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Influence of Information Communication Technology use Policies on ICT use and its Motivation, and Student Centred Learning among Public Secondary School Students in Bungoma County, Kenya

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Abstract
The objective of this study was to establish the extent to which Information and Communication Technology (ICT) policies moderate between ICT use motivation and Student Centred Learning (SCL) skills among public secondary school students in Bungoma County, Kenya. The ICT policy of 2006 and 2013 clearly stipulated that ICT should be embraced in the education system to enhance the 21st century skills where learners should participate and have global awareness. The motivation aspect of ICT use was emphasized in the policies. The government of Kenya together with non-governmental agencies partnered to develop capacity building in terms infrastructure and manpower across the country. The installation of electricity in nearly all schools by the government of Kenya is an indication of government's effort and commitment towards this goal. Consequently schools have moved fast to install ICT in schools in response to the government policy requirements. However various gaps have emerged which need to be addressed such as accessibility of ICT among learners, types of technologies to be used, manpower and physical infrastructure. The target population of the study was 71 respondents in 71 schools and sample size was 38 respondents selected from 19 schools. The tools used for data collection were questionnaires and interview guide. Descriptive statistics such as frequencies, percentages and means were employed while inferential statistics that is correlation and regression analyses were used to measure the strength and direction of the relationship. The study's findings revealed that ICT policies had no significant moderating influence on ICT use and its motivation and SCL skills. The study's recommendations were: ICT policies should embrace digital technologies, school managers to improve on ICT capacity building motivation through seminars, workshops, expansion of facilities and training of the personnel. The findings of this study may be used to guide the school managers on the need to improve on pro ICT use and motivation among all stakeholders.

Keywords: Information Communication, Technology, Motivation, Student Centred Learning, ICT policies Motivation

Introduction
The purpose of this study was to evaluate the extent to which ICT policies had moderated ICT use and its motivation on Student Centred Learning (SCL) skills in public secondary schools in Bungoma County, Kenya. The study focused on available ICT policies in the educational sector especially in public secondary schools in Bungoma County, kenya. Participants included teachers, technicians and school managers. The study adopted mixed methods research design. Data was collected through questionnaires and interview guide. Results revealed that ICT policies moderating influence on ICT use and its motivation and SCL was insignificant. The study recommended for training of teachers, holding of regular workshops and seminars, adoption of pro ICT online environments and high student enrolment in the course through marketing of the subject by the school administration.

II.Background to the study
According to an American Press Report (2012), SCL will only succeed with school culture shift throughout the education system, which includes maximizing the potential of digital

learning to meet students' needs. The press release had the following recommendations: Develop a deep understanding of what is meant to have SCL environment and identify potential changes from the current models, create opportunities to discuss, provide school district leaders with professional learning to understand how SCL can grow strong, empower schools to develop collaborative working environment and support for educators and staff, integrate technology and digital learning into the strategic planning culture to support SCL environment (Harshaw, 2015). In the USA for example, use of mobile and other social technologies are clearly articulated in the National Education Technology Plan ((Hobbs, 2010). In the developing countries however research shows that poor ICT policies and their implementation often lead to the stalling of ICT projects and programs (Mwanda, 2014; US Press release, 2012; Yilmaz, 2011 & Alam & Islam, 2008). For instance the ICT policy of 2006 and 2013 in Kenya put emphasis on adoption and implementation of ICT use in secondary schools without assessing the adequacy of manpower on the ground. Piloting has been done in several schools indicating positive outcomes; however the implementation of the same has failed. The introduction of tablets for junior learners in Kenya was quickly implemented as government policy and which has tremendously failed as it does not exist today, yet billions of taxpayers' money was used leading to increased poverty (Waema 2014). This is a clear indication of poor ICT policies in some African countries such as Kenya and Tanzania which cannot be relied upon in the education system. Sound ICT policies such as creation of online environment should therefore be formulated, adopted and implemented to motivate learners and enhance SCL skills (Weissman, 2017 & Waters 2015).

