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Determinants of Teachers' Attitudes Towards E-Learning in Tanzanian Higher Learning Institutions

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Résumé de l'article

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It was found that teachers have positive attitudes towards e-learning where computer exposure played a statistically significant contribution to their attitudes. It is recommended that training in e-learning needs to be provided to teachers to widen their understanding of e-learning. There is also a need to strengthen factors associated with teachers' positive attitudes towards e-learning. Results from this study are of particular importance to both teachers and the education stakeholders in Tanzania.

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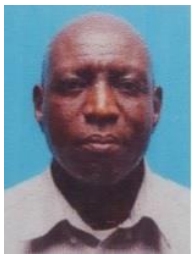

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Abstract

This survey research study presents the findings on determinants of teachers' attitudes towards e-learning in Tanzanian higher learning institutions. The study involved 258 teachers from 4 higher learning institutions obtained through stratified, simple random sampling. Questionnaires and documentary review were used in data collection. Data were analysed using statistical package for the social sciences (SPSS). Chi-square was performed to examine the association of variables.

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Keywords: Attitude, e-learning, higher learning institutions, teachers

Introduction

E-learning has, over recent years, become ever more popular and is gaining wide acceptance as a "non-traditional" mode for accessing higher education (Altbach, Reisberg, & Rumbley, 2009). Throughout the world, higher learning institutions (HLIs) are increasingly turning to e-learning to support and enhance their learning and teaching activities (Decman, 2015; Glenn, 2008). In this study, e-learning connotes for all kinds of electronically supported learning (whether in networked/non-networked environments) where the learner interacts with teachers, content, and other learners regardless of place and time (Brown 2003; Sangra, Vlachopoulos & Cabrera, 2012).

The potential of e-learning technologies has enabled HLIs to reach new learners at a distance, increase convenience and expand educational opportunities (Salmon, 2011; Weller, 2007). Teachers and learners no longer have to rely exclusively on printed books, other physical media material available in libraries, and materials in limited quantities for their educational needs (Holmes & Gardner, 2006). Literature has consistently suggested e-learning to be the best alternative to managing constraints to accessing education (Clarke, 2008; Garrison, 2011; Weller, 2007).

However, successful implementation of e-learning in education relies much on teachers' attitudes towards it (Avidov-Ungar & Eshet-Alkakay 2011; Salmon 2011; Teo 2011; Teo & Ursavas 2012). Liaw, Huang and Chen, (2007) argue that "no matter how advanced or capable the technology is, its effective implementation depends upon users having a positive attitude toward it." (p. 1069) Early literature on teachers' attitude towards technology development, adoption, and implementation define attitudes toward technology as an affective (i.e., experience of feeling or emotion) or evaluative judgement about technology in question (Davis, Bagozzi, & Warshaw, 1989). Thus, it is a degree to which an individual perceives technology with the intention to use it (Barki & Hartwick, 1994). Technology, which is believed to be both important and personally relevant, is more likely to create people's positive attitude towards it (Rogers 2003; Teo 2011). For example, Ferdousi (2009) argues that teachers' attitudes have a significant impact on their decisions "…about if, when, and how they will use e-learning systems" (p. 5).

Authors in attitude formation and attitude change have consistently shown that attitude can be constructed from three general classes of information: affective information, cognitive information, and information concerning past behaviors or behavioral intentions (Ajzen & Fishbein 2005; Barki & Hartwick 1994). People's evaluative judgment of an object depends on how they feel about it (affective evaluation), knowledge they have about the object (cognitive evaluation), and how they have acted towards it in the past (behavioral evaluation) (Eagly & Chaiken 2007; Fazio 2007).

