THE INFLUENCE OF PRINCIPALS', TEACHERS' AND STUDENTS' ATTITUDE ON READINESS TO ADOPT e-LEARNING IN SECONDARY SCHOOLS IN KITUI DISTRICT, KENYA

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Abstract

Studies conducted in the field of ICT use in secondary schools reveal that, although in the past few years teachers and students have enjoyed adequate access to an assortment of ICTs such as computers, laptops, projectors printers, e-blackboards, mobile phones for use n integration of teaching and learning in schools, the level of utilization of the ICTs by teachers and students in Kitui District is still minimal. This study sought to examine the relationship between Principals, teachers' and students' attitude on utilization of ICTs and the readiness to adopt e-learning in curriculum implementation at secondary school level. The major objective of the study was to establish the extent to which the attitude of principals, teachers and students influence readiness to adopt e-learning in secondary schools in Kitui District. Cross–sectional survey research design was adopted for the study. A sample of 66 principals, 66 teachers and 347 students, were involved in the study. The multiphase sampling procedure was adopted for this study. Data were collected using questionnaires and an observation schedule. The resultant information was analyzed by employing the quantitative approach which involved descriptive and inferential statistical procedures. The findings of the study reveal that the attitude held by secondary school Principals and Teachers had no significant influence on the schools' readiness to adopt e-learning. However, the attitude held by students had a significant influence on the schools' readiness to adopt e-learning. The study recommends that the government should plan to address the issue of e-learning infrastructure by availing e-learning equipment, enhancing connection to reliable sources of power, improving connectivity to various internet services and augmenting Human Resource

capacity by organizing training programmes for Principals, Teachers and Students. Secondary schools should employ support staff members such as computer laboratory technicians or assistants before embarking on full-scale implementation of e-learning in schools in Kitui District and, indeed, all other remote semi-arid districts in Kenya. This will enhance positive attitude and confidence that e-learning can be successfully adopted in secondary schools in Kenya regardless of the location of the school

Keywords: Information technology, attitude, e-learning, adoption of e-learning

Introduction

The use of Information Communication Technology (ICT) at all levels of education is no doubt the catalyst for improving access to quality education by all and to acquire knowledge- based economy. On recognizing the transformational power that ICT has on the management, teaching and learning in schools, the government of Kenya enacted a policy on ICT and a plan in 2006 to introduce e-Learning first of all in Primary and Secondary schools and then eventually at all levels of education as indicated in the 2002-2008 Development Plan (Farrell, 2007). Successful e-pedagogy depends on effective e-facilitation, which can be made difficult or possible by various factors, depending on the level of preparedness of implementers. Lumumba (2007), in his study on the challenges facing e-Learning in Public Secondary schools, based on the NEPAD pilot project schools in Kenya, established that the e-learning project faced many challenges. He singled out ICT skills inadequacy among the teachers and learners, lack of adequate e-Learning facilities (infrastructure) and negative attitude towards e-Learning among students and teachers as key obstacles to the success of the e-learning project. He attributed such challenges to the lack of preparedness among the institutions and implementers before the implementation process began. Lumumba recommended that for the implementation of e-Learning in educational institutions to be successful, factors determining the readiness to adapt to e-learning need to be established and dealt with adequately before the implementation process commences.

Successful integration of ICT in the school environment is to a large extent influenced by the attitude held by the implementers. Negative attitude towards e-learning among students and teachers was found to be the key obstacle to the successful implementation of e-Learning projects in the NEPAD schools in Kenya (Lumumba, 2007). Therefore, there was need to do a study to establish the extent to which attitude of principals, teachers and students towards e-Learning influenced readiness to implementation of e-curriculum in secondary schools. Albirini, (2006) maintain that one of the factors that greatly influence the