In Asian countries such as China, South Korea and India tremendous progress has been made in the ICT sector with regard to education while in countries such as Philippines, Bangladesh and Mongolia, mobile technologies including cell phones are considered as highly promising educational tool that motivate learners to access SCL skills (Librero, Ramos, Ronga, Trinona & Lambert, 2007). ICT use for learning in the developing countries is slow, with so many challenges especially in Africa. Many African nations including Kenya and Tanzania are working hard to go digital in this dispensation without having considered how best and which type of technology should be used in schools to enhance learner motivation so as to attain the digital skills to enhance SCL skills (William 2016). Most schools do not accept mobile technology use among students. These are serious ICT policy issues that have undermined technology use for learning. Nevertheless there is poor rural technology coverage in most African schools (Alam & Islam, 2008). Africa is therefore characterized by too many ICT Pilots, most of which have not materialized, having hurriedly been implemented and hence have derailed learner motivation in technology use and SCL skills.

Educational policy makers should therefore come up with well thought-out policies on ICT use in schools which will enable learners access cheap technologies which are easy to implement and readily available to motivate all students and enable them to acquire the SCL skills. The technologies should also be sustainable in schools. Of the many forms of ICT, mobile technologies are thought for several reasons to be particularly suitable tools for advancing SCL skills practice in the developing world (Alam & Islam, 2008). Mobile devices are the most prevalent form of ICT in the developing world and its ownership is increasingly common among poor populations of society (Samrajiva & Zainudeen, 2008).

The policies should incorporate responsible use of mobile and social technologies (Tsinakos 2013). Cyber bullying and texting prevention guidelines should be incorporated into the student code of conduct. In the USA, the educational plan describes new models of teaching and learning in which students and teachers are virtually connected to one another. It is unfortunate for Africa and other developing countries that issues of mobile technologies are not addressed and mobiles have been banned in schools. There is no clear policy on how to tap the great educative potential of mobile technologies. Mobiles are confirmed to be suitable tool for advancing SCL skills practice outcomes in the developing countries because they are the most prevalent and affordable form of ICT (Alam & Islam, 2008).

According to Mingaine(2013) school leaderships constitute a critical component of ICT adoption and implementation. It the school managers who develop practical school based ICT policies which attract community support. Administrators who give priority to ICT projects and programs through funding have knowledge of ICT use, positive attitude and motivation for enhancing good policies.

III Statement to the Problem

The status of ICT use and its motivation in Kenyan secondary schools is a product of the existing policies. In Africa and most developing countries ICT policies are poor and which have resulted to poor implementation of ICT projects. The level of policies is still low thus undermining learner utilization of ICT for learning (Alam & Islam, 2008). In Bungoma County Kenya, studies have revealed that most schools have immensely failed to benefit from technology use especially the enhancement of SCL due to poor policies (Shihundu, 2014).

I V Objective of the study

The specific objective of the study was to establish the extent to which ICT policies moderated on ICT use and enhancement of SCL skills among public secondary school students in Bungoma County.

1.0 Hypothesis of the study

HO: ICT policies have no significant moderating influence on ICT use motivation and enhancement of SCL skills among public secondary school students in Bungoma County,Kenya.

2.0 Methodology

This study adopted both qualitative and quantitative research methods where descriptive survey and inferential research designs were used to increase the validity of the findings and for the purposes of achieving optimal results (Saunders, Lewis & Thornhill, 2009). Purposive and simple random sampling techniques were employed. Data was collected through questionnaires and interview guide and analyzed through SPSS.

3.0 Target Population

The target population of this study was all the 71 ICT teachers and 71 school managers in all the 71 public secondary schools that offer computer studies in Bungoma County. The sample size was 38 respondents.