Factors found to be influencing teachers' attitudes towards e-learning have being explored in several studies (Chen & Tseng 2012; Karaca, Can, & Yildirim, 2013; Inan & Lowther 2010; Teo, Ursavas¸ & Bahcekapili, 2011; Venkatesh, Morris, Davis, & Davis, 2003; Yilmaz & Bayraktar, 2014). Literature classified factors affecting teachers' attitudes towards a technology into two categories: internal and external factors (Teo 2009; Venkatesh et al., 2003). Internal factors include teachers' internal belief about the technology formed by the degree to which teachers will perceive favourably or unfavourably toward the technology, whereas external factors include subjective norms (Ajzen & Fishbein, 1980; Venkatesh et al., 2003), organizational structure (Rogers, 2003), technical factors such as complexity of a technology (Rogers, 2003; Weller, 2007), and environmental factors (or facilitating conditions) such as Information and Communications Technology (ICT) infrastructure, ICT features and support, and many more (Chien, Wu, & Hsu, 2014; Teo, 2009).

Literature also associates teachers' attitudes by their personal characteristics (mediated factors) such as gender (Dong & Zhang, 2011; Venkatesh et al., 2003), years of teaching experience (Cavas, Cavas, Karaoglan, & Kisla, 2009; Karaca, Can, & Yildirim, 2013; Nasser & Abouchedid, 2000; Onasanya, Shehu, & Shehu, 2010), exposure to computers, (Cavas et al., 2009; Karaca, Can, & Yildirim, 2013; Krishnakumar & Kumar 2011), and academic qualification (Males, 2011; Rahimi & Yadollahi, 2011).

Given that the Tanzanian education system is in transition from face-to-face classroom learning to e-learning (United Republic of Tanzania [URT], 1996; United Republic of Tanzania [URT], 1998; United Republic of Tanzania [URT], 2003; United Republic of Tanzania [URT], 2010), and teachers been the

key stakeholders of all formal education, their attitudes towards e-learning have a significant impact on their decision of whether to accept or reject it (Rogers, 2003). Therefore, the goals of this research are surveying teachers' attitudes toward e-learning in Tanzanian higher learning institutions and determining factors that influence their attitudes. The following are research questions that guided the study;

1. What are teachers' attitudes towards e-learning?

2. Is there any association between teaching experience, teachers' qualifications, gender, exposure to computers, and teachers' attitude towards e-learning?

Conceptual Framework

This study reports part of the research conducted in Tanzanian HLIs that investigated teachers' attitudes towards e-learning. The study was guided by Davis' (1986) Technology Acceptance Model (TAM) (see Figure 1).

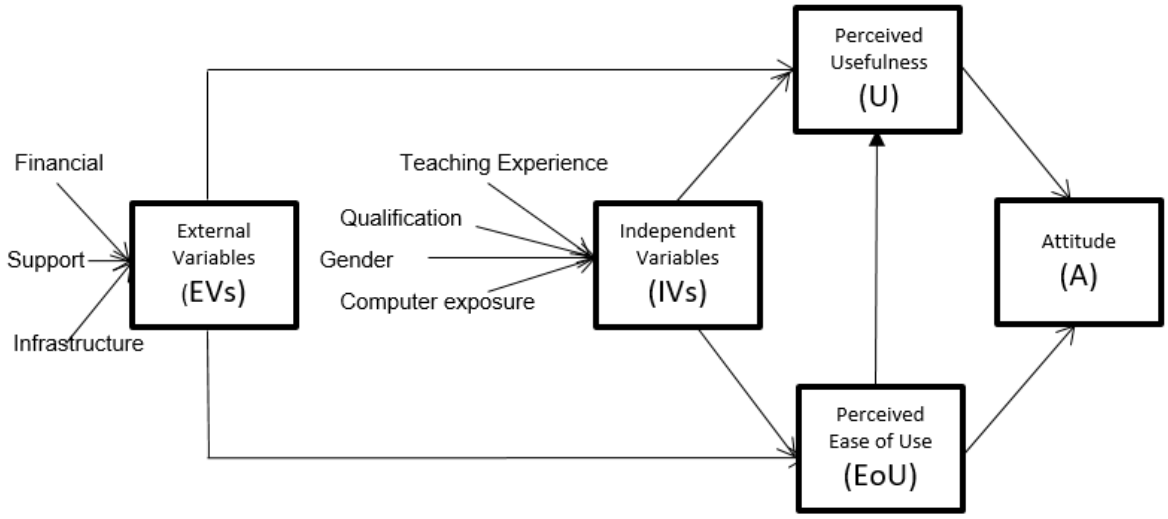

Figure 1. A conceptual framework of the study. Adapted from Davis, Bagozzi & Warshaw (1989).

