Adult Learners' Attitudes as Correlates of E-Learning Uptake During the COVID-19 Era at Makerere University, Uganda

Oscar Mugula

Department of Adult and Community Education,
College of Education and External Studies
Makerere University

Abstract

The study examined how adult learners' attitudes correlated with e-learning uptake during the COVID-19 era at Makerere University, Uganda. Specifically, the study tested the relationship between students' attitudes on perceived usefulness, e-learning effectiveness, e-learning system satisfaction and perceived self-efficacy with e-learning uptake. Using the cross-sectional-correlational research design, data were collected from a sample of 361 students with self-administered questionnaires and analysed using quantitative methods. The findings revealed that perceived usefulness, e-learning effectiveness, e-learning system satisfaction and perceived self-efficacy had a positive and significant relationship with adult learners' e-learning uptake. It was concluded that perceived usefulness, e-learning effectiveness, e-learning system satisfaction, and perceived self-efficacy are imperative for e-learning uptake. The study recommends that in implementing e-learning, universities adopt learning technologies that are useful to students, adopt effective technologies, introduce technology systems that give satisfaction to students, and provide training to students to enhance their efficacy in using online technologies.

Keywords: E-Learning, Perceived Effectiveness, Perceived Self-Efficacy, Perceived Usefulness, Satisfaction, COVID-19.

Introduction

The Coronavirus Disease 2019 (COVID-19) that emerged at the end of December 2019 in Wuhan City in China, spread quickly to other parts of the world, leading to lockdowns everywhere. The lockdowns dramatically changed the higher education system globally (Lapitan Jr et al., 2021; Li et al., 2020). Due to lockdowns, higher learning institutions adopted e-learning which had not been given serious attention by most institutions, especially in the developing world (Kizza et al., 2021). In Uganda, the lockdown was declared on March 18, 2020, as an emergency measure to

Corresponding author. oscar.mugula@mak.ac.ug

avert the spread of COVID-19. However, after three months, the Government of Uganda realized that COVID-19 was not going away very soon and demanded that universities adopt online teaching and learning (Kabahizi, 2020; Mugizi et al., 2021). Already, Makerere University had an online learning platform, the "Makerere University E-learning Environment" (MUELE), to which lecturers uploaded learning content and added interactive activities, including discussion forums, assignments and quizzes among others, for students to engage in learning (Busein, 2021). Nonetheless, students at the university expressed mixed feelings towards e-learning, claiming that the MUELE system to which they were required to register to be able to attend classes and access reading materials uploaded by lecturers was challenging. They claimed that the MUELE system was very slow and unable to accommodate a large number of users at a single time (Shabomwe, 2021).

Further, the students complained that while the system required users to have an institutional email of Makerere University to access it, the majority of students lacked the emails as the institution had limited personnel to help the students to open email accounts (Shabomwe 2021). Indeed, a section of students protested against online lessons, claiming that online learning was ineffective and was being forced on them by the university administration (Busein, 2021). Conversely, for adult learners in the same College and University, e-learning was fully implemented but in blended mode. However, a study carried out on adult learners at Makerere University (Mugula & Momanyi, 2021) revealed that these learners also faced certain challenges key, among others being limited access to the internet due to cost, failure to access digital collections such as books, handbooks and magazine articles to complete their course works, and failure to access MUELE. However, even though the MUELE platform can be accessed from anywhere, Makerere University subscribed to different online databases providing e-resources that could be used through direct and remote access. So the current study addressed the low uptake of e-learning, examining the extent of adult learners' attitudes and how they were related to e-learning at Makerere University. This study tested the hypotheses to the effect that:

H1: Perceived usefulness has a significant relationship with adult learners'-learning uptake.

H2: Perceived effectiveness significantly correlates with adult learners' e-learning uptake.

H3: Satisfaction with e-learning significantly correlates with adult learners' e-learning uptake.

H4: Perceived self-efficacy significantly correlates with e-learning adult learners' e-learning uptake.

Literature Review

This section reviews the literature on learners' attitudes as correlates of e-learning uptake. The section includes a theoretical review of the Technological Acceptance Model and a review of related literature. The review of related literature is on learners' attitudes, namely perceived usefulness, perceived effectiveness satisfaction and perceived self-efficacy concerning e-learning uptake.

