INFLUENCE OF PRINCIPALS' PERFORMANCE IN TRAINING TEACHERS IN INFORMATION COMMUNICATION TECHNOLOGY ON USAGE OF ICT FOR TEACHING AND LEARNING IN SECONDARY SCHOOLS

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ABSTRACT

The focus of this study was to investigate how principals' performance of leadership roles influenced usage of ICT for teaching and learning in secondary schools. The objective of the study was to analyze the influence that performance of principals in training teachers in ICT has on usage of ICT for teaching and learning in schools. Concurrent triangulation within mixed methods research design was used. Stratified random sampling was used to draw 99 principals from 132 distributed in seven sub-counties. Saturated sampling technique was used to sample 28 principals, 28 deputy principals and 35 Heads of Department (HODs) for interviews. Data were gathered using questionnaires for principals and interview schedules for principals, deputy principals and HODs. Questionnaire reliability was ascertained at (r) = 0.739 using the split-half technique. Results revealed that performance of principals in training teachers in ICT (α=.338, p>.05) statistically significantly influenced usage of ICT for teaching and learning. It was concluded that performance of principals in training teachers in ICT had an impact on usage of ICT for teaching and learning in schools in Kisumu County. It was recommended that principals should complement the Government's efforts by training teachers in ICT usage.

Key Words: Influencing, Information Communication Technology, Performance, Teaching Learning, Training

1.0 INTRODUCTION
1.1 Background to the Study
The emergence of ICT as a tool that can be used to support teaching and learning has necessitated the need to have principals play an active leadership role towards facilitating a teaching and learning environment in which technology is infused. For instance, Ottestad (2013) observed that school leadership for ICT is strongly associated with the pedagogical use of ICT in Norwegian schools. This means that heads of schools have to play a big role in creating an enabling environment within institutions for ICT usage in the classroom to be adopted.

In order to enable schools to embrace ICT usage for teaching and learning in school, the principal has to play an active role in terms of offering leadership towards the desired change. Sakulsumpuapol (2010) indicated that the most important significant factors in school change were dependent on the principal's leadership and how he or she exhibited the role. The Government promulgated the National ICT Policy (Republic of Kenya [RoK, 2016] which elaborated how ICT was to be integrated in education at all levels of learning in line with the Vision 2030 (RoK, 2007) so as to improve quality of education. To help achieve this goal, the Government began sensitization and training of principals in ICT in the year 2010.

Currently, it is also a requirement by the Teachers Service Commission (TSC) that principals promote digital learning process and ICT integration in schools in line with TSC Performance Contracts signed by all principals in Kenya annually (RoK, 2018). Therefore, it is worth noting that principals shoulder a huge responsibility in terms of leading the process of ICT integration in teaching and learning in schools. This task can be executed effectively if principals performed well in terms of demonstrating good leadership by guiding the technology integration process. This can be done, for instance, by facilitating training of teachers in ICT usage to empower them for competent and skillful use of ICT in the classroom. In this regard, Kirscey (2012) reported that ICT competence was important to the integration process. Also worth taking note of is the fact that Li and Walsh (2011) identified teacher training by school leadership as issues promoting integration of ICT in teaching and learning. Also worth taking note of is the fact that studies suggested that teacher ICT training was important in enabling adoption of ICT by schools (Li and Walsh 2011; Le and Vo 2014).

ICT training for teachers affected adoption of technology in selected Lagos State secondary schools in Nigeria (Makinde, Makinde & Shorunke, 2013). Moreover, Chege (2014) argued that training influenced teachers' readiness to integrate ICT in teaching and learning. This implies that principals should focus on training of teachers so as to enhance integration of ICT in teaching and learning in schools. However, according to data at Kisumu County Education Office, usage of ICT for teaching and learning in public secondary schools was generally below average since only 32 schools out of 224 representing 14.29% reported average ICT usage while 192 schools or 85.71% had below average usage (RoK, 2016). Consequently, the purpose of the study was to investigate performance

of principals in influencing usage of ICT for teaching and learning in secondary schools in Kisumu County, Kenya.

