University e-learning methodologies and their financial implications: evidence from Uganda

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Abstract

Purpose – This paper aims to analyze the financial implications associated with Ugandan universities employing e-learning techniques and to suggest sound policy solutions to the problems the investigation found.
Design/methodology/approach – To illustrate how e-learning is used in Uganda, the study used a descriptive research design. The study used a quantitative methodology to highlight the various experiences associated with utilizing e-learning platforms from various universities. A questionnaire survey was distributed to university students, and the data were analyzed using descriptive statistics in order to understand the usage of e-learning and Persons correlation to understand the degree of the relationship between the study variables.
Findings – The study findings reveal that e-learning approaches in universities are favorably correlated with their financial implications ($r = 0.598$; p-value 0.05). It was excruciatingly difficult to access online learning resources and platforms, and there was a severe lack of power. Some academic staff members lacked adequate e-learning platform training, and students noted that e-learning eased communication between students and lecturers, whereas Internet subscription and acquisition of mobile devices were expensive.
Research limitations/implications – The research was limited to three districts in western Uganda, and thus, it may not be possible to extrapolate the results to the entire nation.
Practical implications – Universities are open to these changes since the digital world is moving more quickly, overall, and this trend has crept into education as well. Policymakers and other universities may utilize the study's findings to inform their decisions.
Originality/value – The study offers useful insights into how e-learning systems have altered university teaching methods.

Keywords University education, Digitalization in universities, E-learning, Financial implications, Information and communications technology

Paper type Research paper

Introduction

The majority of educational institutions around the world are gradually adopting e-learning techniques using a variety of media, including interactive technologies, television, postal linkages and radios (Kentnor, 2015). Despite the fact that the majority of Ugandan universities now employ e-learning methodologies, many of them are still committed to the

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conventional teaching methods of in-person lectures in classrooms. However, universities have begun using e-learning systems in the spirit of ensuring that everyone has access to university education. This was not very common in many universities, particularly in western Uganda, with some supporters arguing that e-learning methodology was for the rich and that it had a significant financial cost associated with its implementation. In the modern world, changes in educational policy, access to digital services, the availability of broad mobile internet connectivity and development of digital skills have all become requirements (Trucco and Palma, 2020). Although the availability of widespread mobile connections has helped most economies significantly reduce the gaps in accessing digital services, significant gaps still exist in the availability of digital materials and services, which have a significant impact on the ability of the next generation to take advantage of such opportunities (ECLAC, 2019). Despite widespread adoption of the e-learning system, there is still a low adoption rate and limited utilization of it in universities, where some students are believed to be hesitant to use the new technology (Al-Khasawneh and Obeidallah, 2019). Internet service providers were prompted to introduce zero-rated offers to the general public and special bundles for students and universities to access internet services in an effort to lessen the financial cost and burden of internet connectivity to all stakeholders in accessing e-learning platforms (Joosub, 2020). The kind deed has made it simpler for students to do their study using online learning platforms, which has boosted the effectiveness of university instruction.

The goals of this study were to evaluate the difficulties college students have using e-learning techniques, to look at the financial effects of using e-learning among university students and to determine the link between utilizing e-learning methodologies and its financial implications among university students. The majority of universities had not yet looked at the idea of e-learning approaches, before and during the COVID-19 pandemic. Many universities began using this teaching approach during and after the epidemic, although it was highlighted that they had not taken into account the idea of the financial implications linked to the e-learning methodology. The results of this study may be used by academic institutions and governments to create better regulations that could encourage e-learning at various universities around the nation.

Literature review

E-learning methodologies

All interested parties have exploited the theme of digitalization in universities, and professionals should be ready to employ information and communication technology (ICT) in the production of their services while addressing new issues in their line of work (Bond *et al.*, 2018). The ability to utilize digital technology as effectively as possible is what might be summed up as the digitalization of e-learning by universities (Kopp *et al.*, 2019). Students' increased reliance on technology has given rise to new sorts of learners who have demonstrated greater ICT proficiency than earlier generations who were less exposed to technology and found it difficult to catch up with it (Orlando and Attard, 2015). E-learning is defined by Singh and Thurman (2019) as experiences in synchronous or asynchronous learning using a variety of internet-connected devices, such as computers or smartphones. In this situation, students can attend lectures with real-time interaction from professors or instructors and receive immediate feedback. The universities have seen a reduction in students in face-to-face lectures in favor of e-learning as the working class who are interested in returning to school consider this form of learning as more suitable for them (Seaman *et al.*, 2018). Although e-learning courses have been praised by students for its convenience, allure and flexibility, rural students find the program difficult to use because of the low broadband access in their area (Muthuprasad *et al.*, 2021).