Technological Acceptance Model

The Technological Acceptance Model (TAM) by Davis (1989) and Davis et al. (1989), which posits that attitude toward using technology is a major determinant of users' behavioural intention

to use it (Zhou et al., 2021), was adopted as the theoretical basis for this study. TAM explains why people accept or reject a particular technology and has been used to discover why educators accept or reject digital learning resources (Camilleri & Camilleri, 2017). Chou (2014), in his scale of factors determining students' attitudes toward e-learning, considered TAM elements: perceived usefulness, perceived effectiveness, satisfaction with the system, and perceived self-efficacy. There are earlier scholars who have tested the relationship between TAM components and e-learning (eg Al-Okaily et al., 2020; Al-Azawei et al., 2017; Bubou & Job, 2020; Chopra et al., 2019; Daneji et al., 2019; Kim & Park, 2018; Vanitha & Alathur, 2021). However, the contexts of those studies were outside Uganda; hence, the relationship between TAM factors and e-learning uptake needed to be further tested in the context of Uganda.

Learners Attitudes and E-Learning Uptake

Attitudes are reactions to situations or objects that may be positive or negative (Kurniawan et al., 2019). Attitudes also describe an individual's beliefs and feelings towards an object (Christensen et al., 2017). Attitudes are a person's feelings based on knowledge and belief about that object (Latifa et al., 2022). The Technological Acceptance Model reveals that students' attitudes toward e-learning include perceived usefulness, perceived effectiveness, satisfaction with the system, and perceived self-efficacy (Chou, 2014). Studies (eg Al-Okaily et al., 2020, Al-Fraihat et al., 2020; Daneji et al., 2019; Hussein, 2017; Keržič et al., 2019; Vululleh, 2018) tested the relationship between perceived usefulness and e-learning attitudes of students. All these studies discovered that perceived usefulness was a determinant of student use and continued intention to use e-learning. Further, concerning perceived effectiveness and e-learning, studies such as Chopra et al. (2019), Encarnacion et al. (2021), Kim and Park (2018); Sarwar et al. (2020), Shivdas, Menon and Nair (2020), Trakru and Jha (2019) indicated the existence of a positive and significant relationship between perceived effectiveness and e-learning. If the students perceive e-learning as ineffective, its adoption is negatively affected.

Studies by Al-Azawei et al. (2017), Cheng (2020), Mtebe and Raphael (2018), Rajeh et al. (2021), Vanitha and Alathur (2021), and Zardari et al. (2021) also revealed the existence of a significant relationship between satisfaction with the system and e-learning use. Further, studies such as Bubou and Job (2020), Ithriah et al. (2020), Latip et al. (2020), Rahmawati (2019), Thongsri et al. (2020), Wang et al. (2019), and Zardari et al. (2021) indicate that perceived self-efficacy predict the use of e-learning. The literature above suggests that student attitudes regarding perceived usefulness, perceived effectiveness, satisfaction with the system, and perceived self-efficacy determine e-learning use. However, all the studies were carried out in contexts other than those of university students in Uganda. With reported challenges of student uptake of e-learning and protests against it at Makerere University (Busein, 2021; Shabomwe, 2021), it was necessary to examine the relationship between learners' attitudes and e-learning uptake.

Methods

This section describes the methods that were employed to carry out this study. The methods include research design, sample, instrument, and data analysis. The methods helped in collecting and analyzing the data.

Research Design

The study adopted cross-sectional-correlational research design. The cross-sectional design involved collecting data about what was going on in relation to e-learning amongst the study population. This is because cross-sectional studies collect data at a single point in time, enabling

analysis of a variable or multiple variables at once, helping look at the research problem in the study population. Using the correlational survey research design, the study collected relational data to test the relationship between the independent and dependent variables. The data collected were on the relationship between attitudes, namely perceived usefulness, perceived effectiveness, satisfaction with the system, and perceived self-efficacy with e-learning. The study adopted the quantitative approach involving objective processes of data analysis. The positive approach was the basis for making statistical inferences on the independent and dependent variables.

Sample

The study comprised 361 adult education students from the College of Education and External Studies, Makerere University, obtained using simple random. The students that provided data were adult learners largely taught under the online learning mode in a blended approach. The majority of the students (235 or 65.1%) were male, 126(34.9%) were female, 310(85.9%) were up to 30 years of age, 44(12.2%) were 30 to 40 years and 7(1.9%) were 40 years and above. Further, 277(62.9%) were third year students, 77(21.3%) were second years and 57(15.8%) were first years. Therefore, the data were representative of different categories of students.