achievement of meaningful use of computer technology is the teacher's attitude towards the use of technology in teaching and learning process. The teachers' attitude is a major predictor of the acceptance and actual utilization of computers in the classrooms and in the management of their work. A study carried out by Harrison and Rainer in 1992 using data compiled from 1990 survey of 776 knowledge and information workers from large university in the southern United States, found that participants with negative computer attitudes were less skilled in computer use and were therefore less likely to accept and adapt technology than those with positive attitudes. The attitude held by implementers, towards e- Learning is perceived as having some influence on the readiness to adopt e-Learning. Principals, Teachers and students are central to the successful implementation of e- Learning in secondary schools. However, the attitude they hold and the extent to which it influences the readiness to adopt e-Learning is yet to be ascertained. It is against this background that, this study sought to establish the influence of principals, teachers and students attitude on readiness to adopt e-learning in secondary schools.

Research questions of the study

The study sought to answer the following research questions:

1. To what extent does the attitude held by the principals towards e-Learning influence the readiness to adopt e-Learning in secondary schools in Kitui District?
2. Does the attitude held by the teachers towards e-Learning have influence on the readiness to adopt e-Learning in secondary schools in Kitui District?
3. Is there any relationship between the attitude held by the secondary school students and the readiness to adopt e-Learning in secondary schools in Kitui District?

Based on the research questions, the following hypotheses were formulated:

Hypothesis H_{01}: *Readiness to adopt e-Learning in secondary schools is not significantly influenced by the attitude held by secondary school principals towards e-learning.*

Hypothesis H_{02}: *Readiness to adopt e-Learning in secondary schools is not significantly influenced by the attitude held by secondary school teachers towards e-Learning.*

Hypothesis H_{03}: *The attitude of secondary school students towards e-Learning has no significant influence on the readiness to adopt e-learning.*

Research Methodology

The study applied a combination of quantitative and qualitative research approaches to source, process and analyze the information**.** Cross–sectional survey design was adopted

because of its ability to elicit large amount of information through a single questionnaire administered to many participants. The study targeted all principals, teachers and students from public secondary schools in Kitui District, that had a form three class as at January, 2010. From a sampling frame of 80 public secondary schools, the multiphase sampling procedure was used to obtain a sample of 66 principals, 66 teachers and 347 students, to represent teachers and learners and to serve as a basis for analysis of their main characteristics and their contribution to the readiness of the institutions to adopt e-Learning. Data were collected using three sets of questionnaires and an observation schedule for triangulation purpose. To ensure and increase the validity and reliability of the instruments, a pilot study was conducted in 10 schools which were not sampled for the major study.. The Statistical Package for Social Science (SPSS) was used to analyze the resultant information to produce frequencies, percentages, and to do further analysis using Pearson's correlation coefficient, one way ANOVA and Regression techniques by employing the quantitative approach which involved descriptive and inferential statistical procedures. Qualitative data were analyzed by daily briefs, categorization into themes and narrations of respondents' quotations and verbatim.

Literature Review

Attitude is a predisposition to act, but it is no guarantee of actual behaviour. On the other hand, people rarely behave in a manner inconsistent with their attitudes/ beliefs, as this would create internal tension or dissonance so that, favorable or unfavorable attitudes provide the decision maker with valuable information for planning the most effective course of action (Baker, 1991).

In his study, Gakuu(2006) points out that Principals' attitude towards the adoption of e-Learning in Secondary schools is a critical issue that needs consideration and investigation for successful implementation of the new e-Learning initiative. Gakuu maintains that as the head of the institution, the principals hold a very strategic position in influencing the decisions and the actions of other members of the school community. For example, the attitude that the Principals hold towards ICT(e-Learning) adoption in secondary schools will greatly affect the teachers and by extension, students' attitudes, decision and actions towards e-Learning initiatives. It is therefore imperative to assess the Principals' attitude towards the adoption of e-learning in Secondary schools and establish the role played by their attitude towards e-Learning in determining the readiness to adopt e-Learning.