The TAM is an information systems theory that predicts how the user comes to accept and use technology. The model (Figure 1) consists of four constructs: external variables (EV), perceived usefulness (U), perceived ease of use (EoU), and attitude (A) toward e-learning. The perceived usefulness means the degree to which a person believes that using a particular system would enhance his or her job performance, and perceived ease of use means the degree to which a person believes that using a particular system would be free from effort (Davis, 1986). Two constructs from TAM namely, *behaviour intention* and *actual system use* (Davis, 1986), were not included in the conceptual framework because usage of e-learning in Tanzanian HLIs is still in its infancy (Hooker, Mwiyeria, & Verma, 2011; Sanga, Magesa, Chingonikaya, & Kayunze, 2013), and therefore, attitude (A) was selected to be a dependent variable.

In this model, external variable, EV was suggested to mediate the impact of the two constructs, perceived usefulness and perceived ease of use, on attitude with single directional arrows representing one-way impact. This can imply that the presence of external variables in this model is very useful because the assumption that teachers would always accept e-learning out of its usability and usefulness can be misleading. Teachers may reject e-learning regardless of its usefulness for the reasons related to external variables. External variables are factors operating in real-life situation and, in this study, they included aspects related to infrastructural challenges; financial constraints; technical, and managerial support (Figure 1).

In Figure 1, the independent variables teaching experience, academic qualification, gender, and computer exposure are suggested to mediate the impact of the perceived usefulness and perceived ease of use on attitude. In this study, perceived usefulness was measured by how teachers perceived aspects related to benefits from e-learning, whereas perceived ease of use was measured by how teachers perceived use of e-learning tools such as computers. Rogers (2003) claims that "the adoption of an innovation related to communication technology can be measured by computer records of each individual's degree of use of personal computers and so forth." (p. 418)

TAM is helpful for both prediction and explanation in the sense that through user's internal beliefs and different significant variables, the researcher can identify reasons that lead to adoption or rejection of e-learning and find appropriate corrective measures or explanations for that decision (Davis et al., 1989; Turner, Kitchenham, Brereton, Charters, & Budgen, 2010). The TAM is easy to extend and validate whilst results from applying the extended TAM are often accepted as being accurate predictors of adoption as well as usage (Davis 1989; Legris, Ingham, & Collerette, 2003).

Methodology

This study involved 258 teachers from four HLIs, obtained through stratified simple random sampling and simple random sampling (Bryman 2012; Cohen, Manion, & Morrison 2011; Robson 2011). Similarly, purposive sampling technique, based on the prior information relevant to the study, was used to select institutions to be involved in the study.

The study used quantitative approach to collect data from participants. Data were collected from close-ended paper-and-pencil questionnaire, whereas documentary review was used to extract both descriptive and numerical data where information on teachers' background characteristics was also verified. For the closed-ended questionnaire, the study used a Test of e-Learning Related Attitudes (TeLRA) scale (for more details about the scale development, reliability and validity see Kisanga & Ireson 2016) to measure teachers' attitudes towards e-learning (see Appendix). The TeLRA scale consisted of a 4-point Likert response format with degrees of agreement ranging from: 1- strongly disagree, 2- disagree, 3- agree to 4- strongly agree. Reliability of the scale was measured by computing Cronbach's coefficient alpha (Bryman & Cramer, 2011; Cronbach 1951) and scored 0.857 (N=258).