According to Turnbull *et al.* (2021), universities should begin embracing e-learning because it offers additional advantages such as higher information delivery quality,

flexibility, increased student technological understanding and improved learning outcomes. To be relevant in the setting of rapidly evolving ICTs, learners and instructors need to be inspired to comply with digital waves (Omotayo and Haliru, 2020). The myth that e-learners are incompetent and do not require assistance from anybody in completing their assignments is dispelled by e-learning, which enables students to be self-assured and independent (Beneyene *et al.*, 2020). Universities now have more options to teach and do research because most information is now readily available thanks to ICT advancements (Agostini and Nosella, 2020).

Financial implications on e-learning methodologies

Universities must provide financial support because the switch from the conventional face-to-face educational system to the contemporary e-learning system and the mapping of knowledge to learners has proven to be more complicated (Darling-Hammond *et al.*, 2020). E-learning is expensive from the standpoint of the learner because it requires financial support, which the majority of students lack. The enormous expense of acquiring the technologies required to assist learning is borne by the learners. The cost of tuition varies significantly depending on whether a student attends face-to-face lectures on campus or via e-learning (Griffin and McGuire, 2017). The administration argues that the differences in fee payments are acceptable because e-learning course delivery was more expensive than face-to-face course delivery (Legon and Garret, 2017). From a university's standpoint, e-learning, the development of human capital, the creation of material and the acquisition of necessary technology and its upkeep come at a high cost in terms of both time and money (Affouneh *et al.*, 2020). Universities are free to create user-friendly e-learning platforms that are simple to use and maintain, and it should be highlighted (Alshurafat *et al.*, 2021).

Some nations that first maintained their education budgets have now slashed the price by half as a result of the increase in the price of building e-learning infrastructure (OECD, 2013). The majority of the instructors' wages and classroom equipment purchases have been impacted by the budget decreases. The opinions expressed in the organization of economic cooperation and development (OECD) nations are in line with those of Jackson *et al.* (2018), who found out that e-learning and university enrollment rates are both marginally negatively impacted by budget cuts to public education. Al-Samarrai *et al.* (2019) demonstrate consistent patterns in spending reductions on education in Madagascar and Malawi, which have a negative impact on university learning and enrollment. The authors, however, do not take into account the decline in e-learning approach adoption. In a similar vein, the World Bank (2020) determined that household spending on education has been impacted by the economic recession of 2020, but the survey does not say whether or not employing e-learning methodologies is what is driving the decrease in family spending on education. Reductions in government spending on university education have an impact on service delivery and the speed of the economy's recovery, according to the World Bank (2018). However, the survey did not make a connection between this decline and the use of e-learning platforms.

Low enrollment and tuition fee collection rates make it difficult to fund the development of e-learning teaching methods and programs, which have been ongoing (Kentor, 2015). Due to its effectiveness and flexibility, e-learning can reduce the disparities in access to university education despite the challenges associated with using it (Maphalala and Adigun, 2021). Some academics have also hypothesized that giving funding to educational institutions could lower the number of students who drop out of school because they use computers and smartphones for e-learning (Snilstveit *et al.*, 2015).

Challenges faced by university students while using e-learning methodology

High-bandwidth connectivity has been a problem for universities on the infrastructural side, especially in rural places, which has an impact on e-learning. Access to online education has

risen thanks to mobile internet connectivity, yet student smartphone addiction may be damaging to their health (Porter *et al.*, 2016). Its flexibility is hampered by limited and inadequately equipped computer labs, a lack of online engagement time, insufficient IT knowledge and the rejection of copyrights for already created e-learning systems and teaching materials (Mutisya and Makokha, 2016).

These issues must be resolved quickly if all students are to take advantage of the potential that e-learning has generated. For instructors and students, inadequate digital tools, bad internet connectivity or WI-FI connections are problematic. This could result in missed opportunities because not all users can simply use internet services when they need them (Dhawan, 2020). The majority of students are now more interested in e-learning due to its advantages and flexibility, but face-to-face interactions and relationships between instructors and students are constrained by e-learning (Joshi *et al.*, 2020). The use of an e-learning management system by lecturers and students is still not at a high level of readiness despite the fact that e-learning is a relatively recent occurrence in the field of education (Parkes *et al.*, 2014).

