

E-learning Policies and E-learning Acceptance and Usage

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Abstract

E-learning is identified in many studies as an enabler of education. A lot of benefits and opportunities have been anticipated in the adoption of e-learning. However despite this, its benefits have not been fully realized and e-learning has not been fully utilized as advertised. This study focuses on the individual users' acceptance and usage of e-learning and influence of e-learning policies on e-learning acceptance and usage. A selected sample of universities in Uganda was used to carry out this study. Several challenges were identified from which possible requirements were obtained. The science methodology design was used. Evaluation results indicated that where e-learning policies existed, acceptance and usage of e-learning systems were greatly improved.

Key words: *E-learning; E-learning policies; Technology Acceptance Model*

Introduction

Many universities in Uganda have implemented e-learning for various reasons. E-learning provides various opportunities and benefits to institutions of higher learning but little research has been done to show whether e-learning has been accepted and used as intended.

Selim (2006) states that e-learning has become a main tool of enhancing

education and training activities in many institutions of higher learning and has been integrated into their courses in order to either offer degrees at a distance or enhance the delivery of traditional courses.

Nanayakkara, (2007) states that in spite the effort e-learning development and investment the teachers and faculty do not always use the technology as expected and more often e-learning systems continue to be underutilized. This in line with Kahiigi and colleagues (2009) who state that despite the recognition E-Learning has received it has failed to transfer effectively for its benefits to be realized.

These works point out that the low acceptance and usage rate of e-learning presents a gap (Yiong *et al* 2008; Kahiigi *et al* 2009; Selim 2006; Alenezi, *et al* 2011). Selim (2006) states that E-Learning Acceptance Model (ELAM) explained 45% of the model's variance indicating that there are more factors to be considered.

Furthermore, different acceptance and usage models were reviewed and some of the challenges of e-learning acceptance and usage highlighted. This study proposed a generic framework for e-learning acceptance and usage.

In this research, the researcher intended to determine and investigate the factors that affect E-learning acceptance on an individual level; TAM was used as the fundamental model for the study. The reasons for the choosing TAM will be discussed at a later stage.

E-learning

NAIDU (2006) ascerted that e-learning would incorporate all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices.

Some schools of thought discuss e-learning as distance learning, online learning and networked learning (Wilson 2001). E-learning can be referred

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to as computer enhanced learning. Engelbrecht (2003) defined e-learning as instructions delivered via all electronic media. Shoniregun and Gray (2004) define e-learning as the delivery of teaching material electronically while maintaining standards and quality of teaching without the limitation of a specific location. According to Littlejohn (2007), e-learning means using ICT as mediating devices that allow students to access learning resources that inform them of new ideas, reflect on them and integrate into their existing knowledge. In this study, e-learning is defined as the learning method that uses ICTs to transform and support the teaching and learning process in Higher Education Institutions. Here e-learning will be considered as a supplement to traditional learning and not a replacement of traditional learning, thus blended learning.

E-learning and Policy

E-learning development is one of the big challenges for higher institutions of learning in this era. New pedagogical solutions and new teaching, learning and communication methods have to be developed to make e-learning acceptable and usable.

According to Farrell (2003), the purpose of policy in educational environments has been to guide the adoption process. However, what is observed now is that innovation typically begins in the absence of any guiding policy, and policymakers find themselves in the position of scrambling to regain the leadership role. And they find that the policy development processes of the past, those based on careful, time consuming analysis, are a luxury that can no longer be afforded because the pace of change is so rapid.

Decision makers and teachers want to know how this innovation will increase access to educational opportunities, what the costs will be, and what the impact will be on the quality of content and the learning experience. They need to be convinced by evidence before making wholesale changes

to the way schools function and the way in which available resources are allocated (Farrell 2003).

E-learning policy intends to show how ICT can be deployed to serve the shared aims, and how this can be done both effectively and efficiently. An e-learning policy will have to consider issues such as Sensitization and training relevant stakeholders, Access controls and provide set of basic principles and associated guidelines, which will be formulated and enforced by the university, to direct and limit its actions in pursuit of its goals.

While many developed countries have specific e-learning policies, frameworks, regulations and funding bodies, these are rare in developing countries. The Partnership for Higher Education in Africa's (PHEA) e-Learning Initiative do not have specific national policies devoted to e-learning, although education is mentioned in national ICT policies. (Czerniewicz and Jaffer, 2007). The PHEA countries are Egypt, Ghana, Kenya, Madagascar, Mozambique, Nigeria, South Africa, Tanzania and Uganda.

Factors Influencing E-learning Acceptance and Usage

In their research Abbad *et al.* (2009) four conclusions were made: 1. Students who are frequent and/or heavy users of the Internet are more likely to use e-learning systems. 2. Students who are confident in their ability to master an e-learning system, without help, are more likely to become users. 3. Students are reassured by the availability of back-up technical support. 4. Students believe that an e-learning system will be more useful to them if it is easy to use.