All data were analysed using statistical package for the social sciences (SPSS). Chi-square was performed to examine the association of variables.

Findings

Teachers' Demographic Characteristics

The study collected data from 258 teachers. Analysis of data collected about teachers is given in Table 1. Out of the 258 teachers involved in the survey, females accounted for only 48 (18.6%) whereas 210 (81.4%) were males. In terms of teachers' qualifications, results demonstrated that 15 (5.8%) teachers had a Higher Diploma, 58 (22.5%) teachers had a Bachelor's degree, and 154 (59.7%) teachers had a Master's degree. Teachers with a Doctorate degree were 29 (11.2%) and only two (0.8%) teachers had none of the above mentioned qualifications, so they were categorized as teachers with *other* qualifications.

Data on teaching experience revealed that there were 131 (50.8%) teachers with teaching experience less than 6 years and 53 (20.5%) teachers with teaching experience from 6 to 10 years. Furthermore, 21 (8.1%) teachers had 11 to 15 years of teaching experience and the last category had 53 (20.5%) teachers with more than 15 years of teaching experience.

Data on teachers' computer exposure indicated that 238 (92.2%) teachers had exposure in using computers, whereas only 20 (7.8%) teachers had no such exposure. Further information on exposure to computers revealed that 245 (95.0%) teachers had access to computers in their offices and 214 (82.9%) at their homes.

Table 1

Basic Characteristics of Teachers

Teachers' Characteristics

Characteristics	Category	Frequency & Percentage in the Study		Frequency & Percentage within Category			
		N	%	Female	%	Male	%
Gender	Female	48	18.6	48	100.0	210	100.0
	Male	210	81.4				
Qualification *(Highest)*	Higher Diploma	15	5.8	5	33.3	10	66.7
	Bachelors' Degree	58	22.5	7	12.1	51	87.9
	Masters' Degree	154	59.7	30	19.5	124	80.5
	Doctorate Degree	29	11.2	6	20.7	23	79.3
	Other	2	0.8	0	0.0	2	100.0
Teaching Experience	0 - 5 years	131	50.8	25	19.1	106	80.9
	6 - 10 years	53	20.5	10	18.9	43	81.1
	11 - 15 years	21	8.2	5	23.8	16	76.2
	Over 15 years	53	20.5	8	15.1	45	84.9
Exposure to Computers	Yes	238	92.2	42	17.6	196	82.4
	No	20	7.8	6	30.0	14	70.0
Total No. of Teachers		258	100	48	100.0	210	100.0
Other Characteristics							
Computer in the office	Yes	245	95.0	45	18.4	200	81.6
	No	13	5.0	3	23.1	10	76.9
Computer at home	Yes	214	82.9	41	19.2	173	80.8
	No	44	17.1	7	15.9	37	84.1

Generally, information from Table 1 suggests that majority of teachers in this study were males, holding Master's degrees, with teaching experience from 0 to 5 years and with exposure to computers.

Teachers' Attitudes Towards E-Learning

The first research question was, "what are the teachers' attitudes towards e-learning?" The study required establishing a percentage of teachers who favored (or had positive attitude towards) e-learning and those who did not, that is that they had negative attitude towards e-learning. In order to achieve that, all questionnaire items were entered into SPSS. Negative worded statements were reversed accordingly such that low scores indicated negative attitude and high scores indicated positive attitude, that is SD=1; D=2; A=3; SA=4. Reversing negatively worded items minimizes response bias (Fraser, 1981; Pallant, 2010).

Statistics on teachers' attitude towards e-learning were obtained by adding all scores of responses from the TeLRA scale items and compared with the median score. The median was computed to be 105 and, for the purpose of this study, those who scored greater or equal to the median were considered to have a positive attitude because their average scores were either 3 (agreed) or 4 (strongly agreed), and those subjects who scored below the median were considered to have negative attitudes because their average scores were either 1, strongly disagree or 2, disagree (see also Mills, Gerald, Knezek & Wakefield 2013).