It is equally important to investigate the attitude that teachers themselves hold towards the adoption of e-learning in their schools. Teachers are expected to carry out the

implementation process and unless they have a positive attitude, it will be a serious obstacle to the implementation. Lumumba (2007) points out that it is not in doubt that the involvement of teachers is instrumental in unlocking potential gains which e-learning could offer to the learners, but teachers' negative attitude towards the use of e-learning will greatly limit the learners' chance of benefiting from e-learning. It is equally important, to study the effect of personal characteristics of the secondary principals and teachers, on the influence of their attitude toward e-Learning and the schools' readiness to adopt e-Learning.

Similarly, the attitude held by students towards the adoption of e-learning is of great concern given that, they are the recipients and key beneficiaries of the e-learning technology. Students are at the core of the e-learning adoption process, and its success, depends greatly on the extent to which students accept it. This calls to the need to establish the influence of students' attitude on readiness to adopt e-learning.

Results

In order to answer the research questions, the following Null hypotheses were tested with a view to accept or fail to accept the results:

Hypothesis H_{01} The Attitude of Secondary School Principals towards E-learning has no Significant Influence on the Readiness to Adopt e-Learning in Secondary Schools

This hypothesis sought to establish whether the attitude held by Secondary school Principals towards e-Learning affected the schools' readiness to adopt e-Learning and whether the effect was significant or not. The principals' attitude was measured using various indicators, in the five point Likert scale format from which, two most important factors /indicators (those with highest factor loadings) were selected through the factor analysis approach. These two factors were used for the purpose of hypothesis testing. The indicators included the principals' belief that e-Learning materials can be easily transported through laptop computers and other storage devices such as CD ROMs and flash disks, and the belief that e-learning will avail information that is not easily available in text books. On the part of the readiness to adopt e-Learning, the two indicators used in the testing of other previous hypotheses were also applied in this hypothesis. That is, the availability of relevant skills in handling e-Learning, and the availability of sufficient electronic learning equipment. The specific indicators of attitude and readiness to adopt e-Learning were correlated with specific indicators of readiness to adopt e-learning. The results are indicated in Table 3.

Table 3. Correlation between Principals' Attitude and Readiness to Adopt e-Learning

INDICATORS		Belief that e-learning materials can be easily transported through laptop computers and storage devices like flash disks and CD ROMS	Belief that e-learning will avail information that is not easily available in textbooks
school readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Pearson Correlation	.010	-.011
	Sig. (2-tailed)	.944	.939
	N	**51**	**51**
School readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Pearson Correlation	.042	.096
	Sig. (2-tailed)	.772	.502
	N	**51**	**51**

*** Correlation is significant at the 0.05 level (2-tailed).**

The results indicated in Table 3 revealed that, the principals' belief that learning materials can be easily transported through laptop computers and other storage devices like flash disks and CD ROMs, had a positive influence on both the availability of sufficient electronic learning equipment, and relevant skills in handling e-Learning with a correlation coefficient of **r = 0.010** and **r = 0.042** respectively. However, the influence was not statistically significant in either case. The results also indicate the existence of a positive correlation (**r = 0.096**) between the principals' belief that e-Learning will avail information that is not easily available in text books, and the availability of relevant skills in handling e-Learning but, the correlation was not significant. On the other hand, there was a negative correlation(**r = -0.011**) between the belief that e-Learning will avail information that is not easily available in text books, and the availability of sufficient electronic learning equipment. However, the correlation was not statistically significant.

It can therefore be observed that Principals' positive attitude towards e-Learning had a positive influence on the readiness to adopt e-Learning while, principals' negative attitude was found to have negative influence on readiness to adopt e-Learning in secondary school. However, the correlation is not significant; hence we fail to reject the hypothesis which stated that the attitude of secondary school principals towards e-learning has no significant influence on readiness to adopt e-learning in secondary schools. Further investigation on the influence of the principals' attitude on readiness to adopt e-Learning in secondary schools, was done through the one-way analysis of variance. This was important in determining

whether the principals' attitude accounted for a significant proportion on the difference observed in the schools' readiness to adopt e-Learning than, could be accounted for by chance. The results of ANOVA are summarized in Tables 4 and 5 respectively.

