Blueprint Academic Publishers

Journal of Frontiers of Humanities and Social Sciences
2(2)
Received: April 12, 2024
Accepted: June 8, 2024
Published: June 12, 2024

The Effect of Students' Perception on the Use of Blended Learning in Public Universities in Kenya: A Case of the University of Eldoret

Ndwiga Moses Murithi and Khaemba Ongeti

Department of Curriculum, Instruction and Educational Media, Moi University
P.O. Box 3900 - 30100, Eldoret, Kenya

Abstract

Establishing the effect of students' perception of the use of blended learning approaches among Bachelor of Education (B.ED) students at the University of Eldoret was the purpose of this study. The research objectives include: finding out the effect of perceived ease of use on the use of blended learning among BED students at the University of Eldoret; and determining the effect of perceived usefulness on the use of blended learning among BED students at the University of Eldoret. The study was anchored on the Technology Acceptance Model (TAM). The philosophy and methodology guiding the study were pragmatism and sequential mixed research design, respectively. Third-year students enrolled in the Bachelor of Education (B.ED) program formed the population of the study. Fifty students participated in the study using the convenience sampling method. Data was collected using structured questionnaires and a desk review of relevant literature. Data was analyzed using descriptive and inferential statistics techniques by aligning sequentially the quantitative inferences with qualitative inferences alongside findings from desk review. The results of the study revealed that Students' Perceived Ease of Use (PEU) had a negative but non-significant effect on the acceptance of blended learning in public universities of Kenya (β = -0.143, p = 0.261). This suggests that the ease with which students perceive they can use the blended learning systems does not significantly influence their acceptance of such systems. On the other hand, Perceived Usefulness (PU) showed a significant positive effect on the acceptance of blended learning (β = 0.526, p = 0.00), indicating that students are more likely to accept blended learning if they find it useful. The study suggests that the university carry out training on blended learning for students at entry and install strong free wi-fi at the campus to address 'perceived ease of use,' among students. Further studies could be done on students in public universities enrolled in different programs other than BED.

Keywords: Blended learning, technology adoption model, perceived usefulness, perceived ease of use, public universities

Correspondence: ndwiga.mm@gmail.com

Funding: The author received no financial support for the research, authorship and/or publication of this article

Competing interests: The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Introduction

Background information

Blended learning is a systematic combination of face-to-face and online modes for teaching and learning. The two modes complement each other. face-to-face approach, on the one hand, is a co-present form of learning where the instructor and students have to be physically present in a confined room for learning to happen. It is a brick-walled learning environment where students and teachers meet and interact face-to-face. Learning is in the form of classes, workshops, conferences, and seminars where all activities of teaching and learning are synchronously done in a classroom in a teacher-student-peer relationship. For ages, a face-to-face method has been used in universities. According to Nazara (2016), face-to-face teaching and learning strengthened instructor-learner relationships which is critical for learning. Students better understood the course due to rich exchanges of information and experiences via body language, gestures, tone, volume, and modulation of voice. Another strength of face-to-face learning was that students leveraged participation and group discussions, especially in difficult and complex courses. Because of social interactions occasioned by face-to-face learning, students both male and female got equal chances of learning.

Nazra (2016) also observed that traditional classroom-based learning was inconvenient to learners. Students felt intimidated, shy, classroom-confined, passive, bored, unsupported, and frustrated. Class attendance has been a challenge to most students, as a result. Exclusive acceptance of face-to-face learning disadvantages students of collaborative learning and engagement in high-level thinking (Okaz, 2015). Learning institutions, therefore, have resolved to accommodate new teaching and learning methods that would address the challenges of face-to-face learning and accommodate the demands of the 21st-century classroom.

On the other hand, online or E-learning is simply electronic learning. E-learning is essentially the computer and network-enabled transfer of skills and knowledge. It is an instruction delivered via electronic media comprising the combination, implementation, and relationship of teaching and learning via different ICT Media such as computers, the internet, multimedia projectors, videotapes, and CD Rom (Chilaoana, Makaza & Madizama, 2008). Nwokike (2010) defined E-learning as the use of the computer as a key component of the education environment. These technologies helped deliver and make education accessible to whoever needed

it. They created, fostered, delivered, and facilitated learning anytime and everywhere.