The effects of Internet use on beliefs about LMS usefulness are an indirect product of perceptions of how easy to use a system might be. On the other hand the availability of technical support is a direct influence on perceived usefulness but not ease of use. This would seem to suggest that a well-designed e-learning system or LMS should have a reassuring and

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intuitive user interface, which promotes confidence among potential users (Abbad and colleagues, 2009). Furthermore Abbad *et al.* (2009) state that there is no strong evidence in their work that subjective norms or system interactivity influences student's intentions to use e-learning systems.

Nanayakkara (2007) states that whilst individual factors have significant contribution to the LMS adoption, the system and organizational factors are most crucial for user acceptance in e-learning systems. The users ranked that release time for staff, the ease of use of LMS, perceived usefulness of LMS, training and support to develop online content and the reliability of information and communication technology infrastructure are the five most essential factors for staff uptake in e-learning systems.

In their research, Al-Busaidi and Al-Shihi (2010) identified these critical factors that affect acceptance and usage related to the instructor, organization, and technology. Instructor factors include: self efficacy, attitude toward LMS, experience, teaching style and personal innovativeness. Organization factors include motivators, technology alignment, organization support, technical support and training and Technology factors include system quality, information quality and service quality.

According to Park (2009), one of interesting results from his study is that both e-learning self-efficacy and subjective norm play an important role in affecting attitude towards e-learning and behavioral intention to use e-learning and suggests that one possible explanation for this may be justified by motivational theory.

Furthermore, Park (2009), states that e-learning self-efficacy may be considered an intrinsic motivational factor and subjective norm may be an extrinsic motivational factor that could help the university students self-regulate their motivation on e-learning, and that University students may want to adopt e-learning because they think e-learning experience will be beneficial for future job preparation. Or, they feel emotionally afraid of falling behind other students who use e-learning, if they do not take e-learning courses.

Subjective norm is the second most important construct that affects both behavioral intention and attitude towards e-learning. Therefore, it is necessary for the university to put more emphasis on e-learning by offering a greater variety of e-learning courses and advertising the benefits of e-learning to attract students (Park, 2009).

According to Mehra and Midian (2010), there are six factors that can be used in predicting students' attitude to adopt e-learning. These factors are perceived Usefulness of e-learning (U), Intention to use (I), Ease of Use (EOU), pressure to use (PTU), E-learning stressors (ES), Technical and pedagogical support (TPS).

According to Folorunso and colleagues, (2006) Technology support and system support of e-learning system have impact on the acceptance and usage of technology. They (ibid) further suggest that it is important to consider the reliability and quality of the system as it plays an important role in the acceptance of e-learning.

Other factors that have been identified in previous research that can affect the acceptance and usage of e-learning in universities are Institutional support, Course content and knowledge management, Experience and Self efficacy (Fishbein and Ajzen, 1975, Venkatesh and Davis, 2000, and Kerka, 1999)

Presentation of Findings and Analysis

Reliability of Validation Questionnaire

The evaluation instrument was then examined for its reliability. This was examined using Cronbach's alpha values and as summarized in Table 1, some of the values measured above 0.70 which is an acceptable range recommended by literature and other values were above 0.80 which is considered very good. This means questionnaire can be relied upon.

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Table 1: Reliability Statistics for Individual Variables

<i>Variable</i>	<i>Cronbach's Alpha</i>	<i>N of Items</i>
Perceived usefulness	.736	3
Perceived ease of use	.852	3
Policy formulation	.798	3
Stakeholder consultation	.873	3
Sensitization	.749	3
Training	.797	3
Provision of incentives	.891	3
Policy enforcement	.770	3

Table 2: Reliability Statistics for the Whole Questionnaire

<i>Cronbach's Alpha</i>	<i>N of Items</i>
.932	24

From Table 2, reliability statistics for the whole evaluation questionnaire for the designed framework in this research measured to 0.932 cronbach's alpha. Like earlier mentioned it means framework is very good.

Factor Analysis

Factor analysis was conducted to examine convergent and discriminant validity.

Convergent Validity

Convergent validity was performed using principal component analysis method of extraction and the results presented in table 9 below.