Instrument

The instrument for data collection was a self-administered questionnaire (SAQ). The SAQ comprised sections A through C. Section A was on demographic characteristics, namely gender, age group and year of study. Sections B and C were on the independent and dependent variables, respectively. The items for the dependent variable (e-learning) were adopted from Downer et al. (2015), Malinovski et al. (2012) and Yılmaz and Karataş (2018). The items on the independent variables (perceived usefulness, perceived effectiveness, satisfaction with the system, and perceived self-efficacy) were adopted from Chou (2014). The question reponses were on a Likert five-point scale (Where 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, and 5 = Strongly Agree). The validities and reliabilities for the different constructs were tested using Factor Analysis and Cronbach's alpha, respectively. Items loading highly above 0.50 on one construct were considered valid (Coetzee, Marx, & Potgieter, 2017). For the reliabilities, only those constructs values above 0.7 were retained (Souza, Alexandre, & Guirardello, 2017). The Cronbach's alpha results are presented in Tables 1 and 2.

Data Presentation and Analysis

The data were analysed using Statistical Package for Social Sciences (SPSS) inferential analyses. Data analysis involved carrying out correlation and hierarchical regression analyses. The independent variables (perceived usefulness, perceived effectiveness, satisfaction with the system, and perceived self-efficacy) were correlated with the dependent variable (e-learning). After that, regression analysis was done by regressing the dependent variable on the independent variables to establish a cause-effect relationship between the variables.

Results

The section covers correlation and regression results. The correlation results show the relationship between adult learners' attitudes and e-learning uptake, while the regression results show the predictive power of adult learners' attitudes on their uptake of e-learning.

The extent of E-Learning Uptake, Attitudes of Adult Learners, and Factors Accuracy and Consistency

To establish the extent of adult learners' attitudes and their level of e-learning uptake, a univariate analysis involving the calculation of means was done to establish how the students rated themselves. Further, to test whether the measures used to test the constructs were accurate and consistent, Factors Analysis and Cronbach's alpha were carried out. Tables 1 and 2 present results for the dependent variable (e-learning uptake) and the independent variables (attitudes of adult learners), respectively.

Table 1: Results for E-learning Uptake

Variables	Means (μ)	Components	α
Student-Student Interaction	$\mu= 3.51$	**1**	**0.734**
I read and commented on posted reports of others on the course on online platforms	3.45	0.654	
Online comments and questions from other students help me to learn easily	3.55	0.578	
I have developed effective electronic communication skills through online interaction	3.81	0.720	
Interacting online has increased my learning motivation	3.35	0.743	
I enjoy working in collabourative online activities	3.38	0.778	
Student-Teacher Interaction	$\mu=3.10$	**1**	**0.784**
I ask questions doing online lessons	3.02	0.594	
Lecturers can make us share ideas during online classes	3.68	0.716	
Lecturers know what students are doing during online classes	2.44	0.539	
Lecturers make us stay busy during online classes	3.07	0.688	
Lecturers use all kinds of interesting materials in online classes	2.68	0.688	
Lecturers involve us in the learning process during online lessons	3.35	0.679	
The lecturers' online content is sufficient	2.84	0.534	
Lecturers allow us to speak up and share ideas during online classes	3.76	0.613	
Student-Content Interaction	$\mu=2.77$	**1**	**0.800**
The usage of the learning management system is simple and easy	2.45	0.697	
The materials in the system are easily searchable and available	2.83	0.760	
Course information can be easily found within the system	3.16	0.703	
The system interface is well organised and can be customized to my needs	2.65	0.748	
I am comfortable using the web-oriented application for course preparation	2.54	0.713	
E-learning provides me with the opportunity to practise what I learn in the lesson	2.96	0.626	

Table 1 shows that the learners rated e-learning student-student interaction as being high (overall mean = 3.51), student-teacher interaction and student-content interaction to be moderate (overall means [μ] = 3.10 and 2.77 respectively). This is because, for student-student interaction, the overall mean was close to code 4, denoting agreed on the five points Likert scale used, while for student-teacher interaction and student-content interaction, the means were close to code 3, denoting not sure (moderate). Factor Analysis indicated that the factors for every construct (student-student interaction, student-teacher interaction and student-content interaction) were reduced to one component because each loaded once above 0.5. Therefore, the factors were valid measures of the constructs (Coetzee et al., 2017). The Cronbach's alphas (α) = 0.734, 0.784 and 0.800 for the respective components of adult learners' attitudes were above α = 0.70, which is the benchmark (Korstjens & Moser, 2018). This implied that the items for the three adult learners' attitudes were reliable measures.

