet facilities. Just like their students, lecturers still have a high preference for face-to-face learning compared to eLearning methodologies. The unique characteristics between the students (dependent group) and their lecturers (working group) may be used to explain the apparent significant differences in their perceptions as reported in the study.

RECOMMENDATIONS

The study makes the following recommendations:

1. The university policy framework should be strengthened to reward those who endeavor to make use of eLearning methodologies. This may enable the universities to make eLearning part and partial of the university teaching learning culture. Lecturers should be supported continuously to make eLearning more interactive, as the findings clearly indicate that students despite having positive perceptions towards eLearning still prefer face-to-face learning to eLearning.
2. There is need to strengthen the university ICT support services. Both students and lecturers often get demotivated to continue with eLearning once they cannot access timely support, they need during their interaction with the eLearning platform.
3. There is need for the University management to engage with internet service providers to get subsidized rates. This would greatly reduce the high data costs that renders eLearning prohibitive to the financially disadvantaged students. The training of lecturers in designing offline videos is recommended to solve the problems of internet access
4. There is a need to create an enabling environment that allows lecturers to access the necessary eLearning tools and equipment like computers and smart phones at subsidized prices. Continuous support should be accorded to the lecturers on how to make eLearning more interactive and become more or less like a real face-to-face interaction. Policies that promote more personalized eLearning such as real time online video lectures should be promoted by the institutions negotiating with government to make not only internet access within reach of most students but also bargain for data free access for study programs.
5. There is need for the government to support eLearning by waiving taxes on eLearning materials, provide loans to enable students acquire the necessary eLearning equipment like smart phones and computers, ensure that internet access is expanded throughout the country to avoid creating inequities in education access. Training and re-training should be provided to the ICT support desks in the various institutions of higher learning to get abreast with current trends in eLearning software.
6. This was an exploratory study. We recommend future studies capturing more private Universities offering both Arts and Science related disciplines

Declaration of conflicting interests

We have no known existing conflict of interest

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

Data availability

Available on request

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