Thus, out of 258 teachers who participated in the research, only 243 (94.2%) responded to all items and the results are displayed in Figure 2.

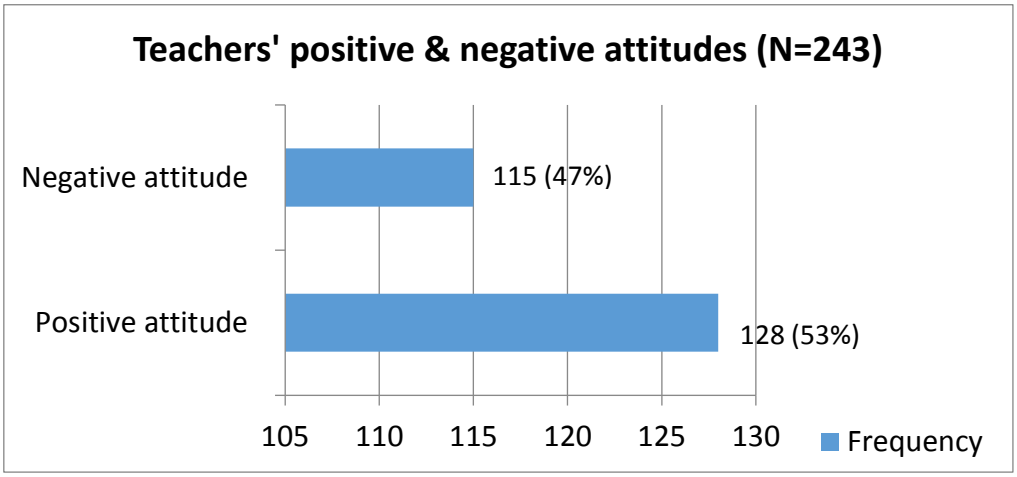

Figure 2. Teachers' positive and negative attitude.

Figure 2 shows that 128 (53%) teachers had positive attitudes towards e-learning, and the remaining 115 (47%) teachers had negative attitudes towards e-learning. On one hand, there is some evidence from this study that teachers' positive attitudes could be attributed to their computer experiences. Teachers' experiences on computers at their workplaces was mainly contributed by policy to use computers enforced by the management, introduction of Student Information Management Systems (SIMS), and ICT training programmes conducted at their institutions. On the other end, teachers' negative attitudes could be attributed to poor facilitating conditions or environmental factors.

Assessing Association Between Independent Variables and Attitude Towards E-Learning

The second research question was, "is there any association between teaching experience, teachers' qualifications, gender, exposure to computers, and teachers' attitude towards e-learning?" In particular, the researcher wanted to establish variable(s) that influenced the occurrence of the dependent variable. Thus, a Chi-square test was used in order to explore the association between the independent variables teaching experience, teachers' qualifications, gender, exposure to computers and the dependent variable teachers' attitude towards e-learning. The Chi-Square test is useful because of its ability to compare observed frequencies with the statistically generated values that would be expected if there was no relationship between the two variables under investigation (Pallant 2010; Tabachnick and Fidell 2013).

To achieve Chi-square test, the dependent variable *attitude* was collapsed into positive and negative, making it a categorical variable. In addition, some general assumptions concerning data were observed, that is, the minimum allowed frequency in any cell had to be greater or equal to five (Pallant, 2010). In this study, it was eight, and therefore, greater than the required standard.

In order to establish whether or not there was any association, the observed data were subjected to a Chi-square (with Yate's Continuity Correction) test for independence**.** Yate's Correction for Continuity was used to compensate for an overestimate of the obtained Chi-square value when used with a two by two table (Pallant, 2010).

To begin with, the study examined whether or not teachers' exposure to computers determined teachers' attitude toward e-learning. In particular, the study examined if there was a statistically significant difference in attitudes towards e-learning between teachers with computer exposure and those without. A total of 243 (94.2%) teachers responded to 36 attitude items in the questionnaire. Data are summarized in Table 2.