In online mode, teaching and learning are mediated by internet and technology systems or Learning Management Systems (LMS). Doroob, moodle, blackboard, Google Classroom, and Easy Class are some of the common LMS apps used by institutions. The LMS assists students in accessing lecturers' announcements, learning materials, and doing assignments. The internet offered connectivity between the student and lecturer and the student with other professionals online. In addition, the platform provided journals, digital library materials, and online lecture material, too. With the advent of technological advancement (Zurita, Husbun, & Jerez, 2015) and an outbreak of COVID-19 (Gaebel, Zhang, Stoeber, & Morrisroe, 2021), face-to-face teaching was relegated as a public health risk (Abbaca-Tuguic, 2021) and e-learning promoted as the best alternative.

E-learning can be synchronous or asynchronous. Synchronous E-learning is 'live' and requires simultaneous participation of all learners and instructors at different locations. Every learner is expected to be at the computer at the same time receiving instructions. It can be regarded as the scheduled delivery of learning (Alu, 2011). Synchronous E-learning takes a variety of forms, for example, multi-cast and real-time interactive conferencing. The basic one involves chat sessions where learners and trainers log on at the same time to discuss training topics. A more complex type involves learners. This allows learners from different locations to log into the training at a particular time, an instructor facilitates the discussion through the showing of slides or writing on a 'whiteboard' that is seen on the computer screens of learners. This offers the learner the opportunity to ask questions as the learning progresses. Synchronous E-learning makes learners feel that they are part of the learning society as an interaction between students and instructors is done at the same time. However, E-learning within a synchronous situation does not allow for flexibility (Alu, 2011).

Asynchronous E-learning, according to Rosenberg (2001), is learning that is "pre-coded" or is available, prepared, and kept and can be used when needed at any time. It does not take place at the same time. Learners are free to make their schedules (Alu, 2011). This type of E-learning delivers on-demand learning and this gives the learner more control over the learning process and content. According to Hall (1997), asynchronous E-learning is of different types, ranging from the less sophisticated PowerPoint slides posted on the website to more sophisticated ones that allow learners' involvement (interactive). These include electronic mail, online simulation with graphics, animation video, and audio components.

Although online teaching and learning was lauded as an ideal option for higher education during the COVID-19 pandemic, it also suffered weaknesses. Studies have revealed that the online method is riddled with a digital divide among students who have and do have not devices and internet connectivity. Students with poor learning habits, low self-discipline, and organization cannot sustain the much-needed motivation to learn through the course independently. In addition, medical problems like vision, back, and mental issues have been associated with long hours of working with computers (Zounek & Sudicky, 2012). While studying the pros and cons of online learning during the COVID-19 pandemic

era in Vietnam, the views of students revealed that online learning promoted social isolation by spending most of their time on a computer or 'lost in cyberspace' when the user encountered technical difficulties. The user felt abandoned, disgusted, and isolated (Trang, 2022). The study also proved e-cheating among students during exams. In the United Arab Emirates, a study on the advantages and disadvantages of using e-learning in university education showed that the absence of teacher-student personal interaction and parents' inability to track children activity online resulted in illicit activities, distraction, and strange culture among students (Rawashdeh, Mohammed, Al-Arab, Alara, & Al-Rawashdah, 2021).

To address the deficiencies in both face-to-face and online methods, Blended learning was adopted by higher learning institutions. This was meant to improve teaching and learning by mixing face-to-face and virtual delivery methods. While studying the quality of education of education in Higher Education Institutions (HEIs), Muthuraman (2018) found BL as the most appropriate approach for overall students' academic performance (Muthuraman, 2018). Universities as higher institutions of learning have been challenged to intensify the use of blended learning as an option of providing quality and relevant education. Implementing this option requires universities to share resources, be virtually networked; collaborate in designing educational programs at the same time addressing industry needs (Pavla, Hana, & Jan, 2015). This is only possible if universities, lecturers, and students agree to combine traditional pedagogical systems with collaborative, flexible, and innovative options of e-learning. In Kenya, this has not been a success despite systematic government-initiated reforms in the education sector.