Table 2: Results for Attitudes of Adult Learners

Variables	Means (μ)	Components	α
Perceived usefulness: I believe e-learning;	μ= 3.25	**1**	**0.865**
…contents are informative	3.16	0.640	
…is a useful learning tool	3.50	0.803	
…contents are useful	3.59	0.808	
…assists my learning	3.53	0.815	
…content enhances my learning	3.60	0.859	
…is an autonomous learning tool	3.23	0.714	
Perceived effectiveness: I believe e-learning;	μ=3.10	**1**	**0.844**
…assists teacher-learner interaction	3.38	0.773	
…assists learner-learner interaction	3.39	0.784	
...assists learning efficiency	3.27	0.837	
…assists learning performance	3.30	0.797	
…increases learning motivation	2.98	0.744	
…enhances teacher-learner interaction	3.38	0.773	
…enhances learner-learner interaction	3.39	0.784	
…assists learning efficiency	3.27	0.837	
Perceived e-learning system satisfaction: I am satisfied with;	μ=2.94	**1**	**0.815**
…e-learning functions	2.73	0.824	
…the Internet speed	2.52	0.743	
…e-learning content	2.98	0.808	
…e-learning interaction	3.15	0.839	
I would like to share my e-learning experience	3.30	0.581	
Perceived self-efficacy: I am;	μ=2.85	**1**	**0.909**
…confident about using the e-learning system	2.62	0.786	
…confident about operating the e-learning functions	2.83	0.875	
… confident about using the online learning contents	2.94	0.856	
…satisfied with using e-learning as a tool for assisting learning	2.99	0.892	
…satisfied with using the e-learning functions	2.88	0.873	

Table 2 shows that the learners rated their perceived usefulness, effectiveness, e-learning system satisfaction and self-efficacy as moderate (overall means [μ] = 3.25, 3.10, 2.94 and 2.85, respectively). This is because the overall means for the four constructs were close to code 3, denoting not sure (moderate). Factor Analysis indicated that the factors for every construct (perceived usefulness, effectiveness, e-learning system satisfaction and self-efficacy) were reduced to one component because each loaded once above 0.5. Therefore, the factors were valid measures of the constructs. The Cronbach's alphas (α) = 0.865, 0.844, 0.815 and 0.909 for the respective components of adult learner's attitudes were above α = 0.70, the benchmark which implied that the items were reliable measures of the constructs.

Relationship between Attitudes of Adult Learners and E-Learning Uptake

A correlation test was carried out on the hypotheses to discover the relationship between adult learners' attitudes and e-learning uptake (H1-H4). The four adult learner's attitudes tested were perceived usefulness, effectiveness, e-learning system satisfaction and self-efficacy. The results obtained are presented in Table 3.

Table 3: Correlation between Adult Learner's Attitudes and E-Learning Uptake

	E-learning	Perceived usefulness	E-learning effectiveness	E-Learning System Satisfaction	Perceived self-efficacy
E-learning	1				
Perceived usefulness	0.687**	1			
	0.000				
E-learning effectiveness	0.605**	0.658**	1		
	0.000	0.000			
E-Learning System Satisfaction	0.638**	0.599**	0.567**	1	
	0.000	0.000	0.000		
Perceived self-efficacy	0.662**	0.656**	0.543**	0.693**	1
	0.000	0.000	0.000	0.000	

The results above in Table 3 indicate that all adult student's attitudes, namely perceived usefulness (r = 0.687, p = 0.000 < 0.05), effectiveness (r = 0.605, p = 0.000 < 0.05), e-learning system satisfaction (r = 0.638, p = 0.000 < 0.05) and self-efficacy (r = 0.662, p = 0.000 < 0.05) had a significant positive relationship with e-learning uptake. All four hypotheses were thus supported. This means that increasing students' attitudes towards e-learning lead to its increased uptake.