Table 4. Influence of Principals' Attitude on the Readiness to Adopt e-Learning

INDICATORS	ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Schools' readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Between Groups	1.091	3	.364	.222	.880
	Within Groups	76.909	47	1.636		
	Total	78.000	50			
Schools' readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Between Groups	14.961	3	4.987	1.921	.139
	Within Groups	122.019	47	2.596		
	Total	136.980	50			

The results in Table 4 indicate that, the Principals' attitude towards e-learning, does not lead to a significant difference on school's readiness to adopt e-learning. The ANOVA result for the Principals' belief that e-Learning materials can be easily transported in soft form (attitude), and the availability of relevant skills in handling e-Learning (readiness) is **F (3, 47)** = **0.222**, P > **0.05**, while the result of ANOVA test for Principals' belief that e-learning materials can be easily transported in soft form (attitude) and availability of sufficient electronic equipment is **F (3, 47) =1.921, P > 0.05**. Significance levels for both indicators of readiness to adopt e-learning, **(P = 0.880)** and **(P = 0.139)** were greater than P= 0.05, meaning that the observed difference in schools' readiness to adopt e-Learning was not greater than that expected by chance. Hence, we fail to reject the null hypothesis which states that the principals' attitude has no significant influence on readiness to adopt e-Learning.

Table5. Influence of Principals' Attitude (on the Readiness to Adopt e-Learning

INDICATORS	ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Schools' readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Between Groups	.723	2	.361	.224	.800
	Within Groups	77.277	48	1.610		
	Total	78.000	50			
Schools' readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Between Groups	2.593	2	1.297	.463	.632
	Within Groups	134.387	48	2.800		
	Total	136.980	50			

The result of ANOVA indicated in Table 4 also provide support for the null hypothesis which stated that principals' attitude has no significant influence on the readiness to adopt e-learning. The ANOVA result, for the principals' belief that e-Learning will avail information that is not easily available in text books (attitude), and availability of relevant skills in handling e-learning is **F (2, 48) = 0.224, P>0.05** while the results of the belief that e-learning will avail information that is not easily available in text books (Attitude) and the availability of sufficient electronic e-learning equipment is **F (2, 48) =, P>0.05**. The significant levels were above the recommended level of **P = 0.05** for the two indicators of readiness to adopt e-Learning. The results indicate a significant level of **P = 0.800** for the availability of relevant skills in ICT and **P = 0.632** for the availability of sufficient electronic learning equipment. This implies that, the observed differences in schools' readiness to adopt e-Learning is not caused by the principals' attitude but also by many other factors. Hence, we fail to reject the hypothesis.

Teachers' Attitude towards the Adoption of e-Learning in Secondary Schools

The following hypothesis was tested to establish the influence of teachers attitude towards e-Learning n secondary schools:

Hypothesis H_{02} The Attitude of Secondary School Teachers Towards e-Learning does not have Significant Influence on Readiness to Adopt e-learning in Secondary Schools

The correlation coefficient (**r**) between the key attitude indicators (those with highest factors loadings), including the belief that, e-learning will avail information that is not easily available in text books and the belief, that the adoption to e-Learning will enhance teachers' and students' skills in ICT (independent variables), and the indicators of readiness to adopt e-Learning including the availability of relevant skills for handling e-Learning, and the availability of sufficient electronic learning equipment (dependent variable) was computed. The findings are given in Table 7.