Table 3: *Communality: Convergent Validity of the Validation Questionnaire*

	<i>Initial</i>	<i>Extraction</i>
Using the e-learning system improves my performance	1.000	.846
Using the e-learning system enhances my effectiveness	1.000	.630
Using the e-learning system improves productivity	1.000	.813
I can easily participate in e-learning activities	1.000	.759
I find the e-learning easy to use	1.000	.695
I can easily do what i want with e-learning	1.000	.797
Clear guidelines on how to use e-learning will have a positive effect on the current use of e-learning	1.000	.744
Knowing my responsibilities as stated in the policy will enable me participate in e-learning activities	1.000	.799
E-learning policy enforcement will have a positive effect on my attitude towards usage of e-learning	1.000	.827
I will accept to adopt e-learning once consulted	1.000	.739
I view e-learning as useful to my job once consulted	1.000	.694
Am able to use e-learning once consulted during its adoption	1.000	.884
I will adopt e-learning once sensitized	1.000	.625
Awareness of the existence e-learning will improve on its usage	1.000	.674
Sensitization improves the e-learning acceptance	1.000	.597
Training enables me accept and use e-learning properly	1.000	.652
I can easily participate in e-learning activities after training	1.000	.740
It is necessary to acquire skills in order to use e-learning	1.000	.819
Incentives will motivate me to use the system	1.000	.849
I view e-learning as useful to my job once rewarded	1.000	.834
I can use e-learning once incentives are provided	1.000	.793
Monitoring e-learning policy enforcement will improve its usage	1.000	.769
I am able to use e-learning once penalized	1.000	.757
E-learning policy enforcement will make me accept e-learning	1.000	.835

Extraction Method: Principal Component Analysis

It is considered to be satisfactory when Convergent validity items load high on their respective construct or factor. All the items after extraction exhibited a loading higher than 0.50 on their respective factors. This means there was a desirable measurement on convergent validity. Table 4 shows that six factors were extracted with eigenvalue >1.0.

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Table 4: Total Variance Explaining Eigenvalues

<i>Component</i>	<i>Initial Eigenvalues</i>			<i>Extraction Sums of Squared Loadings</i>		
	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>
1	9.722	40.507	40.507	9.722	40.507	40.507
2	2.212	9.217	49.724	2.212	9.217	49.724
3	2.201	9.169	58.893	2.201	9.169	58.893
4	1.695	7.061	65.954	1.695	7.061	65.954
5	1.246	5.192	71.145	1.246	5.192	71.145
6	1.094	4.558	75.704	1.094	4.558	75.704

Extraction Method: Principal Component Analysis

Discriminant Validity

This was evaluated by examining whether each item loaded higher on the construct it measured than on any other construct, the results are presented in table 5 below:

Table 5: *Component Factor Loading: Discriminant Validity of Validation Questionnaire*

	Component					
	1	2	3	4	5	6
Using the e-learning system improves my performance	.497					.540
Using the e-learning system enhances my effectiveness	.717					
Using the e-learning system improves productivity	.692					.474
I can easily participate in e-learning activities	.753					
I find the e-learning easy to use	.679					
I can easily do what i want with e-learning	.820					
Clear guidelines on how to use e-learning will have a positive effect on the current use of e-learning	.633					
Knowing my responsibilities as stated in the policy will enable me participate in e-learning activities	.572					
E-learning policy enforcement will have a positive effect on my attitude towards usage of e-learning	.832					
I will accept to adopt e-learning once consulted	.669					
I view e-learning as useful to my job once consulted	.658					
Amable to use e-learning once consulted during its adoption	.675					
I will adopt e-learning once sensitized	.622					
Awareness of the existence e-learning will improve on its usage	.592		.433			
Sensitization improves the e-learning acceptance	.697					
Training enables me accept and use e-learning properly	.494		.551			
I can easily participate in e-learning activities after training	.537					
It is necessary to acquire skills in order to use e-learning	.523					
Incentives will motivate me to use the system	.637		.457			
I view e-learning as useful to my job once rewarded	.573	.558				
I can use e-learning once incentives are provided	.666					
Monitoring e-learning policy enforcement will improve its usage	.579					
I am able to use e-learning once penalized		.534		.542		
E-learning policy enforcement will make me accept e-learning	.572			.574		

Extraction Method: Principal Component Analysis. 5 components extracted.

Table 5 summarises the results of discriminant validity. There was cross-

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loadings for some of the components as evidenced in the table. Factor loadings below 0.40 were suppressed. Discriminant validity was achieved since the factors loaded higher on the construct it measured than on any other construct based on the results above.

Regression Analysis Results

To explain the relationship between the dependent variables, perceived usefulness and perceived ease of use and the independent e-learning policies, Regression analysis was used. Regression analysis was employed to determine whether the independent variable had a significant bearing in explaining the dependent variables.