Prediction of E-Learning Uptake by Adult Student's Attitudes

A confirmatory multiple regression analysis was carried out to determine whether adult students' attitudes predicted e-learning uptake in terms of perceived usefulness, effectiveness, e-learning system satisfaction and self-efficacy. The results are presented in Table 4.

Table 4: Regression of E-Learning Uptake on Adult Students' Attitudes

Adult Learners Attitudes	Standardized Coefficients	Significance
	Beta (β)	p
Perceived usefulness	0.308	0.000
E-learning effectiveness	0.162	0.001
E-Learning System Satisfaction	0.199	0.000
Perceived self-efficacy	0.233	0.000
Adjusted R^2 = 0.587 F = 128.796, p = 0.000		

a. Dependent Variable: E-learning

The results in Table 4 reveal that adult students' attitudes that are perceived usefulness, effectiveness, e-learning system satisfaction and self-efficacy contributed 58.7% to the variation in e-learning uptake (R^2 = 0.587). This means that 41.3% of the variation was accounted for by factors not considered in this regression model. Each of the adult student's attitudes, namely perceived usefulness (β = 0.308, p = 0.000 > 0.05), e-learning effectiveness (β = 0.162, p = 0.000 < 0.05), e-learning system satisfaction (β = 0.199, p = 0.000 < 0.05) and perceived self-efficacy (β = 0.233, p = 0.003 < 0.05) had a positive and significant relationship with adult learners e-learning uptake. This means that all the hypotheses (H1-H4) were supported. The magnitudes of the respective betas revealed that perceived usefulness was the most significant attitude, followed by perceived self-efficacy, e-learning system satisfaction and e-learning effectiveness, respectively. The above findings mean that improving students' attitudes towards e-learning will lead to its increased uptake.

Discussion

This study examined how adult learners' attitudes correlated with e-learning uptake. The findings revealed that perceived usefulness, e-learning effectiveness, e-learning system satisfaction and perceived self-efficacy had a positive and significant relationship with adult learners' e-learning uptake. These findings are consistent with the findings made by previous scholars. For example, Al-Okaily et al., 2020, Al-Fraihat et al. (2020), Daneji et al. (2019), Hussein (2017) and Keržič et al. (2019) and Vululleh (2018) revealed that perceived usefulness was a determinant of student use and continued intention to use e-learning. With respect to perceived effective and e-learning, Chopra et al. (2019), Encarnacion et al. (2021), Kim and Park (2018); Sarwar et al. (2020), Shivdas, Menon and Nair (2020), and Trakru and Jha (2019) reported that perceived effectiveness had positive and significant relationship with e-learning. Further, in their studies, Al-Azawei et al. (2017), Cheng (2020), Mtebe and Raphael (2018), Rajeh et al. (2021), Vanitha and Alathur (2021), Zardari et al. (2021) indicated the existence of a significant relationship between satisfaction with the system and e-learning use. Lastly, Bubou and Job (2020), Ithriah et al. (2020), Latip et al. (2020), Rahmawati (2019), Thongsri et al. (2020), Wang et al. (2019) and Zardari et al. (2021) reported that perceived self-efficacy predicted the use of e-learning. Therefore, with the findings of the study consistent with previous scholars' findings, adult learners' attitudes significantly relate to e-learning uptake. Therefore, the technologies introduced for learning, such as online platforms, should be those students appreciate.

Conclusion

The discussion above led to the conclusion that perceived usefulness, e-learning effectiveness, e-learning system satisfaction, and perceived self-efficacy are imperative for e-learning uptake. When learners perceive that online learning is useful in that the content is informative, the technologies are useful learning tools, the content is useful, the technologies assist learning, and the content provided enhances learning, there is increased e-learning uptake. There is more uptake when learners perceive e-learning to be effective and assist teacher-learner interaction, learner-learner interaction, learning efficiency and learning performance. Also, if the learners perceive that e-learning is effective because it increases learning motivation, enhances teacher-learner interaction, enhances learner-learner interaction and assists learning efficiency, its uptake is high. Further, if learners obtain satisfaction from e-learning systems because of their functions, internet speed, content provided and interaction, their uptake of e-learning is enhanced. Last but not least, if the learners perceive that their self-efficacy for using the e-learning system is high, they are confident about operating its functions and using the content it provides and its functions, and its uptake increases. These conclusions mean that students' attitudes should be positive towards the technologies adopted for e-learning to be enhanced.