Table 7. Correlation between Teachers' Attitude towards e-Learning and the Readiness to Adopt e-Learning

INDICATORS		Belief that e- learning avail information that is not easily available in textbooks	Belief on whether adoption of e- learning approach enhance teachers' and learners' skills in ICT or not
Schools' readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Pearson Correlation	.017	-.284(*)
	Sig. (2-tailed)	.902	.034

	N	**56**	**56**
Schools' readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Pearson Correlation	.277(*)	.072
	Sig. (2-tailed)	.039	.600
	N	**56**	**56**

*** Correlation is significant at the 0.05 level (2-tailed).**

The results indicated in Table 7 reveal the fact that, schools' readiness to adopt e-Learning, based on the availability of sufficient electronic learning equipment, is positively, but, insignificantly influenced by the teachers belief that e-learning avails information which is not easily available in text books, while it is significantly influenced negatively by the belief that, the adoption of e-learning will enhance teachers' and learners' skills in ICT. This means that, schools with teachers who understand and value the benefits associated with e-Learning will be more ready to adopt e-learning, since teachers are the key implementers of the e-learning program, such benefits include access to extra information and enhancement of skills in ICT.

Schools, whose teachers neither understand nor, value the benefits of e-Learning, will have difficulties in adopting e-Learning in curriculum implementation. The results also indicate that schools' readiness to adopt e-Learning subject to the availability of relevant skills in handling e-Learning, correlated positively and significantly with the belief that, e-Learning avails information that is not easily available in text books but, insignificantly with the belief that the adoption of e-Learning will enhance teachers and learners skills in ICT.

It is evident, in most cases that teachers' attitude towards e-Learning will have a positive, influence on the readiness to adopt e-Learning. However, it is worth noting that in some instances, the teachers' attitude may negatively affect the school's readiness to adopt e-Learning. Further investigations indicate that, the significance of the relationship between teachers' attitude towards e-Learning, and readiness to adopt e-Learning was found to be inconsistent. It was found to be significant for certain indicators but insignificant for some. It is therefore difficult to state whether, the null hypothesis is rejected or not, at this level. It was therefore necessary to compute the one-way analysis of variance (ANOVA), in order to make judgment on the null hypothesis which stated that, teachers' attitude does not have a significant influence on the readiness to adopt e-Learning in secondary schools. The results of ANOVA are summarized in Tables 8 and 9, respectively.

Table 8. Influence of Teachers' Attitude on Readiness to Adopt e-Learning

INDICATORS	ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
School's readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Between Groups	2.862	3	.954	.570	.637
	Within Groups	86.977	52	1.673		
	Total	89.839	55			
School's readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Between Groups	20.218	3	6.739	4.792	.005
	Within Groups	73.139	52	1.407		
	Total	93.357	55			

The results in Table 8 indicate that, teachers' attitude (belief that e-Learning will improve teachers' and students' skills in ICT) towards e-learning has some influence on the schools' readiness to adopt e-Learning, as measured by the availability of relevant skills in handling e-learning, and the availability of sufficient electronic equipment. The influence is positive in both cases but, only in one case is it statistically significant. For example, it is evident from the results that, teachers' attitude causes insignificant difference on a school's level of readiness to adopt e-Learning when based on the availability of relevant skills in handling e-Learning where the results indicate, **$F(3, 52) = 0.570$, $P < 0.05$.** However, the teachers' attitude (belief that e-Learning will improve ICT skills among teachers and students), were found to have a significant influence on the school's readiness to adopt e-Learning when, measured by the availability of sufficient electronic learning equipment where the results of the ANOVA test indicate that **$F(3, 52) = 4.792$, $P > 0.05$**,This implies that, the differences in schools' readiness to adopt e-Learning, that is caused by teachers' belief that e-Learning will improve teachers' and students' skills in ICT (attitude towards e-learning), is statistically insignificant when measured by the availability of relevant skills in handling e-Learning but significant when measured by the availability of sufficient electronic equipment . This could be interpreted to mean that, when teachers are convinced that e-learning will benefit them by improving their skills in ICT, (which is currently a mandatory requirement in every aspect of modern life today) their first priority will be to equip their schools with the necessary electronic equipment, or, to pressurize school principals to equip their schools with e-Learning facilities.