Many academic staff members were underprepared and unable to completely understand the concepts of e-learning, which made it difficult for them to learn how to use the platform, despite institutions' best efforts to embrace ICTs by offering equal learning techniques (Rucker and Downey, 2016). The transition from modern face-to-face learning to digital learning has presented difficulties, including the need for learners, teachers and administrators to adapt their perspectives in order to use e-learning systems effectively (Ribeiro, 2020). In some cases, students have trouble accessing materials that have been developed and put on e-learning platforms and also do not understand the modules' contents (Bovill, 2020). In a study carried out in Pakistan by Kanwal and Rehman (2017), it was found that system characteristics, internet experience and computer self-efficacy were some of the issues that affected the effectiveness of e-learning. Bwire *et al.* (2020) conducted their research in Ugandan universities and found that internet connectivity, insufficient infrastructure and power supply all had an impact on how effective e-learning was. E-learning at universities has been severely impacted by the administration of quality control systems and standards, e-content generation and delivery and e-resources to learners (Kebritchi *et al.*, 2017).

E-learning has its challenges and may not be employed as well in some academic disciplines that require practicability (Murphy, 2020). Medical students who work with patients are a good example of this. According to Leszczynski *et al.* (2018), e-learning may not be appropriate for clinical courses but may enhance in-person instruction. The difficulties that external students who use e-learning methods must overcome include collaborative group work, group assessments and group learning strategies (Davidson, 2015).

Strategies that may improve e-learning at a higher institution of learning

Although e-learning can be used in conjunction with conventional face-to-face methods to give them a competitive edge over other approaches, the face-to-face traditional style of teaching cannot be fully eliminated (Barboni, 2019). To match traditional face-to-face learning, which most people still consider to be the greatest, the quality of e-learning needs to be raised (Palvia *et al.*, 2018). This would guarantee that e-learning is acknowledged, gains equal credibility and blends in with all other forms of instruction. Universities should make significant investments in e-learning infrastructure development, content creation, staff capacity building and altering the mindset of both students and lecturers while also raising awareness of e-learning approaches to teaching (Mutisya and Makokha, 2016). It is crucial that the course structure be in line with the use of e-learning so that students may transition to e-learning classes with more ease, fun and satisfaction (Al-Rahmi *et al.*, 2019). This viewpoint is in line with that of Alshurafat *et al.* (2021), who contend that institutions have to promote

the use of e-learning by lecturers and students by creating training programs that outline its advantages.

Alumalai *et al.* (2020) posit that universities need to focus on improving the course content, design, social support and improving technologies that enhance the quality of e-learning. It is the responsibility of university administrations to teach students the next-generation digital competence. Almaiah and Alismaiel (2019) opine that the success of e-learning at university would depend on the students' willingness to use the ICT system, whereas Almaiah and Al-Khasawneh (2020) reveal that inadequate usage of e-learning systems may hinder the benefits realized from its usage. E-learning would be sustainable when more hybrid instructional materials are provided and the challenges that prompted the universities to explore the opportunities for using e-learning were overcome (Adedoyin and Soykan, 2020). Bao (2020) opines those strategies that would improve e-learning may include a well-thought-out plan that deals with unexpected interruptions that may disorganize e-learning platforms, effective delivery of e-learning instructional information, provision of enough support by the university to lecturers and students and high-quality participation in improving the breadth and depth of students' learning.

When more hybrid instructional materials are offered and the difficulties that motivated universities to investigate the possibilities for adopting e-learning are resolved, e-learning will be viable (Adedoyin and Soykan, 2020). According to Bao (2020), the best e-learning strategies include having a well-thought-out plan in place for dealing with unforeseen interruptions that could cause e-learning platforms to become disorganized, effectively delivering e-learning instructional content, giving lecturers and students enough support from the university and high-quality participation in enhancing the breadth and depth of students' learning. The implementation of digital technology may necessitate the cooperation of all stakeholders, the organization of knowledge, the development of trust and strategic planning by all parties who may be engaged (Cameron and Green, 2019).

ICT administrators or management should offer a platform where feedback is supplied to all parties involved and where students are given administrative support (Raju and Phung, 2018). Knowledge sharing, trust, innovation and quality are some of the characteristics that are thought to contribute to students' acceptance of e-learning and the creation of a better e-learning environment (Salloum *et al.*, 2019). According to Eze *et al.* (2020), technological aspects including speed, accessibility, usability, service delivery, support for training, diversity and environmental elements would be highly ideal in enhancing e-learning at the institution. Students' use of e-learning resources may also be influenced by user attitudes, impact-related concerns like skill development, learning experience and level of engagement. According to Eze *et al.* (2018), universities should regularly upgrade their e-learning technologies and conduct staff development to help staff members keep up with technological advancements and make the most of ICT usage.