Recommendations

In implementing e-learning, universities should adopt learning technologies that are useful for students. The technologies such as online platforms adopted should be useful for learning, provide useful content, and assist learning, and the content they provide should enhance learning. Universities should also adopt technologies such as online platforms that are effective in that they enhance teacher-learner interaction, learner-learner interaction, learning efficiency, and increase learning motivation. Further, universities should introduce technology systems that give satisfaction to students. Such technologies should have appropriate functions, work at high speed, have good content and enable interaction. In addition, universities should train students to enhance their efficacy in using online technologies. The training should equip students with skills to operate its functions confidently and use the content provided.

Limitations

This study significantly provides the knowledge necessary for promoting e-learning in universities. Nevertheless, the study was carried out at one university and used a cluster of students already highly engaged in e-learning. Future studies should cover several universities and diverse categories of learners, including regular students. In addition, the study was cross-sectional and hence took only a snapshot of what was happening at the time. There is a need for longitudinal studies that will deeply explore what is going on in the universities with respect to e-learning uptake and factors facilitating or impeding the same. Further, the study was also correlational and quantitative, which limited its in-depth analysis through exploration methods. Therefore, future studies should consider the qualitative approach for in-depth analysis.

References

Al-Azawei, A., Parslow, P., & Lundqvist, K. (2017). Investigating the effect of learning styles in a blended e-learning system: An extension of the technology acceptance model (TAM). *Australasian Journal of Educational Technology*, *33*(2), 1-23. https://doi.org/10.14742/ajet.2741

Al-Fraihat, D., Joy, M., & Sinclair, J. (2020). Evaluating E-learning systems success: An empirical study. *Computers in human behaviour*, *102*, 67-86. https://doi.org/10.1016/j.chb. 2019.08.004

Al-Okaily, M., Alqudah, H., Matar, A., Lutfi, A., & Taamneh, A. (2020). Dataset on the Acceptance of e-learning System among Universities Students' under the COVID-19 Pandemic Conditions. *Data in Brief*, *32*, 106176. https://doi.org/10.1016/j.dib.2020.106176

Bağrıacık Yılmaz, A., & Karataş, S. (2018). Development and validation of perceptions of online interaction scale. *Interactive Learning Environments, 26(3), 337-354*. https://doi.org/10.1080/10494820.2017.1333009

Bubou, G. M., & Job, G. C. (2020). Individual innovativeness, self-efficacy and e-learning readiness of students of Yenagoa study centre, National Open University of Nigeria. *Journal of Research in Innovative Teaching & Learning*. https://doi.org/10.1108 /JRIT-12-2019-0079

Busein, S. (2021, February 11). Makerere University students protest "ineffective" online learning. *ChimpReports*. https://chimpreports.com/makerere-university-students-protest-ineffective-online-learning/

Camilleri, M. A., & Camilleri, A. C. (2017). Digital learning resources and ubiquitous technologies in education. *Technology, Knowledge and Learning*, *22*(1), 65-82.

Cheng, Y. M. (2020). Students' satisfaction and continuance intention of the cloud-based e-learning system: roles of interactivity and course quality factors. *Education + training*, *62*(9), 1037-1059. https://doi.org/10.1108/ET-10-2019-0245

Chopra, G., Madan, P., Jaisingh, P., & Bhaskar, P. (2019). Effectiveness of e-learning portal from students' perspective: A structural equation model (SEM) approach. *Interactive Technology and Smart Education*, 16(2), 94-116. https://doi.org/10.1108/ITSE-05-2018-0027

Chou, T. C. R. (2014). A Scale of university students' attitudes toward e-learning on the moodle system. *International Journal of Online Pedagogy and Course Design (IJOPCD)*, *4*(3), 49-65. doi: 10.4018/ijopcd.2014070104

Christensen, M., Welch, A., & Barr, J. (2017). Husserlian descriptive phenomenology: A review of intentionality, reduction and the natural attitude. *Journal of Nursing Education and Practice*, *7*(8), 113-118. doi: 10.5430/jnep.v7n8p113

Coetzee, M., Marx, A. A., & Potgieter, I. L. (2017). Examining the construct validity of the positive coping behavioural inventory. *SA Journal of Industrial Psychology*, *43*(1), 1-8. http://dx.doi.org/10.4102/sajip.v43i0.1433