Table 9. Influence of Teachers' Attitude on Readiness to Adopt e-Learning

INDICATORS	ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Schools' readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Between Groups	7.039	2	3.520	2.253	.115
	Within Groups	82.800	53	1.562		
	Total	89.839	55			
Schools' readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Between Groups	2.602	2	1.301	.760	.473
	Within Groups	90.756	53	1.712		
	Total	93.357	55			

The ANOVA results indicated in Table 9 reveal that teachers' belief that e-learning will make available information that is not easily available in text books (which is an indicator of positive attitude) causes significant difference on the availability of sufficient electronic learning equipment, which is an indicator of a schools' readiness to adopt e-Learning. The results were **F (2, 53) = .760, P>0.05,** meaning that teachers' attitude towards e-Learning will cause insignificant influence on the readiness to adopt e-Learning in secondary schools. The result of the influence of the teachers' belief that e-Learning will avail information that is not easily available in textbooks, on the availability of relevant skills in handling e-Learning was **F (2, 53) = 2.253, P>0.05,** indicating insignificant influence. Hence, we fail to reject the null hypothesis which stated that "teachers' attitude has no significant influence on readiness to adopt
e-Learning.

Students' Attitude towards the Adoption of e-Learning in Secondary Schools

To ascertain whether there is any relationship between students attitude and readiness to adopt e-Learning in secondary schools, the following hypothesis was tested:

Hypothesis H_{03} The Attitude of Secondary School Students towards e-Learning does not have a Significant Influence on the Readiness to Adopt e-Learning in Secondary Schools

Hypothesis H_{03} sought to establish the level of significance of attitude in determining the schools' readiness to adopt e-Learning. To establish this fact, two key attitude indicators (those with high factor loadings) namely: belief that computers are slow and time wasting: and preference of computer based learning to classroom face-to-face learning, were correlated with, the indicators of readiness to adopt e-Learning. The computations were done

using Statistical Package for Social Sciences (SPSS) software, and correlations which were significant were marked with **(*)** to indicate the significant levels of 0.05. The resulting correlations are indicated in Table 11.

Table 11. Correlation between Students' Attitude towards e-Learning and the Readiness to Adopt E-learning

INDICATORS	**ANOVA**	Belief that computers are slow and time wasting	Preference of computer based learning to classroom face- to- face learning
Schools' readiness to adopt e-learning subject to availability of relevant skills in handling e-learning	Pearson Correlation	-.161(*)	.083
	Sig. (2-tailed)	.005	.151
	N	300	300
Schools' readiness to adopt e-learning subject to availability of sufficient electronic learning equipment	Pearson Correlation	-.125(*)	.119(*)
	Sig. (2-tailed)	.030	.039
	N	300	300

*** Correlation is significant at the 0.05 level (2-tailed).**

The results indicated in Table 11 reveal the fact that, schools' readiness to adopt e-Leaning, based on the availability of relevant skills in handling e-Learning, was significantly negatively influenced by, the students' belief that computers are slow and time wasting. The correlation coefficient of **r** = **-0.161**, **P** = **0.05**, while it is insignificantly positively influenced by the preference of computer based learning to classroom face-to-face learning, with a correlation coefficient of **r** =**0.083**, **P** = **.151**. On the other hand, schools' readiness to adopt e-learning, when measured by the availability of sufficient electronic equipment, was significantly negatively influenced by the students' belief that computers are slow and time wasting and, at the same time, it was significantly positively influenced by the students' preference for computer based learning with correlation coefficient r = **-0.125**, P = **.030** and r = **0.119**, P = .030, respectively.

In both cases, the correlation was significant at **P** = **0.05**. The findings established that an attitude indicator that reflects the negative attitude had a significant negative effect on the readiness to adopt e-learning. In cases where students believed that computers are slow and hence likely to waste a lot of their time, this negative attitude, negatively affected the schools' readiness to adopt e-learning regardless of whether readiness was measured by the availability of sufficient e-learning equipment or by the availability of relevant skills in handling e-learning.