Table 2

Computer Exposure and Attitude Towards E-Learning

Computer exposure * Total Scale Scores Crosstabulation

			Total Scale Scores		Total
			Negative Attitude	Positive attitude	
Computer exposure	Yes	Count	102	124	226
		% within Computer exposure	45.1%	54.9%	100.0%
		% within Total Scale Scores	88.7%	96.9%	93.0%
		% of Total	42.0%	51.0%	93.0%
	No	Count	13	4	17
		% within Computer exposure	76.5%	23.5%	100.0%
		% within Total Scale Scores	11.3%	3.1%	7.0%
		% of Total	5.3%	1.6%	7.0%
Total		Count	115	128	243
		% within Computer exposure	47.3%	52.7%	100.0%
		% within Total Scale Scores	100.0%	100.0%	100.0%
		% of Total	47.3%	52.7%	100.0%

Table 2 shows that there were differences in teachers' attitude towards e-learning by exposure to computer. Percentage within group comparisons showed that teachers with exposure to computer had more positive attitudes towards e-learning by 31.4% higher than teachers with no exposure to computers.

A Chi-square test for independence (with Yate's Continuity Correction) was performed to determine whether or not the revealed difference was statistically significant. Findings indicated that there was a statistically significant difference between computer exposure and attitudes towards e-learning. Teachers with exposure to computers showed more favorable attitudes towards e-learning than those with no exposure as exhibited by χ^2 (1, n=243) = 5.04, ρ = 0.025, *phi* = -0.16 tests (see Table 3).

Table 3

Chi-Square Test: Computer Exposure Vs Attitude Towards E-Learning

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.229[a]	1	0.013		
Continuity Correction[b]	5.035	1	0.025		
Likelihood Ratio	6.466	1	0.011		
Fisher's Exact Test				0.021	0.012
Linear-by-Linear Association	6.203	1	0.013		
N of Valid Cases	243				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.05.

b. Computed only for a 2x2 table

The conventionally accepted minimum level of significance is ρ = 0.05 or smaller (Cohen, Manion, & Morrison 2011; Pallant, 2010). However, the effect size of -0.16 (the correlation coefficient) indicated a modest association (Cohen, Manion, & Morrison 2011), between teachers' exposure to computers and their attitudes towards e-learning.

Therefore, findings from the study demonstrate that there was a statistically significant association between computer exposure and teachers' attitudes towards e-learning. Thus, it implies that teachers' exposure to computers played a significant role in constructing positive attitudes towards e-learning and means that the higher the frequency of familiarity with computer systems use, the more positive the attitude towards e-learning can be observed.

In regards to other variables, gender, teaching experience, and qualification results indicated that there was no statistically significant association between these variables and attitude towards e-learning (ρ > 0.05). Thus, it is suggested that other variables should be considered alongside the variables *gender, teaching experience,* and *qualification* when explaining the difference in teachers' attitudes toward e-learning.

Discussion

Generally, findings reported in Figure 2 revealed that 53% of the teachers had positive attitudes towards e-learning, whereas 47% had a negative attitude. On one hand, there is some evidence that positive attitudes demonstrated by teachers could be attributed to their computer experiences, particularly at the work place (see Table 1). Results from this study concur with results from Cavas et al., (2009), Krishnakumar and Kumar (2011), as well as Karaca, Can, and Yildirim, (2013) which found association between computer exposure and attitude towards e-learning. Findings reported in Table 3 significantly demonstrated that teachers with exposure to computers had more positive attitudes towards e-learning than those with no exposure ($\rho < 0.05$). It implies that computer exposure/familiarity has a strong influence on teachers' attitudes towards e-learning. This assertion concurs with Ajzen (2001) as well as Ajzen and Fishbein (2005) that familiarity can lead to positive feelings and when such positive feelings are activated; their effect would be expected to influence an attitude, which, in turn, has an impact on actions. The assertion is also in line with the theory of the *mere exposure effect*, which holds that exposing an individual repeatedly to a particular stimulus enhances the individual's attitude towards the stimulus (Burgess & Sales, 1971; Young & Claypool, 2010). In addition, the data reported in Table 1 in this study, shows a higher number of teachers with computer exposures both at their work places (245, 95%) and homes (214, 82.9%) further enhancing the association between computer exposures and attitudes.