Blended learning was adopted by higher learning institutions to improve teaching and learning by mixing face-to-face and virtual delivery methods. In Kenya, blended learning started with the introduction of computers in the 1970s and the internet in 1993. By 1994 universities were using technology-based learning techniques such as emails, the internet, course web pages, and computer simulations (Kathula, 2021). The Government of Kenya (GoK) and other stakeholders like UNESCO and the ICT Trust Fund have made great efforts and multi-investment to integrate ICT into education to accelerate the achievement of educational goals. This is demonstrated through various policy and strategy documents such as the National ICT policy of 2006, Sessional Paper No.1 of 2005, and Kenya Education Sector Support Programme, 2005-2010. In addition, the country has an ICT ministerial committee as an institutional framework led by the Ministry of Education, Science, and Technology (MoEST) to monitor and evaluate the implementation of ICT integration in education. Chaired by the permanent secretary, the committee meets monthly and reports quarterly on progress. Some of the strategic documents guiding the committee on evaluation are Education for All and Sustainable Development Goals (Mwendwa & Syomwene, 2019). Kaniaru, Karani, Mirie, and Nyangina (2019) observed an increase in students who needed 3rd-level qualifications with an inverse available space and teaching staff. This forced the Government of Kenya (GoK) to accredit most constituent colleges into fully-fledged universities in 2013. Still, the universities could not accommodate them. Technology Enabled Learning (TEL) comprising of blended learning, E-

learning, massive open courses, or using entirely online course delivery remained the alternative to address the challenge. In a literature-based study on the universities and how technology shaped their lecture halls, it was discovered that the blended learning uptake momentum of Kenyan universities was comparatively slow (Kathula, 2021) A cross-sectional design research on lecturer quality in eight public universities in Kenya revealed that graduates were inadequately prepared to transform the economy (Kara, Tanui, & Kalai, 2020). This significantly affected universities' achievement of their objectives of research, teaching, and outreach or extension services.

Under the University Act No. 42 of 2012, CUE fostered quality teaching, research, and outreach in universities by monitoring and fostering compliance with desired regulations, standards, and guidelines. Blended learning as an enabler of quality and expanded access to education is envisaged in the CUE's 2nd Medium Term Plan 2013-2017 as the desired innovation for universities to deliver globally competitive human resource capital and address the unique demographic challenges (Juma, 2018). In the fourth schedule, the Commission for Higher Education (CUE) acknowledges BL and sets standards for blended learning under Open, Distance, and E-Learning (ODEL). Quality in blended learning, according to CUE (2014), will only be achieved by universities if they consider need assessment factors such as demographics; education and economic background; experiences; accessibility, and familiarity of ICT to learners and lecturers. In addition, CUE contemplates infrastructure; university vision and mission; budget and policy; governance, structures and procedures; regional learning centers; collaboration with other providers; type of Learning Management Systems (LMS); and support services as key to effective and sustainable use of blended learning for teaching and learning (Commission for University Education, 2014). Given the above, CUE outlined nine (9) principles governing ODEL (including the blended learning approach). The principles targeted the realignment of university mission and purposes; policies and plans; systems of governance; evaluation; faculty members; resources; integrity; students and academic support staff to the adoption and use of blended learning.

Apart from CUE guidelines, the GoK has interconnected the universities through the Kenya Education Network Trust (KENET) (Tarus, Gichoya, & Muumbo, 2015). However, blended learning has not been successfully implemented by many universities. A big share of dons is an aging population who find it difficult to learn new strategies that are computer-based (Pavla, Hana, & Jan, 2015). A sample of studies on learners, and lecturers among selected public universities in Kenya revealed a significant discrepancy in access to education (Awori & Korir, 2018), ineffective teaching methods, and inadequate instructional materials (Maiyo, 2018). The studies implied that quality is at stake and only 'innovation universities' that can leverage postmodern teaching and learning methods such as blended learning can fix it. Blended learning as a new formal education program requires that users' predispositions and attitudes be well understood and addressed to succeed.

Problem statement

The problem is the low acceptance of blended learning among public university students despite the government's efforts. Blended learning is facing a lot of resistance among public university students even after being

proven as a timely and crucial panacea for 21st-century classroom challenges (Matheos & Cleveland-Innes, 2018). A large amount of evidence-based research observed that students, lecturers, and university management were not using blended learning to teach and learn (Mushemeza, 2016). According to Tarus, Gichoya, and Muumbo (2015), only 11% of the students in public universities in Kenya used a blended learning approach. The barriers to the use of the blended learning approach were inadequate ICT infrastructure, finance, policies, technical skills, commitment among teaching staff, and enough time to develop E-learning content. Informed by new information system adoption theories, users' perceptions and beliefs are critical for the system's acceptance. Perceptions predicted the user's behavioral intention and ultimate choice of the new system. In the blended learning context, there is scanty information on student's perception of the ease and usefulness of the same in Kenyan public universities. It beckons research, therefore, to deepen an understanding of students' attitudinal factors to ascertain their acceptance of the blended learning approach as a new teaching and learning method. The results of such understanding will inform the implementation of BL in higher education institutions. It will also help expand access to education as well as promote social equality and education quality in Kenya (MoEST, 2018).