The attitude indicator (preference of computer-based learning to classroom face-to-face learning) that reflects positive attitude, had a positive influence on the readiness to adopt e-learning which is significant at **P = 0.05** when, measured by the availability of sufficient electronic learning equipment but, significant when measured by the availability of relevant skills in handling e-learning. It can therefore be concluded that, there is significant correlation between students' attitude towards e-learning and the schools' readiness to adopt e-learning.

Students are the major recipients or beneficiaries of e-learning and should embrace any shortcomings associated with e-learning; otherwise the process of adopting e-learning in schools will be faced with difficulties and resistance. Based on the findings of this study, the null hypothesis, which states that; the attitude of secondary school students towards e-learning has no significant influence on the readiness to adopt e-learning in secondary schools, was rejected. The findings provide evidence against the null hypothesis. However, it was important to carry out the ANOVA test so as to ascertain the degree of influence which the students' attitude exerted, on the readiness to adopt e-learning. The results of the ANOVA test are indicated in Table 12.

Table 12. Influence of Students' Attitude on the Readiness to Adopt e-Learning

INDICATORS	**ANOVA**	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Availability of relevant skills in handling e-learning	Between Groups	11.025	4	2.756	1.173	.323
	Within Groups	693.412	295	2.351		
	Total	704.437	299			
Availability of sufficient electronic learning equipment	Between Groups	13.377	4	3.344	1.551	.187
	Within Groups	635.969	295	2.156		
	Total	649.347	299			

The results indicated in Table 12 indicate that students' preference for computer-based learning as opposed to face-to-face classroom learning (positive attitude to e-Learning) has an influence on the readiness to adopt e-Learning when measured by both indicators, namely; the availability of relevant skills in handling e-Learning and the availability of sufficient electronic equipment. However, the influence is not statistically significant. The ANOVA results are **F (4,295) = 1.173, P>0.05** for the availability of relevant skills in handling e-learning and **F (4,295) = 1.551, P>0.05** for the availability of sufficient electronic learning equipment. To ascertain the extent to which attitude indicator influenced readiness to adopt e-Learning among the students, Eta statistics were carried out and summarized in Table 13.

Table 13. The Association between Students' Attitude and Readiness to Adopt E-learning

Measure of Association	R	R Squared	Eta	Eta Squared
Availability of sufficient electronic learning equipment * Preference of computer based learning to classroom face to face learning	.119	.014	.144	.021
Availability of relevant skills in handling e-learning * Preference of computer based learning to classroom face to face learning	.083	.007	.125	.016

The results of Eta statistics indicated in table 13 revealed that the level of association between students' preference for computer-based learning as opposed to classroom face-to-face learning and, readiness to adopt e-Learning in terms of availability of sufficient electronic learning equipment and availability of relevant skills in handling e-Learning was at $\eta^2 = 0.021$ and $\eta^2 = 0.016$ respectively**.** This means that, students attitude had an effect on the readiness to adopt e-Learning. However, the effect was small since only 2.1 and 1.6 percent of the variance, in the level of readiness to adopt e-Learning, in terms of the availability of sufficient electronic learning equipment, and the availability of relevant skills in handling e-Learning was accounted for by the students' preference for, computer-based learning as opposed to classroom face-to-face learning. Based on the findings discussed above, we fail to reject the null hypothesis which stated that: the attitude of secondary school students towards e-Learning does not have a significant influence on the readiness to adopt e-Learning in secondary schools. The ANOVA results for the second indicator of students' attitude towards e-Learning are indicated in Table 14

Table 14. Influence of Students' Attitude on Readiness to Adopt E-learning

INDICATORS	ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Influence of students' belief that computers are slow and time consuming on the availability of relevant skills in handling e-learning	Between Groups	21.788	4	5.447	2.354	.054
	Within Groups	682.649	295	2.314		
	Total	704.437	299			
Influence of students' belief that computers are slow and time consuming on the availability of sufficient electronic learning equipment	Between Groups	12.009	4	3.002	1.390	.238
	Within Groups	637.338	295	2.160		
	Total	649.347	299			

From the findings indicated in Table 14 it is evident that the students' belief on how fast computers work has an influence on the schools' readiness to adopt e-Learning based on both indicators of the readiness to adopt e-Learning. The ANOVA results on the availability

of relevant skills in handling e-learning is **F (4,295) = 2.354, P > 0.05,** indicating insignificant influence, while the results on the influence of students' belief that computers are slow and time consuming, on the availability of sufficient electronic learning equipment is **F (4, 295) = 1.390, P > 0.05** indicating an insignificant influence.