Daneji, A. A., Ayub, A. F. M., & Khambari, M. N. M. (2019). The effects of perceived usefulness, confirmation and satisfaction on continuance intention in using massive open online

course (MOOC). *Knowledge Management & E-Learning, 11*(2), 201–214. https://doi.org/10.34105/j.kmel.2019.11.010

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, *35*(8), 982-1003. https://doi.org/10.1287/mnsc.35.8.982

Downer, J. T., Stuhlman, M., Schweig, J., Martínez, J. F., & Ruzek, E. (2015). Measuring effective teacher-student interactions from a student perspective: A multi-level analysis. *The Journal of Early Adolescence*, *35*(5-6), 722-758. https://doi.org/10.1177/ 0272431614564059

Encarnacion, R. E., Galang, A. D., & Hallar, B. A. (2021). The impact and effectiveness of e-learning on teaching and learning. *International Journal of Computing Sciences Research, 5*(1), 383-397. doi: 10.25147/ijcsr.2017.001.1.47

Hussein, Z. (2017). Leading to intention: The role of attitude in relation to technology acceptance model in e-learning. *Procedia Computer Science*, *105*, 159-164. doi: 10.1016/j.procs.2017.01.196

Ithriah, S. A., Ridwandono, D., & Suryanto, T. L. M. (2020, July). Online Learning Self-Efficacy: The Role in E-Learning Success. In *Journal of Physics: Conference Series* (Vol. 1569, No. 2, p. 022053). IOP Publishing. doi:10.1088/1742-6596/1569/2/0 22053

Kabahizi, C. B. (2020). *Impacts of the COVID-19 disruptions on institutions of higher education in Uganda*. Mukono, Uganda: Africa Policy Centre Uganda Christian University.

Keržič, D., Tomaževič, N., Aristovnik, A., & Umek, L. (2019). Exploring critical factors of the perceived usefulness of blended learning for higher education students. *PloS one*, *14*(11), e0223767. https://doi.org/10.1371/journal.pone.0223767

Kim, B., & Park, M. J. (2018). Effect of personal factors to use ICTs on e-learning adoption: Comparison between learner and instructor in developing countries. *Information Technology for Development*, *24*(4), 706-732. https://doi.org/10.1080/02681102.2017.1 312244

Kizza, J., Kasule, W., Amonya, D., Nakimuli, L., & Komugabe, A. (2021). Perceptions towards the effectiveness of e-learning in private and public universities in Uganda: A comparative study. *East African Journal of Arts and Social Sciences*, *3*(1), 156-169. doi: https://doi.org/10.37284/2707-4285

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, *24*(1), 120-124. https://doi.org/10.1080/13814788.2017.1375092

Kurniawan, D. A., Astalini, A., Darmaji, D., & Melsayanti, R. (2019). Students' Attitude towards Natural Sciences. *International Journal of Evaluation and Research in Education*, *8*(3), 455-460. doi: 10.11591/ijere.v8i3.16395

Lapitan Jr, L. D., Tiangco, C. E., Sumalinog, D. A. G., Sabarillo, N. S., & Diaz, J. M. (2021). An effective blended online teaching and learning strategy during the COVID-19 pandemic. *Education for Chemical Engineers*, *35*, 116-131. https://doi.org/10.1016/j.ece.2021.01.012

Latifa, R., Fahri, M., Subchi, I., & Mahida, N. F. (2022). The intention of becoming religiously moderate in Indonesian Muslims: Do knowledge and attitude interfere? *Religions*, *13*(6), 540. https://doi.org/10.3390/rel13060540

Latip, M. S. A., Noh, I., Tamrin, M., & Latip, S. N. N. A. (2020). Students' acceptance for e-learning and the effects of self-efficacy in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, *10*(5), 658-674. http://dx.doi.org/10.6007/IJAR BSS/v10-i5/7239

Li, J. Y., You, Z., Wang, Q., Zhou, Z. J., Qiu, Y., Luo, R., & Ge, X. Y. (2020). The epidemic of 2019-novel-coronavirus (2019-nCoV) pneumonia and insights for emerging infectious diseases in the future. *Microbes and infection*, *22*(2), 80-85. https://doi.org/10.1016/j.micinf.2020.02.002

Malinovski, T., Lazarova, M., & Trajkovik, V. (2012). Learner− content interaction in distance learning models: students' experience while using learning management systems. *International Journal of Innovation in Education*, *1*(4), 362-376.