1.2 Statement of the Problem

The goal of the Government of Kenya as articulated by the National ICT Policy (RoK, 2016) through objective 16.2 (a) and section 4.2.6 of the Vision 2030 (RoK, 2007) is to integrate ICT for teaching and learning with a view to improving the quality of education. Nevertheless, ICT integration remains low as reflected by Kisumu County Education Office data showing that 32 schools (14.29%) had an average rating while 192 (85.71%) rated below average on ICT integration (RoK, 2016).

The Government in 2010/2011under the ESP commenced sensitization and training of 1021 principals. ICT champions were also sensitized, trained and posted in 210 sub-counties to ensure continuous ICT training and awareness creation for principals and teachers. However, the literature reviewed by the researcher provides scanty information on performance of principals in influencing usage of ICT for teaching and learning in secondary schools in Kisumu County; hence the need for this study in order to fill the gap in knowledge.

1.3 Objective of the Study

The objective of this study was to analyze the performance of principals in influencing usage of ICT for teaching and learning in secondary schools in Kisumu County, Kenya.
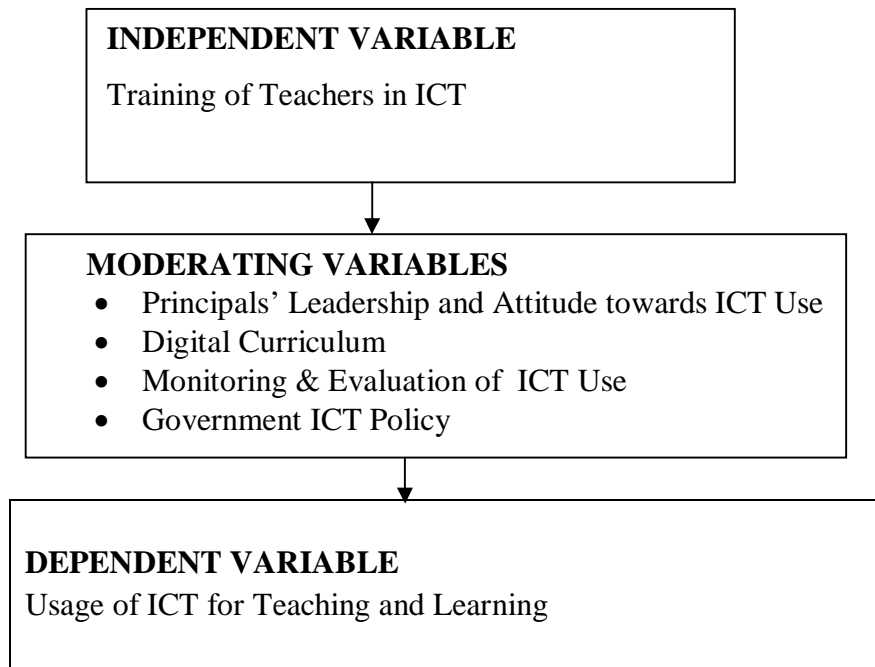
1.4 Research Hypothesis

The study tested the following null hypothesis:

H0: There is no statistically significant influence of performance of principals in training teachers in ICT on usage of ICT for teaching and learning in schools in Kisumu County.

1.5 Conceptual Framework

The conceptual framework for this study is grounded on the Learning Organization Theory by Senge (1990) as cited in Smith (2001). The proponent of the theory postulates that in the wake of change, organizations must learn to adapt to that change for them to survive. Consequently, for schools to adapt to this kind of change necessitated by the need to integrate ICT in the classroom, performance of principals as change leaders is a prerequisite. Senge (1990) in Smith (2001) proposes guiding ideas such as a shared vision, personal mastery and team learning so as to effectively lead organizations through change. These guiding ideas, as noted by Park (2008), imply that school vision and goals are planned through a process of shared commitment, teachers expand personal growth and capacity with a desire to grow professionally, and also at the school various group or team activities are encouraged to address schooling issues. Figure 1 illustrates the conceptualized relationship between the variables in this study.