Methodology

This study used a descriptive research methodology to show how e-learning is used in Uganda as an example of a developing nation. The study was done in chosen universities in western Uganda. The study used a quantitative methodology to highlight the distinct e-learning usage experiences from various colleges. A sample size of 320 students was selected for the study from a target population of 20, 000 students, using sample size determination tables created by Krejcie and Morgan (1970). The data were gathered using a standardized questionnaire. The financial implications of e-learning were examined in terms of "perceived cost of acquiring and applying digital technology," whereas its use was measured in terms of "ability to apply digital technology." The literature review served as the source for the questionnaire's questions. Controls for data quality were made, with a focus on

validity and reliability. In order to comprehend the relationship between the adoption of e-learning methods and financial implications, the study used descriptive statistics and Pearson's correlation to assess the strength of the relationship. The reliability statistics are shown in Table 1.

The total dependability coefficient (alpha) of 37 items was 0.755. According to the statistics, every component employed to examine the use of e-learning and its financial implication was internally stable and capable of producing reliable results. Particularly, the items pertaining to the use of e-learning and its financial implications were more internally stable than the items pertaining to the difficulties associated with its use. Because they were created in a clear, concise and understandable manner, the items on e-learning usage and financial implications were stable.

Results

The majority of participants, 60.2% of males and 39.8% of women, may have been as a result of the unequal proportion of men and women enrolling in Uganda's universities. The majority of participants (47.6%) were under the age of 20 years, followed by 42.5%, who were between the ages of 20 years and 24 years. Only 17.7% of participants had very good ICT experience, whereas the majority of participants (36.4%) had decent ICT experience. In terms of education, the majority of students (58.8%) had bachelor's degrees. In addition to the 6.1% of diploma students, 13.6% were Ph.D. candidates. The bulk of the participants (48.3%) used laptops to access e-learning materials, while 41.2% made use of mobile devices. In terms of internet connectivity, 49.9% had very slow internet connectivity and were the majority. Only 13.3% of people reported having good internet connectivity. Fifty-one percent of respondents who were asked how they accessed assignments did so via email, 29.9% used e-learning management systems and 19.0% used websites. This implies that professors have not adapted to e-learning management systems.

The study determined how well people could use digital technology. This demonstrates how widely e-learning techniques are used. The results are summarized in Table 2.

The majority (74.8%) of participants who were asked about their opinions on the use of e-learning systems agreed that it was practical. This resulted from universities' promotion of e-learning techniques. In addition to e-practicality, learning the technology made it easier for students and professors to communicate and allowed them to learn at any time. Only 22.1% of respondents verified possessing the hardware required to execute e-learning programs, which is the lowest possible number. The majority of students argued against having the required hardware to perform an e-learning program. This was due to the expense and challenges in gaining access to the hardware.

In order to characterize the financial application of e-learning systems, this study employed the term "perceived cost of acquisition of digital technology." The results are summarized in Table 3. Because the coefficient of variance (CV) reflects the ratio of standard deviation (SD) to mean and is a useful statistic for measuring the degree of variance from the mean, as can be seen below, the study employed CV, SD and mean.

Variable	Cronbach's alpha	N of items
E-learning usage	0.784	13
Financial implication	0.802	12
Challenges of e-learning adoption	0.680	12
Overall	*0.755*	*37*

Table 1.
Reliability statistics

Source(s): Field data, 2022

Variable list; $N = 294$	D	NS	A
1. e-learning is very practical	16.3	8.8	74.8
2. I communicate easily with my lecturers during e-learning sessions	23.8	5.8	70.4
3. With e-learning, I can learn any time I feel like	21.4	8.2	70.4
4. Web-based learning materials are easy to access	19.3	10.9	69.7
5. I have the software necessary to run e-learning programmes	20	10.5	69.4
6. With e-learning, I can learn from anywhere I feel like	17.6	12.9	69.4
7. I find it easy to interact with my fellow students during e-learning sessions	21.7	10.5	67.7
8. I find it easy to interact with my lecturers during e-learning sessions	18.3	14.3	67.3
9. My device has the required speed to run e-learning programmes	25.8	8.5	65.7
10. I find it easy to access the digital content I need for my learning needs	20.1	14.3	65.7
11. I find it easy to participate in an e-learning session	26.2	13.3	60.5
12. Web-based learning materials are easy to use	26.5	13.9	59.5
13. I have the hardware necessary to run e-learning programmes	72.1	5.8	22.1
Average	*25.3*	*10.6*	*64.0*