Research objectives and hypotheses

The main aim of the study is to investigate the effect of BED students' perceptions on their acceptance of blended learning in public universities. Specific objectives were:

1) To find out the effect of perceived ease of use on the use of blended learning among BED students at the University of Eldoret
2) To determine the effect of perceived usefulness on the use of blended learning among BED students at the University of Eldoret.

Hypotheses

$H0_1$: Students' Perceived Ease of Use (PEU) did not have a significant effect on acceptance of blended learning in public universities of Kenya.

$H0_2$: Students' Perceived Usefulness (PU) did not have a significant effect on acceptance of blended learning in public universities of Kenya.

Literature review

Students' Perceived usefulness can best be described as learning 'performance expectancy', learning effectiveness expectancy, and learning benefits students anticipated to get when they use blended. Literature has identified BL's usefulness as pedagogical richness, social interaction, self-direction, cost-effectiveness, and ease of revision. While examining what captured students' attitudes towards blended learning in Slovenia, a factorial analysis using Structural Equation Modeling (SEM) revealed that students perceived e-courses in BL to be useful. The study interviewed 539 students in Slovenian higher education institutions. The students perceived BL as useful when the lecturers were active and engaged students online, students approved the subject matter, BL improved class performance, and technology indirectly impacted the students (Kerzic, Tomazevic, Aristovnik, & Umek, 2019). Using multiple regression analysis of factors that influenced PU of e-course among public administration undergraduate students at Ljubljana University in Slovenia, overall e-course impression, consistency with face-

to-face, and lecturer's responsiveness significantly influenced PU (Aristovnik, Kerzic, Tomazevic, & Umek, 2016). Though this study assists in understanding factors that grabbed students' attention toward blended BL usefulness, the study ignored the face-to-face component of BL. A better study is necessary therefore to address all components of BL in public universities in Kenya.

Experiences from students in the Ghanaian public university environment showed that BL was accepted because of its perceived usefulness. The qualitative case study capturing the feelings of 15 students showed that BL was useful because it facilitated learning, and was convenient and flexible. However, its adoption was challenged by inadequate infrastructure and internet connectivity (Antwi-Boampong, 2021). There is a need for a mixed-method study with a larger sample size that combines both qualitative and quantitative data because this study left out quantitative data.

In Tanzania, a cross-sectional study found both PU and PEU important determinants of BL acceptance. The study sampled 350 respondents from 5 Tanzanian universities to assess the views of academic staff and students on PU and PEU on the use of Web 2.0 technologies in university teaching and learning. The technologies were found useful in facilitating academic discourse, uploading and accessing learning materials, and sharing scholarly communications (Kazoka & Mwantimwa, 2019). Despite giving good insights on PU and PEU, the study assumed Web 2.0 to mean blended learning. A similar study interviewing 92 key people at the University of Dodoma on factors influencing the acceptance of LMS in higher learning institutions revealed that PU, lecturer's self-efficacy, and intrinsic motivation significantly influenced lectures' uptake of BL (Mtani & Mbelwa, 2022). This study focused on lecturers and LMS leaving out students' perceptions and the face-to-face component of BL; hence need for further study on the PU of students and BL.

In Kenya, a mixed method study was carried out to determine factors that influenced lecturers' adoption of eLearning. Perspectives of 48 lecturers at the virtual campus of Maseno University revealed that perceived usefulness significantly influenced their acceptance of BL. However, the lecturers felt that institutional factors inhibited BL's adoption (Makhaya & Ogange, 2019). This study did not capture student-related factors and exclusively focused on eLearning, hence the need for a study that comprehensively handles blended learning as a whole. Among technical training institutions in Kenya, quantitative research collected views of 629 lecturers using questionnaires. The findings revealed that the TTI lecturers found the use of ICT to be useful because it enhanced and complemented teaching (Agufuna, 2021). This study also failed to capture the views of students in the public university environment.