Results from this study are also in line with the developed conceptual framework of this study adapted from the TAM theoretical model, which explains the relationship between an individual's perceived ease of use (EoU) and attitude (A) towards a stimulus. The TAM theory suggests that the more that an individual perceives technology to be free from effort, the more favourable that individual's attitude will be (Davis, 1986; Venkatesh et al., 2003). Free from effort can be measured in terms of an individual's perceived ease of use, usability, and flexibility of that technology (Holden & Rada, 2011). Findings from this study suggest that teachers in the studied institutions found computers easy to use.

Overall, these findings provide empirical support cited in literature that exposure to computers has a positive impact on attitude formation towards e-learning. Findings further extend validation of the theoretical framework adapted from the TAM theory to be a useful model to explain teachers' attitudes towards e-learning when more than half of teachers of HLIs in Tanzania with computer exposures demonstrated positive attitudes towards e-learning. The study suggests that if proper support to provide more teachers with accessibility to computers and further enhancing awareness on benefits from e-learning, their attitudes towards e-learning could improve significantly, easing adoption and later implementation of e-learning in HLIs.

On the other hand, results from the study suggest that teachers' negative attitudes towards e-learning could be attributed to other external factors that can hinder e-learning adoption in HLIs. Teo (2009) suggests that the presence of external variables such as poor ICT infrastructure and support on system use had a significant influence on teachers' attitudes towards technology. This is also in line with Legris, Ingham, and Collerette's (2003) argument that external variables can enhance understanding of what influences attitudes and their presence can contribute to the explanation of individuals' differences towards using the technology.

Teachers' general attitudes towards e-learning obtained from a sample of teachers from Tanzanian HLIs provided a useful data for e-learning adoption in HLIs as well as further investigation of teachers' *behavioral intention* and later their *action* towards using e-learning.

Conclusion

In conclusion, findings from this study suggest that teachers' positive attitude to e-learning is essential if Tanzanian HLIs need to successfully transform its education systems from the current classroom face-to-face methods to e-learning. Teachers are the key stakeholders of education and their perception on adopting e-learning also has a significant impact on students' attitude formation towards e-learning (Sun, Tsai, Finger, Chen, & Yeh, 2008; Gibson et al., 2014).

Similarly, through the use of the TeLRA scale, researchers can identify attitudes towards e-learning and their factors, consequently, enhancing its reliability as well as validating it across a variety of settings and to wider populations. Identification of attitudes and their factors would provide useful knowledge for education stakeholders, which can help in planning and increasing effectiveness of the adoption of e-learning in HLIs by working out factors, which lead to negative attitudes and strengthening those leading to positive attitudes.

Although, association of other factors in this study such as gender, qualifications, and teaching experience with teachers' attitudes towards e-learning were found to be insignificant, results from this study provided a useful springboard for further investigation of teachers' behavioral intention to use e-learning because the majority of teachers were found to have positive attitudes towards e-learning.

Recommendations

The key recommendation for effective transition from face-to-face to e-learning in Tanzanian HLIs suggested by this study is that teachers need to be equipped with the pre-service and in-service awareness training programmes on e-learning technology. Knowledge of e-learning plays a significant role in deciding whether to accept or reject it (Rogers, 2003).