Note(s): D = disagreement; NS = not sure; A = agreement

Table 2.
E-learning techniques

Variable list; $N = 294$	Mean	Std. deviation	CV (%)
1. Computer software	4.061	0.828	20
2. Computer equipment	4.017	0.929	23
3. Internet subscriptions	3.884	0.953	25
4. Mobile devices	3.827	1.009	26
5. Access to digital materials	3.823	1.017	27
6. Staff training	3.823	0.961	25
7. Internet accessories	3.769	0.971	26
8. Installation of software	3.765	1.050	28
9. Computer laboratory equipment	3.752	1.143	30
10. Online data security	3.694	1.169	32
11. Computer training	3.622	1.053	29
12. E-library resources	3.497	1.239	35
Average	*3.822*	*1.008*	*26*

Source(s): Field data, 2022

Table 3.
Financial implication

The table above displays the findings' means for computer software as mean = 4.061; CV = 20% and computer equipment as mean = 4.017; CV = 23%. This also demonstrates that the two items were the most expensive when university students used e-learning. Students also found internet connections and the purchase of mobile devices to be pricey in addition to computer software and equipment. Because the majority of these things were imported and some tax was attached to them, they seemed to be pricey. Participants rated e-library resources as the least expensive component of using an e-learning system from lowest to highest (mean = 3.497; CV = 35%). Due to the fact that the majority of universities have purchased access to e-library resources, they looked to be the least expensive. Therefore, students automatically signed in and found any electronic resource of interest as long as they have access credentials. They did not pay any upfront fees to get this information. The coefficients of variation show that computer software was the most expensive, while e-library resources were the least expensive.

The implementation of e-learning faces a number of difficulties, according to this study. The results are summarized in Table 4.

According to the mean ratings, accessing e-learning resources was the most difficult aspect of utilizing it (mean = 3.884; CV = 26%). Due to poor internet connectivity and

Variable list; $N = 294$	Mean	Std. deviation	CV (%)
1. Difficulty accessing e-learning materials	3.884	0.995	26
2. Unpreparedness of lecturers	3.864	1.075	28
3. Limited power supply	3.844	0.954	25
4. Insufficient interaction online	3.755	1.148	31
5. Lack of practicality in learning	3.728	1.026	28
6. Inadequate information and technology skills	3.714	1.139	31
7. Poorly equipped computer laboratories	3.605	1.154	32
8. Bandwidth connectivity	3.517	1.141	32
9. Infrastructure	3.449	1.175	34
10. Internet connectivity	3.367	1.169	35
11. Addiction to smartphones	3.238	1.421	44
12. Inadequate digital tools	3.037	1.237	41
13. Cost of adopting e-learning	1.918	0.274	14
Average	*3.479*	*1.007*	*29*

Source(s): Field data, 2022

Table 4.
Challenges of adopting e-learning

expensive internet bundles, students have trouble accessing e-learning materials. The data also showed that lecturers were not well prepared for online instruction and that there was a restricted supply of electricity. Because of the poor resources provided by e-learning centers and the lack of assistance from e-learning support employees, online lecturers often came across as unprepared. As seen from the lowest extreme, adopting e-learning did not seem to present a significant challenge (mean = 1.918; CV = 15%). Students may not think using e-learning is expensive because the institution provided the infrastructure and software. While the mean ratings revealed that access to e-learning resources posed the most hurdle to using the system, a critical analysis of the coefficient of variance suggested that the biggest obstacle was the cost of the materials. E-learning was costly for students in terms of internet bundles.

The purpose of the study was to determine how the financial implication of e-learning on university students related to each other. The results are summarized in Table 5.

Dependent variable: financial implication

The financial impact of e-learning at universities is favorably correlated with its use ($r = 0.598$; p-value 0.05). Statistics indicate that the deeper the e-learning tools are going to penetrate university students' pockets, the more of them they would likely adopt. The significant value, which is less than 0.05, is crucial because it indicates a linear relationship between the use of e-learning and its financial implication. According to the statistic

	Unstandardized coefficients		Standardized coefficients		
	B	Std. Error	Beta	*T*	Sig.
(Constant)	1.834	0.156		11.753	0.000
Adoption of e-learning	0.566	0.044	0.598	12.764	0.000
R	0.598				
R^2	0.358				
Adjusted R^2	0.356				
Std. The error in the estimate	0.465				

Note(s): (Constant), Adoption of e-learning

Table 5.
Regression coefficients

($R^2 = 0.358$), students who use e-learning experience a financial impact of 35.8%. This implies that other factors may have an impact on students' ability to pay tuition fees at universities in western Uganda. According to beta = 0.598; p-value 0.05, a one-unit shift in employing e-learning approaches is anticipated to have a 59.8% impact on the financial implication among students in universities in western Uganda. This is assuming that the two variables are expressed in equivalent units.