V Results and Discussions

4.0. Moderating Influence of ICT Policies between ICT Use and SCL skills.

Teachers were asked to respond `YES' or `NO' to whether there was a moderating influence on the relationships between the ICT use among learners/teachers and the SCL achievement. The results are presented in table 4.1

Table 4.1 ICT Teachers' Responses on the Moderating Influence of Policies between ICT Use and SCL skills

		Frequency	Percent
Valid	YES	14	87.5
	NO	2	12.5
	Total	16	100.0

Source: survey data (2018)

Table 4.1 shows that 14(87.5%) of the respondents agreed that ICT policies had a moderating influence between ICT use and the achievement of SCL skills while 2(12.5%) responded `NO'. The majority (87.5%) therefore confirmed presence of the moderating influence of ICT policies on ICT use and SCL.

5.0 ICT Teachers' responses on the Extent to which ICT Policies Moderated between ICT Use and SCL skills

The study sought to establish the extent to which ICT policies had moderated on ICT use and the achievement of SCL skills. The results are presented in table 4.2

Table 4.2 ICT Teachers' responses on Extent to which ICT Policies Moderated between ICT Use and SCL skills.

		Frequency	Percent	Mean
Valid	Very Lowly	3	18.8	0.188
	Lowly	8	50.0	1.0
	Moderate	3	18.8	0.564
	Highly	2	12.5	0.5
	Total	16	100.0	2.232
	Aggregate			0.558

Source: survey data (2018)

Table 4.2 indicates the extent to which ICT policies had moderated the relationship between ICT use and SCL, as follows: very low extent 3(18.8 %), low extent 8(50 %), moderate extent 3 (18.8 %) and highly 2(12.5 %). Most of the respondents therefore indicated low extent (50 %). Therefore over 68 % of the respondents recorded low extent of the moderating influence of the policies on ICT use and SCL. This implies that to a low extent ICT use policies moderated between ICT use and SCL at a mean proportion of (1.0). The overall mean for the moderation was (2.232) and the aggregate mean was 0.558 which was very low extent.

6.0 ICT Teachers' Questionnaire Responses on Statements on ICT Use Policies

The study sought to establish the level of agreement or disagreement to specific statements on likert statements. The results are presented in table 4.3

Table 4.3: ICT Teachers' Questionnaire Responses on Statements on ICT Use Policies

Statement	Strongly Agree										
	F	%	F	%	F	%	F	%	F	%	
ICT use policies support use of digital technologies	1	6.2					7	43.8	8	50	1.686
ICT use regulations are not available in school	6	37.5	10	62.5							4.375
ICT use timetable limits full learner exposure to technology use	5	31.2	6	37.5		1	6.2				3.246
Aggregate											**3.102**

Source: Field survey (2018)

Table 4.3 shows teachers' responses on ICT policies. ICT teachers' responses to the statement ` ICT use policies support use of digital technologies' were: strongly agree 1 (6.2%), disagree 1(6.2%) and strongly disagree 8 (50 %). The majority of the respondents 50% strongly disagreed constituting (mean proportion was 1.686), implying that to a low extent respondents agreed while over 93% of the respondents disagreed and strongly disagreed that ICT use policies supported use of digital technologies. ICT policies therefore failed to support the transformation of the learning environment from the traditional methods to the SCL environment.

ICT teachers' responses on the statement, `Good uses of ICT regulations are not available in school' were as follows: strongly agree 6 (37.5%) and agree 10(62.5 %). All the respondents therefore agreed and strongly agreed to the statement. Responses on the statement, `ICT use timetable limits full learner exposure to technology use ` were as follows: strongly agree 5 (31.2 %), agree 6 (37.5 %), undecided 1(6.2%). Majority of the respondents (over 67 %) agreed and disagreed to the statement implying that there were poor ICT timetables that denied learners ample time to interact with technology. The aggregate mean of the statements above was 3.102 (moderate) implying to a moderate extent good ICT regulation timetables were available.