Students' PEU refers to 'effort expectancy,' freedom from difficulty, effort-free, or free from physical and mental efforts. Blended learning is perceived as easy to use by students when it is easy to become skillful, operate, get course content, interact with other users, and obtain what you want without difficulty (Panjaitan & Tambunan, 2019). A quantitative study assessing factors that affected students' satisfaction with using BL found PEU to significantly and positively affect student satisfaction ($r=0.39$, $p<0.01$). The study sampled 212 tertiary students from various faculties in public higher education institutions in Malaysia (Rahman, Hussein, Rusdi, & Esa, 2017). According to the study, students'

dissatisfaction was a result of effort expectancy; when students anticipated difficulties in using blended learning, they shunned away from using it. These results, however, were from a one-time and correlational study. They failed to observe students for a long time specifically in public university settings.

PEU significantly influenced students' BL acceptance in Indonesian private universities. These findings were obtained from 135 second and third-year business students in private schools in North Sumatra. The study used a quantitative approach and questionnaires to measure the students' agreement towards the use of easyclass.com. The business students rated PEU very highly because they were a millennial generation born with laptops, smartphones, and the internet at hand (Panjaitan & Tambunan, 2019). This study focused on easy classes instead of blended learning and assessed students in private universities almost at the same time. It is therefore important to consider studying students' perception of BL in the Kenyan public university environment.

PEU among other factors like Perceived usefulness, learning climate, attitude towards online and classroom learning, and teachers' charm were found to significantly influence acceptance of BL among university students in China – Hubei Province (Lu, Mustapha, & Abdullah, 2021). Using Exploratory Factor Analysis (EFA) and questionnaires structured on the Blended Learning Acceptance Scale (BLAS), the study found that 180 university students validated PEU because it helped students get course content and communicate with others without difficulty. Limitations of this study like the small sample size from public universities in Hubei province alone do not allow its results to apply to public universities in Kenya.

Among junior secondary students in Nigeria, perceived ease of use was found to determine acceptance of blended learning. A descriptive survey involving 22,968 junior secondary school students in Borno State of Nigeria revealed that students found BL easy to use, enjoyable, and entertaining (Ibrahim, Moses, Ibrahim, & Samaila, 2021). The study recommended that students be exposed to various LMS, and in-service training for teachers on the latest technologies, policy, and system support from leadership to promote e-learning. This study gives beneficial findings to improve the acceptance of BL among students. However, the study focused on junior secondary school students whose findings cannot be applied in a university setting.

Contrary results were observed in Cyprus. While examining university students' acceptance of BL during COVID-19 in Cyprus, no significant relationship was found between PEU and students' acceptance of BL (Basaran, 2021). The study collected views from 700 students from 6 universities in Cyprus. Because of technological advancements in Cyprus, PEU is no longer an issue of concern in the developing world. Consequently, there is a need to carry out perception studies on students in the developing world.

Theoretical underpinnings

To deepen the understanding of the effect of BED students' perception on their acceptance of blended learning, the study chose Technology Acceptance Model (TAM). The model was propounded and tested in 1986 by Fred Davis at MIT Sloan School of Management in the USA. According to the model, acceptance of a technology is a product of behavioral intention (BI). BI is a function of perceived ease of use (PEU) and perceived usefulness (PU) (Davis, 1986). In this context, the student acceptance of

blended learning depended primarily on how they perceived BL as easy to use and useful. The two cognitive beliefs (PEU and PU) yielded intention to use and ultimately acceptance of BL by B.ED students. Perceived Ease of Use (PEU) meant that students believed that BL was effort-free. Students need no effort to acquire learning content and interact with peers and instructors. Perceives Usefulness (PU) meant that the B.ED students trusted that BL enhanced their performance or grades. Behavioural Intention (BI) refers to the degree of students' willingness to adopt the information system for learning (Hadidi & Power, 2020). Acceptance refers to the degree of commitment to use a new system (Taherdoost, 2018).

Since its inception, TAM has been applauded by many empirical studies as an effective, vigorous, and extremely fit model to predict the adoption of technology by organizations (Dube, Eck, & Zuva, 2020). For example, it has been used to evaluate workers' attitudes and acceptance of e-learning systems in firms. It has also been used to investigate the connection between students' perception of blended learning and full e-learning among others (Khechine, Lakhal, Pascot, & Bytha, 2014). The Technology Acceptance Model theory was used to understand the Kenyan government's support to public primary schools to integrate ICT in teaching and learning in Kitui County (Mwendwa & Syomwene, 2019).