For both the independent and the dependent variables, close-ended items were presented to lecturers and the aim of this was to seek their perceptions with regard to e-learning policies, perceived usefulness and perceived ease of use. Responses were all based on a five point likert scale ranging from 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. Responses to these sets of items enabled the researcher to measure the extent to which e-learning policies affect perceived usefulness and perceived ease of use. To do this, a composite index for each respondent was obtained by taking average scores on both the independent and dependent variables. Accordingly, the average scores for each respondent on the three variables ranged from 1.0 to 5.0 with higher scores signifying a more favorable response and vice versa. The computed scores were then run against the independent variable to establish whether the responses on the former had a relationship with the two dependent variables. The rationale for computing these indices was to establish the extent to which the explanatory variable (e-learning policy) independently contributed to the dependent variables. First, the analysis was done with the help of a Pearson correlation coefficient and later, a linear regression was employed to determine whether the independent

variable had a significant bearing in explaining the dependent variables. Table 6 gives a summary of the correlation matrix between e-learning policy with perceived usefulness and perceived ease of use.

Table 6: *Correlation between E-learning Policy, Perceived Usefulness and Perceived ease of Use*

		<i>Perceived ease of use</i>	<i>Perceived usefulness</i>
E-learning policy	Pearson Correlation	.616	.749
	Sig. (2-tailed)	.000	.000
	N	213	213
	Sig. (2-tailed)	.000	
	N	213	213

In table 6 the value of the correlation between E-learning policy and Perceived ease of use is .616. Since this value is positive, it means that E-learning policies are positively correlated with Perceived ease of use in the sense that in universities where e-learning policies are well established, there is a likelihood that perceived ease of use will improve. In addition, the sig. value of the correlation was significant ($.000 < 0.05$). The results provide evidence that well established e-learning policies are important in enhancing perceived ease of use among the academic staff of universities in Uganda.

In the same Table, the correlation between e-learning policy and perceived usefulness took a positive value equal .749 which means that there is a linearly positive relationship between e-learning policies and perceived usefulness among the staff teaching in Ugandan universities. This relationship was also found to be statistically significant given the fact that the sig-value of the correlation was less than the level of significance ($.000 < 0.05$). The implication of these findings is that whenever there are effective e-learning policies, perceived usefulness among lecturers would significantly increase.

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In general, the results demonstrate that respondents, whose responses on e-learning policies were positive were also likely to have positive responses on perceived ease of use and perceived usefulness. Accordingly, these findings show strong agreement with the researcher’s assumption that e-learning policies enhance perceived ease of use and perceived usefulness.

Having established linearly positive relationship between the explanatory variable and the dependent variables, the average scores for each respondent on the two variables were further subjected to a simple linear regression to determine the extent to which e-learning policies affect perceived usefulness and perceived ease of use. The findings are given in Tables ... and.....

Table 7: *Summary of the Linear Regression on the Effect of E-learning Policy on Perceived ease of Use*

Variables	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	2.031	.200		10.179	.000
E-learning policy	.609	.054	.616	11.346	.000
R²=.379					

a Dependent Variable: perceived ease of use

The summary of the linear regression in Table 7 first of all indicate that there is a linear relationship between E-learning policy and perceived ease of use. This was given by the positive coefficient of the explanatory variable equal to 0.609 which was statistically significant at 0.05 (p=.000). This means that perceived ease of use is significantly dependent on establishment/ presence of e-learning policies in universities. According to the results, the value of R² was equal to .379 which suggests that holding other factors

constant, about 38 percent of perceived ease of use is explained by E-learning policies.

Table 8: Summary of the Linear Regression on the Effect of E-learning Policy on Perceived Usefulness

Variables	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	1.355	.178		7.610	.000
E-learning policy	.787	.048	.749	16.427	.000
R²=.561					

a Dependent Variable: perceived usefulness

In Table 8, a look at the results of the coefficient of the independent variable clearly demonstrates that E-learning policy has a positive and statistically significant role it plays on the extent to which lecturers responded to items relating to perceived usefulness. As can be read from the table, the coefficient of the independent variable was equal to 0.787 while the p-value was .000 which was less than the level of significance (0.05). The implication of this finding is that E-learning policy has a significant influence on perceived usefulness. Beneath the Table is the result of the R² equal to .561 which implies that the explanatory variable (E-learning policy) accounts for about 56.1% of the variations in the dependent variable. In other words, holding other variables constant, lecturers’ perceived usefulness is significantly dependent on E-learning policy by a magnitude of 56.1%

Conclusion

This study established out that there is a low level of e-learning acceptance and usage in Ugandan and the reasons for this is lack of adequate e-learning policies in place.

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E-learning policy needs to be formulated and implemented as this plays an important role in e-learning acceptance and usage. The study proves that where properly laid out e-learning policies are present; the level of acceptance and usage is improved

Consultation with all stakeholders should be done prior to adopting and during the adoption process of e-learning systems and Users of adopted e-learning systems should adequately be trained in use of e-learning; this would improve on their overall system usage. Staff that actively participate and use e-learning outstandingly should be given incentives to encourage further usage.

Sensitization of relevant stakeholders should be paramount as this would improve on the acceptance and usage levels.

Future Researches

However the study covered a selected number of universities, thus it would be good if a larger sample size is used and it can be extended to cover other institutions of education

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