In order to emphasize e-learning awareness, it is recommended that professional development programmes on e-learning should be initiated by responsible institutions so as to allow teachers improve skills and knowledge. Programmes can be in any useful format and can include either or both short and long term training, which can be conducted either locally or away. Short term training may include:

i. Seminar/workshop facilitated by experts in e-learning programmes development and management from institutions that have broad as well as intensive experience in e-learning practice. Training can be conducted in phases beginning with technical staff particularly on aspects related to supporting students and staff in using the system as well as system installation, operation, maintenance, repair, administration, and security,

ii. Training can further be extended to teachers, and can focus on how to convert content to an electronic format, familiarity with different functions of an e-learning platform including how to facilitate learning and support learners in the learning platform. This can be supplemented by scheduled individual consultations follow-ups to monitor progress.

Similarly, long term programmes may include further studies on aspects related to online instruction design, multimedia production, and animation, which can involve both teachers as well as technical staff and they can be offered anytime when need arise.

Although pre-service and in-service training seems to be essential for the adoption of e-learning in HLIs the study further recommend education stakeholders to strengthen factors which lead to positive attitude and work out factors which lead to negative attitudes. For example, trainings alone can be meaningless if teachers are not equipped with tools such as computers so that they can realize what they have learnt. Literature has consistently show the influence of computers in developing individuals' attitudes towards e-learning. Moreover, technical support services should be instituted to ensure that the provided tools are always operating and in good order. Similarly, institutions and the ministry responsible for education should make the adoption of e-learning possible through provision of infrastructure and support thereby minimizing/eradicating negative attitudes towards e-learning among teachers in Tanzanian HLIs.

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Appendix

Test of e-Learning Related Attitudes (TeLRA) Scale

Information about teachers' understanding and attitudes about e-learning.

Instructions

- There is no wrong answer; each response will be treated as a correct one. Your opinion is what is required in this study.
- Do not think too long about each statement. It should take you around 10 minutes to complete.
- For each statement, put a tick (✓) to show your level of agreement; **Strongly Disagree**, **Disagree**, **Agree,** and **Strongly Agree**. Do not tick across two boxes.

	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1	E-learning is very economical for educational institutions to adopt.				
2	I believe using e-learning will improve the quality of my work.				
3	Computers make work more interesting.				
4	I prefer reading articles in e-learning.				
5	It is easier to revise electronic educational materials than printed material				
6	I prefer using a computer to prepare my lessons.				
7	I feel uncomfortable reading a text book on a computer screen than a physical text book.				
8	I enjoy teaching using computers.				
9	Delivering a lecture through electronic technologies is very difficult.				
10	E-learning requires expensive technical support.				
11	E-learning reduces quality of knowledge attained.				
12	Interacting with the computer system is often frustrating.				
13	A face-to-face method is more learner-centred than E-learning methods.				
14	I believe using e-learning technologies will improve my job performance.				
15	Communicating through social networks is fun.				
16	I like reading magazines on new technology innovations.				
17	Teaching through e-learning is tiresome.				
18	E-learning increases learners' social isolation.				

	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
19	E-learning technologies are difficult to use.				
20	Using computer systems requires a lot of mental effort.				
21	Discussions on e-learning technologies are uninteresting.				
22	My institution has enough teaching-learning resources to carry out e-learning.				
23	E-learning will increase teachers' efficiency.				
24	Working with computers is exciting.				
25	I like discussing about new e-learning innovations.				
26	Supporting learners in an e-learning environment is very difficult.				
27	E-learning infrastructure is very expensive for the government to afford.				
28	It will be difficult for me to become skilful in the use of e-learning tools.				
29	I make errors frequently when using a Computer.				
30	Using a computer at home is very frustrating.				
31	Using e-learning technologies will allow me to accomplish more work than would otherwise be possible.				
32	I enjoy computer games very much.				
33	E-learning is a threat to teachers' employment.				
34	E-learning will provide me with better learning opportunities than traditional means of learning.				
35	I find computer online interaction unexciting.				
36	Communicating through electronic mails is annoying.