Mtebe, J. S., & Raphael, C. (2018). Key factors in learners' satisfaction with the e-learning system at the University of Dar es Salaam, Tanzania. *Australasian Journal of Educational Technology*, *34*(4), 107-122. doi: https://doi.org/10.14742/ajet.2993

Mugizi, W., Rwothumio, J. & Amwine, C. M. (2021). Compensation management and employee wellbeing of academic staff in Uganda private universities during COVID-19 lockdown. *Interdisciplinary Journal of Education Research, 3*(1), 1-12. https://doi.org/10.51986/ijer-2021.vol3.01.01

Mugula, O. & Momanyi, M. (2021). Makerere University students' learning challenges associated with COVID-19 pandemic lockdown: A case of Department of Adult and Community Education. *African Journal of Education, Science and Technology*, *6*(3), 200-215.

Rahmawati, R. N. (2019). Self-efficacy and use of e-learning: A theoretical review technology acceptance model (TAM). *American Journal of Humanities and Social Sciences Research*, *3*(5), 41-55.

Rajeh, M. T., Abduljabbar, F. H., Alqahtani, S. M., Waly, F. J., Alnaami, I., Aljurayyan, A., & Alzaman, N. (2021). Students' satisfaction and continued intention toward e-learning: A theory-based study. *Medical education online*, *26*(1), 1961348. https://doi.org/10.1080/10872981.2021.1961348

Sarwar, H., Akhtar, H., Naeem, M. M., Khan, J. A., Waraich, K., Shabbir, S., ... & Khurshid, Z. (2020). Self-reported effectiveness of e-Learning classes during COVID-19 pandemic: A nation-wide survey of Pakistani undergraduate dentistry students. *European journal of dentistry*, *14*(S 01), S34-S43.

Shabomwe, R. (2021, February 18). University online systems still frustrating students and lecturers. *Eagle Online*. Available at: https://eagle.co.ug/2021/02/18/university-online-systems-still-frustrating-students-and-lecturers.html

Shivdas, A., Menon, D. G., & Nair, C. S. (2020). Antecedents of acceptance and use of a digital library system: experience from a tier 3 Indian city. *The Electronic Library*, *38*(1), 170-185. https://doi.org/10.1108/EL-03-2019-0074

Souza, A. C. D., Alexandre, N. M. C., & Guirardello, E. D. B. (2017). Psychometric properties in instruments evaluation of reliability and validity. *Epidemiologia e servicos de saude*, *26*,

649-659. https://doi.org/10.5123/S1679-49742017000300022

Thongsri, N., Shen, L., & Bao, Y. (2020). Investigating academic major differences in perception of computer self-efficacy and intention toward e-learning adoption in China. *Innovations in Education and Teaching International*, *57*(5), 577-589. https://doi.org/10.1080/1470 3297.2019.1585904

Trakru, M., & Jha, T. K. (2019). E-learning effectiveness in higher education. *International Research Journal of Engineering and Technology (IRJET)*, *6*(5), 96-101.

Vanitha, P. S., & Alathur, S. (2021). Factors influencing E-learning adoption in India: Learners' perspective. *Education and Information Technologies*, *26*(5), 5199-5236. https://doi.org /10. 1007/s10639-021-10504-4

Vululleh, P. (2018). Determinants of students' e-learning acceptance in developing countries: An approach based on Structural Equation Modeling (SEM). *International Journal of Education and Development using ICT, 14*(1). https://www.learntechlib.org/p/183560/.

Wang, L. Y. K., Lew, S. L., Lau, S. H., & Leow, M. C. (2019). Usability factors predicting continuance of intention to use cloud e-learning application. Heliyon, 5 (6), e01788. https://doi.org/10.1016/j.heliyon.2019.e01788

Zardari, B. A., Hussain, Z., Arain, A. A., Rizvi, W. H., & Vighio, M. S. (2021). Development and validation of user experience-based e-learning acceptance model for sustainable higher education. *Sustainability*, *13*(11), 6201. https://doi.org/10.3390/su13116201

Zhou, S., Zhou, Y., & Zhu, H. (2021). Predicting Chinese University Students' E-Learning Acceptance and Self-Regulation in Online English Courses: Evidence From Emergency Remote Teaching (ERT) During COVID-19. *Sage Open*, *11*(4), 1-5. https://doi.org/10.11 77/21582440211061379