Discussion of results

The study looked into how university students used e-learning approaches and discovered that the majority of them thought it was useful. Because accessing, participating in and controlling an e-learning session all depend on ICTs, e-learning is actually quite practical. Those who lacked these practical abilities were probably left behind. The results of research on the viability of e-learning confirm Orlando and Attard's (2015) findings that rising levels of digitalization have given rise to new types of learners who have demonstrated ICT competences in contrast to earlier generations, who were largely untrained in this area and could not readily adapt to the new wave of ICTs. However, certain academic staff members were found to be lacking in ICT abilities when e-learning methods were introduced at universities. Rucker and Downey (2016) discovered that the majority of the academic staff lacked ICT skills and had trouble understanding the idea of e-learning.

In addition to the usefulness of e-learning, the system made it easier for students and professors to communicate, and students could learn at any time. Because e-learning could be done on basic devices like smartphones, its use was made a little easier. This supports Singh and Thurman's (2019) claim that all you need for an online learning experience is a smartphone. This makes it simple for students to interact with their lecturers. In this situation, students can attend lectures with real-time interaction from professors or instructors and receive immediate feedback.

The findings showing computer software and hardware are the most expensive component of employing e-learning concur with those of Affouneh *et al.* (2020), who demonstrate that a significant expenditure must be made to buy the equipment necessary to run and maintain e-learning technologies. In a previous analysis from the OECD (2013), it was reported that the price of building an e-learning infrastructure was rising. Snilstveit *et al.* (2015) contend, however, that funding educational institutions with grants can lower the number of students who drop out of school as a result of the adoption of e-learning tools like computers and cellphones. This study determined that the most significant obstacle to using e-learning is the difficulty in gaining access to e-learning materials. The results support the claim made by ECLAC (2019), according to which, despite significant efforts to close access gaps to digital services via mobile connections, doing so remains a significant issue. According to Bovill (2020), there are times when students experience access issues with materials created and placed on e-learning platforms and also have trouble understanding the modules' contents.

While some nations have been able to reduce internet subscription costs to zero and provide special bundles for students and colleges (Joosub, 2020), internet connectivity in Uganda is still pricey. The utilization of e-learning in higher education is positively correlated with the financial effects on Ugandan university students. Almaiah *et al.* (2020) and Griffin and McGuire (2017) have noted that there is a significant difference in the amount of school fees paid by students who attend face-to-face lectures on campus as opposed to those who attend e-learning and that there is a significant association between the use of e-learning and the financial implications. Despite the administration's justification that e-learning course delivery costs were higher than face-to-face course delivery costs (Legon and Garret, 2017), low-income students often struggled to afford personal equipment, internet connectivity and a reliable power source. Poor students have to travel vast distances to places with good bandwidth, affordable internet connections and reliable power.

Conclusion and policy implication

The digital world is operating fantastically. In every aspect of life, including education and universities, the world has adopted digital technologies at a faster rate. Particularly, students with strong ICT skills are drawn to this kind of education. Although it is believed that all users would be knowledgeable and skilled in using e-learning, this study reveals that some academic staff members may not be properly equipped. Some academic personnel find it difficult to engage students in online learning. Despite the fact that it does not directly affect costs, it slows down the rate of e-adaptability learning's and its preference for in-person engagement. But using e-learning directly necessitates spending money on pricey computer hardware and software. Due to the high cost of laptops and computers, low-income students access e-learning programs using basic devices like smartphones. The necessity for low-cost, quick and dependable internet connectivity which some struggling students may not be able to afford makes the issue significantly worse. This study encourages discussion about whether e-learning would be employed in universities in the future and whether education in Uganda would still be available to all children. The study recommends for an urgent need for educational reforms that would give Ugandan students access to free laptops and the internet. Future studies are advised by this study to take an administrative view on the financial effects of using e-learning in Ugandan universities. The National Council of Higher Education in (Uganda), in particular, should take a serious interest in monitoring the use of e-learning in universities and its efficacy.

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