Despite the weaknesses such as difficulty in accommodating workplace actual behaviors (Taherdoost, 2018) and weak results (Dube, Eck, & Zuva, 2020), TAM remained the most preferred theory and model for explaining users' influences on acceptance of the blended learning approach in selected public universities in Kenya. In this context, it was used to explain students' acceptance of blended learning as a new method of teaching and learning in public universities. The model allowed the researcher to assess the students' perceptions of blended learning such as ease-of-use and usefulness in learning. Informed by the cognitive factors in the technology acceptance model (TAM), the study sought to determine the acceptance of blended learning among B.ED students at the University of Eldoret, a public university in Kenya

Materials and Methods

The study used an explanatory research design to investigate the effect of B.ED students' perceptions on their acceptance of blended learning. This was a pilot study. It was carried out between December 2022 and March 2023 at the University of Eldoret, a public university in Uasin Gishu County, Kenya. The targeted population was 50 B.ED 3rd-year students that were conveniently sampled. Student Blended Learning Experience Questionnaire (SBLEQ) was adopted by the researcher who dropped and picked the tools after filling them. Out of 50 SBLEQs, 45(75%) were returned, properly filled for analysis. The researcher, with the help of SPSS version 24, analyzed data using descriptive (frequencies, percentages, mean, standard deviation & Pearson correlation) and inferential (straight-line multiple regression) statistics. Using Cronbach alpha, the tool was found reliable at 0.8. The validity of the tools was ensured by review by supervisors from Moi University.

Results and Discussion

Description of students' Perceived ease of use (PEU) and Perceived Usefulness (PU)

The researcher asked the learners if they experienced difficulties when using BL. Most of the students agreed n = 14(28%) and strongly agreed n = 13(26%) that they experienced difficulties when

using blended learning, as shown in Table 4.1 The whole sample slightly agreed that blended learning was difficult M=4.9, SD=2.2. In other words, the BED students' 'perceived ease of use' of BL was slightly negative; the students had a negative perception of its 'ease of use'. With a larger standard deviation reading, it is interpreted that there was weak congruency among students on the perceived difficulty of BL.

Table 1: Learners' perception of Blended learning

Questions	SD	D	SD	N	SA	A	SA	Mean	S.Dev
I experience difficulties when using blended learning	7(14%)	4(8%)	1(2%)	2(4%)	8(16%)	14(28%)	13(26%)	4.9	2.1
Blended learning is useful for learning	8(16%)	6(12%)	1(2%)	2(4%)	7(14%)	15(30%)	10(20%)	4.6	2.2
I am willing to use blended learning in my academic work	12(24%)	1(2%)	3(6%)	6(12%)	10(20%)	9(18%)	7(14%)	4.2	2.2

Further, the study sought information on the students 'perceived usefulness' of BL in their studies. The results as per Table 1 revealed that the majority of BED students agreed on n =15(30%), strongly agreed n=10(20%), and slightly agreed n=7(14%) as compared to those who disagreed. Though BL was perceived to be difficult, BED students were positive about its usefulness M=4.6, SD=2.2. The big standard deviation indicated that many students had divergent opinions on BL's usefulness.

Hypothesis testing

The effect of Students' perceived ease of use on acceptance of blended learning

$H0_1$: Students' Perceived Ease of Use (PEU) did not have a significant effect on acceptance of blended learning in public universities of Kenya.

Using multiple regression analysis, the researcher sought to establish the effect of PEU and PU on BL acceptance by university students. The study started by determining the R square which was found as .286; meaning that the model predicted 28.6% of the changes in predictor variables. In other words, PEU and PU only determined 28.6% of the change in BL acceptance by students in public universities. The rest (71.4%) are predicted by chance or other variables not in the model. A similar study seeking to validate university students' factors that influenced acceptance of BL demonstrated that beyond PEU and PU there were other factors which included learning climate, attitude towards online learning and classroom learning, and teachers' charm (Lu, Mustapha, & Abdullah, 2021). Mtani and Mbelwa (2022) found that the lecturer's self-efficacy and intrinsic motivation were additional factors that influenced the acceptance of blended learning in public universities.

The second step was developing the model that explained the direction and strength of the effect of the influence of PEU and PU on BL acceptance using values in Table 2 below.