7.0 School Managers' Responses on ICT Policies and Enhancement of SCL Skills.

Qualitative data on ICT policies was obtained through conducting interviews with the school managers. The results revealed that majority of the school managers (70 %) held the view that ICT policies did not adequately motivate learners and lead to SCL. Some schools lacked policies while others had poor policies.

8.0 Regression of the Moderating influence of ICT policies on the relationship between ICT use and SCL

The study also sought to determine the moderating influence of ICT Policies on the relationship between ICT use and SCL skills. The study hypothesis was stated:

Ho: ICT Policies have no significant moderating influence on the relationship between ICT use and SCL skills among public secondary school students in Bungoma County, Kenya.

To test hypothesis Ho of the study, stepwise linear regressions were conducted for each of the ICT predictor variables, the moderator and SCL skills to establish the adjusted R^2 after the introduction of the moderator in the regression equation. Table 4.4 summarizes the results.

Table 4.4. Regression of moderation effects on ICT policies on ICT use and SCL.

Regression results	Coefficients	Moderator	Coefficient	F	Adjusted R^2	P Value
ICT Infrastructural Motivation	-.320	-.145	-.320	.716	.042	.508
ICT Accessibility motivation	.452	-.191	-.423	2.467	.173	.127
ICT methodological motivation	.242	-.164	-.363	1.102	.014	.364
ICT Capacity building motivation	-.073	-.146	-.324	.697	.045	.517
Constant						.000

Source: survey data (2018)

Research findings in Table 4.4 indicate adjusted R-squared value of predictor variables as follows: ICT infrastructural motivation .042, ICT accessibility motivation .173, ICT methodological .014 and ICT capacity building motivation .045. This means that the model explains 4.2 % variation in SCL for ICT infrastructural motivation, 17.3 % for ICT accessibility motivation, 1.4 % for ICT methodological motivation and 4.5 % for ICT capacity building motivation, the p values were .508, .127, .364 and .517 respectively. All the p values were greater than 0.05. The F statistic for ICT infrastructural motivation was F (2, 12) = .716, P = 0.508 where (P > 0.05), ICT accessibility motivation was F (2, 12) = 2.467, P = 1.27 where (P > 0.05), ICT methodological motivation F (2, 12) = 1.102, P=.364 where (P > 0.05),) and ICT Capacity building F (2, 12) = 1.102, P=.517 where (P > 0.05). The P-values for all the predictor variables and the moderator variable were greater than 0.05 (P > 0.05) hence ICT use and policies did not have a significant moderating influence on SCL.

The study findings on availability of ICT policies and extent of use was supported by authorities, however policies were faulty in the sense that they did not create online environment for learners and their teachers to exploit their self-efficacy in ICT use. ICT Policies failed to address use of internet and diversification of ICT tools to meet the needs of the learner and address the issue of digital technologies use in the 21st century for achievement of vision 2030.

The findings of this study on ICT policies agree with the findings of Mwanda, (2014); US Press release (2012) & Alam & Islam (2008), whose studies show that ICT policies were present, however their implementation often led to the stalling of ICT projects and programs in most developing nations. Sound ICT policies should therefore be formulated to motivate learners and enhance SCL skills in the developing nations.

VI Conclusion

The objective of the study sought to establish the moderating effect of ICT policies on the relationship between ICT use and SCL among students in public secondary schools in Bungoma County. Descriptive statistics indicate a very low extent. Regarding the null hypothesis H_O of the study, there was no significant moderating influence of the ICT polices on SCL. All the p values for the predictor variables with the moderator were greater than 0.05. The study concludes that ICT policies among students in public secondary schools in Bungoma County had no significant moderation influence on SCL.

VII. Recommendations

Regarding the objective of the study, capacity building motivation was found to be very low in most schools. This study recommends that there should be more training of personel, increase in student enrolment through marketing of the subject, teacher higher training such degree level, regular workshops and seminars in ICT use. Capacity building motivation should be expanded and be implemented by the Ministry of education at policy level. Capacity building has a higher motivational potential to attract learners' curiosity.

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