Eta statistics were computed to ascertain the extent to which the student's attitude, as measured by the belief that computers are slow and time wasting, influences the readiness to adopt e-Learning. The Eta results are summarized in Table 15.

Table 15. The Association between Students' Attitude and Readiness to Adopt e-Learning

Measure of Association	R	R Squared	Eta	Eta Squared
Availability of sufficient electronic learning equipment * Belief that computers are slow and time wasting	-.125	.016	.136	.018
Availability of relevant skills in handling e-learning * Belief that computers are slow and time wasting	-.161	.026	.176	.031

The results of Eta statistics indicated in Table 15 reveal that, the level of association between students' belief that computers are slow and time wasting, and the readiness to adopt e-Learning in terms of the availability of sufficient electronic learning equipment and the availability of relevant skills in handling e-learning was η^2**= 0.018** and η^2**= 0.031** respectively**.** This means that, students' attitude had an effect on the readiness to adopt e-Learning. However, the effect ranged between small and moderate. Only 1.8 and 3.1 percent of the variance in the level of readiness to adopt e-Learning, in terms of availability of sufficient electronic learning equipment, and availability of relevant skills in handling e-Learning respectively, was accounted for, by students' belief that computers are slow and time wasting. Based on the findings discussed above, we fail to reject the null hypothesis which stated that: the attitude of secondary school students towards e-Learning does not have a significant influence on the readiness to adopt e-Learning in Secondary schools.

Discussion of the findings

This study aimed at establishing the extent to which attitude of principals, teachers and students towards the adoption of e-learning influence the readiness to adopt e-Learning in secondary schools. The study established that Principals' attitude towards e-Learning does not have significant influence on the secondary schools' readiness to adopt e-Learning.

It was also discovered through the findings of this study that the attitude of Teachers' towards the adoption of e-Learning does not have a significant influence on readiness to adopt e-Learning in secondary schools. The study further established that Students' attitude

towards the adoption of e-Learning had an insignificant influence on the readiness to adopt e-Learning in secondary schools.

This study provides additional information to the findings of previous studies on the influence of attitude on readiness to adopt e-learning in the education. For example Keiyoro's (2010) study explained the role of attitude in the use of ICT in teaching and learning of science subjects in secondary schools, while Gakuu (2006) studied factors and attitudes that influence Lecturers' readiness to adopt distance education and use of ICT, in teaching at the University of Nairobi. These studies did not establish the statistical influence of this influence. This study established that the attitude held by Principals, Teachers and Students towards the adoption of e-learning does not have significant influence on readiness to adopt e-Learning in secondary schools. From the foregoing discussion, the findings highlight key contributions of the current study to the existing body of knowledge.

Conclusion

Based on the findings of this study, it was concluded that the attitude held by Principals, Teachers and Students towards e-Learning has no significant influence on readiness to adopt e-Learning in Secondary Schools in Kitui District.

Recommendations of the Study

There is need to cultivate a positive attitude among Principals, Teachers and Students by creating awareness on the benefits of e-Learning and training them especially on the application of e-leaning. In fact, the issue of creating awareness on e-Learning, calls for combined effort from the government, NGOs, other private organizations and individual educators interested in promotion of e-Learning in schools. This will enhance successful implementation of e-Learning in Secondary schools in Kenya.

Suggestions Further Research

1. The study focuses on Secondary schools but the Government plans to introduce e-Learning at all levels in education . There is need therefore to conduct studies on the level of e-readiness in Primary schools, Middle level colleges and even Universities.

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