Table 2: Summary of regression output

No.	Hypotheses Description	Beta coefficient	Standard error	R^2	t-value	Sig. value	Resolve
	Constant	2.582	0.896		2.881	.006	
H_{01}	Perceived ease of use did not significantly influence acceptance of BL	-.143	.132	.284	1.138	0.261	Accepted
H_{02}	Perceived usefulness did not influence acceptance of BL	.526	.520	.284	4.123	0.00	Rejected

The table shows that data fit well in the model. Analysis of variance and F test were also carried out and found R^2 =.25, *F* (2,45) =9.0, *P*=0.001; showing a good model fit and that the model predicted well students' BL acceptance using PEU and PU.

The second step was to develop a model out of the regression output. The table data was fitted in the model as shown below;

BL acceptance = 2.58 - .143 PEU + .526 PU +.896.

According to the model, there is an inverse relationship between PEU and BL acceptance. Every unit change in PEU caused a negative change of .143 in BL acceptance. The findings also showed that every unit change in PU caused a positive variance of .526 in BL acceptance by university students.

The results of the study reveal that Students' Perceived Ease of Use (PEU) has a negative but non-significant effect on the acceptance of blended learning in public universities of Kenya (β = -0.143, p = 0.261). Therefore, the null hypothesis was accepted. The study did not find enough evidence to show that PEU significantly influenced students to accept BL in a public university setting. During the COVID-19 pandemic in Cyprus, similar findings were obtained among university students (Basaran, 2021). However, these findings are contrary to empirical evidence found in Indonesia, Malaysia, and Nigeria where PEU was found to significantly influence learners in higher education institutions to accept BL (Panjaitan & Tambunan, 2019; Rahman, Hussein, Rusdi, & Esa, 2017; Ibrahim, Moses, Ibrahim, & Samaila, 2021). The mixed findings suggest that more studies need to be done on PEU to make clear aspects of PEU that influenced and did not influence students' attitudes towards acceptance of BL. Studying PEU should consider ease of training, ease of operation, ease of getting what you want, and ease of use (Panjaitan & Tambunan, 2019).

The effect of Students' perceived usefulness on the acceptance of Blended learning

HO_2: Students' Perceived Usefulness (PU) did not have a significant effect on acceptance of blended learning in public universities of Kenya.

Results indicated that perceived Usefulness (PU) showed a significant positive effect on the acceptance of blended learning (β = 0.526, p = 0.00) Under the second hypothesis, the null hypothesis was rejected. PU significantly influenced BL acceptance among public university students.

Unlike PEU, the study found that PU significantly influenced BL acceptance among public university students. This finding is in tandem with evidence from Slovenian students' perception of e-

courses (Kerzic, Tomazevic, Aristovnik, & Umek, 2019). A qualitative case study by Antwi-Boampong (2021) in a Ghanaian public university also found PU to be a predictor of BL acceptance. Similar findings were obtained from 5 Tanzanian universities using Web 2.0 technologies (Kazoka & Mwantimwa, 2019). Studies at Maseno University's virtual campus and technical training institutions in Kenya also showed that acceptance of BL was determined by learners' perception of usefulness (Makhaya & Ogange, 2019; Agufuna, 2021).

Antecedent literature characterized blended learning as useful when it was pedagogically rich, cost-effective, facilitated social interaction, and self-directioning. Students also perceived BL to be useful when lecturers were active and engaged students online, students approved the subject matter, and BL improved class performance and indirectly impacted the students (Kerzic, Tomazevic, Aristovnik, & Umek, 2019). In addition, BL was helpful when it was consistent with face-to-face teaching, lecturers responded to students' issues promptly, facilitated learning, academic discourse, uploading and accessing learning materials, sharing scholarly communications, and convenient and flexible (Kazoka & Mwantimwa, 2019; Aristovnik, Kerzic, Tomazevic, & Umek, 2016).

Conclusion

The study aimed to investigate the effect of BED students' perceptions on their acceptance of blended learning in public universities. Using the TAM model, the investigation found that students' Perceived Usefulness (PU) significantly influenced the acceptance of blended learning. However, students' Perceived Ease of Use (PEU) did not significantly influence acceptance of blended learning among university students.

Recommendations

Based on the findings, the study recommends:

1. Public universities improve students' ease of using blended learning through prior training in the first year and 24/7 technical support for the students
2. Public universities make blended learning more useful by improving infrastructure and the internet. The universities needed to blend well face-to-face with virtual learning to accommodate all students with different challenges.
3. Further studies could be done on the effect of lecturers' perception on the implementation of Blended learning in public universities in Kenya.

References

Agufuna, P. B. (2021). Assessment of perceived ease of use and instructional use of ICT by lecturers in technical training institutions in Kenya. *International Journal of Education and Research, 9(1)*, 87-98.

Antwi-Boampong, A. (2021). Blended learning adoption in higher education: Presenting the lived experiences of students in a public university from a developing country. *The Turkish Online Journal of Educational Technology, 20(2).*, 14-23.

Aristovnik, A., Kerzic, D., Tomazevic, N., & Umek, L. (2016). Determining factors of students' perceived usefulness of e-learning in higher education. *International Conference e-Learning 2016.*, 3-11.

Basaran, S. (2021). Investigating university students' acceptance of BL during the COVID-19 pandemic. *International Transaction Journal of Engineering Management, Applied Sciences and Technologies, 12(13).*, 1-11.

Davis, F. (1986). *A Technology Acceptance Model for Empirical Testing New End-User Information Systems: Theory and Results.* Cambridge, MA, USA: Unpublished Ph.D Thesis, MIT Sloan School of Management.

Dube, T., Eck, R. V., & Zuva, T. (2020). Review of technology adoption models and theories to measure readiness and acceptable use of technology in a business organization. *Journal of Information Technology and Digital World, 2(4).*, 207-212.

Hadidi, R., & Power, D. J. (2020). Technology adoption and disruption - Organizational implications for the future of work. *Journal of the Midwest Association for Information Systems, 1(1)*, 1-8.

Ibrahim, S., Moses, D., Ibrahim, H., & Samaila, M. (2021). Perceived ease of use and acceptance of blended learning amongst junior secondary school students in Biu education zone, Borno State, Nigeria. *International Journal of Social Sciences & Educational Studies, 8(3).*, 73-83.

Kazoka, J. E., & Mwantimwa, K. (2019). Perceived usefulness and ease of use of Web 2.0 tools in teaching and learning in Tanzania. *University of Dar es Salaam Library Journal, 14(2).*, 19-37.

Kerzic, D., Tomazevic, N., Aristovnik, A., & Umek, L. (2019). Exploring critical factors of the perceived usefulness of blended learning for higher education students. *PLoSONE, 14(11)*, 1-18.

Lu, W., Mustapha, S. M., & Abdullah, N. (2021). Constructing and validating university students' blended learning acceptance scale. *iJIM, 15(4).*, 101-109.

Makhaya, B. K., & Ogange, B. O. (2019). The effects of institutional support factors on lecturer adoption of e-learning at a conventional university. *Journal of Learning for Development, 6(1).*, 64-75.

Mtani, H., & Mbelwa, J. (2022). Factors affecting Learning Management Systems usage in higher learning institutions in Tanzania. A case of the University of Dodoma. *International Journal of Education and Development using Information and Communication Technology, 18(1).*, 7-26.

Mwendwa, N. K., & Syomwene, A. K. (2019). Government support on ICT integration in public primary schools curriculum in Kitui County, Kenya. *Journal of Technology & Socio-Economic Development, 8(1)*, 150-158.

Panjaitan, W. M., & Tambunan, A. P. (2019). Students' acceptance of blended learning implementation. *Journal of Physics: Conference Series*, 1-6.

Rahman, N. A., Hussein, N., Rusdi, S. D., & Esa, M. M. (2017). Examining the factors that influence blended learning satisfaction among tertiary students in a public university in Malaysia. *World Applied Sciences Journal, 35(4).*, 580-584.

Rawashdeh, A. Z., Mohammed, E. Y., Al-Arab, A. R., Alara, M., & Al-Rawashdah, B. (2021). Advantages and disadvantages of using e-learning in university education: Analyzing student's perspectives. *The Electronic Journal of e-Learning, 19(2).*, 107-117.

Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing, 22*, 960-967.

Trang, L. T. (2022). A study on the advantages and disadvantages of online learning at a university in Vietnam during the COVID-19 pandemic era. *IOSR Journal of Research & Method in Education (IOSR-JRME), 12(2).*, 44-48.

Zounek, J., & Sudicky, P. (2012). Heads in the cloud: Pros and cons of online learning. *e-learning: Learning with online technologies.*, 58-65.