INDEPENDENT VARIABLE

Training of Teachers in ICT

↓

MODERATING VARIABLES
- Principals' Leadership and Attitude towards ICT Use
- Digital Curriculum
- Monitoring & Evaluation of ICT Use
- Government ICT Policy

↓

DEPENDENT VARIABLE
Usage of ICT for Teaching and Learning

Figure 1: Conceptual Framework Developed from Leadership Practices for Embedding ICT into Schools (Sharija & Watters, 2012)

Based on the results of the initial literature review, a conceptual framework for this study was developed (see Figure 1). The independent variable (IV) in this study is Training of Teachers in ICT which is influenced by the performance qualities of principals.

2.0 RESEARCH METHODOLOGY
2.1 Research Design
The study adopted a concurrent triangulation within mixed methods research design to collect both quantitative and qualitative data from principals' questionnaires and interviews with principals, deputy principals and HODs (Cresswell, 2014).

2.2 Study Population and Sample
The study population had a total of 804 respondents who comprised 132 principals, 132 deputy principals and 540 HODs formed the population of the study. A sample of 162 participants was selected through disproportionate stratified sampling as primary respondents.

2.3 Data collection instruments

The study used both questionnaire and interview schedule for purposes of data collection. The questionnaire was specifically administered on principals; whereas, interviews were conducted with principals, deputy principals and Heads of Department. The data collections instruments were tested for validity and reliability through a pre-testing procedure from a portion of the research population. Using the split-half reliability technique, the measure yielded a coefficient (r)= .739 (Kaplan & Saccuzzo, 2001).

3.0 FINDINGS AND DISCUSSION

3.1: Influence of Training Teachers in ICT on Usage of ICT for Teaching and Learning

The objective of the study was to investigate the influence of training teachers in ICT by principals on the usage of ICT for teaching and learning in secondary schools in Kisumu County.

3.1.1 Views of the Principals on Training of Teachers in ICT Usage in Secondary Schools The principals' views were computed in percentage frequencies, (see Table 1.1).

Table 3.1: Principals' Views on Training Teachers in ICT Usage

Statement	SD	D	MA	A	SA	Mean	SD
Principal sponsors teachers for training workshops in ICT	15 (15.8%)	30 (31.6%)	28 (29.5%)	15 (15.8%)	7 (7.4%)	2.67	1.14
Principal brings experts to school to train teachers in ICT.	50 (52.6%)	22 (23.2%)	7 (7.4%)	16 (16.8%)	0 (0.0%)	1.88	1.12
Principal encourages teachers to attend training in ICT.	0 (0.0%)	7 (7.4%)	37 (38.9%)	51 (53.7%)	0 (0.0%)	3.46	0.63
Principal serves as a role model by attending ICT training.	17 (17.9%)	33 (34.7%)	13 (13.7%)	24 (25.3%)	8 (8.4%)	2.72	1.25
Mean Average Training of Teachers in ICT Use						**2.68**	**1.04**

Source: Survey Data (2017)

Key: 1-Strongly Disagree, 2-Disagree, 3-Moderately Agree, 4-Agree and 5-Strongly Agree, SD-Standard Deviation

From Table 3.1, it is evident that principals' involvement in sponsoring training of teachers in ICT usage was slightly above average (average score =2.68; standard deviation = .92). This influenced usage of ICT for teaching and learning, as perceived by many of the principals who took part in the survey. For example, the item 'encouragement of teachers to train in ICT usage' received the highest rating of 2.68 (SD=0.92), with more than a half 51 (53.7%) of the principals agreeing that

they encouraged their teachers to train in ICT use as a way of influencing usage of ICT for teaching and learning positively influenced the whole process.

It emerged that some principals served as role models by attending ICT training for teachers. This was reflected by a mean average response rate on training of teachers of 2.72 (standard deviation =1.25), with about a third 32 (33.7%) of the principals who took part in the survey indicating that they sometimes attended ICT training to serve as role models to their teachers. This is believed to have positively influenced the teachers. Data from the open-ended items in principals' questionnaires showed that only 36 (37.9%) served as role models to their teachers by attending training workshops in ICT.

On this statement a principal remarked in the open-ended questionnaire, a principal said, "I have done it averagely; I have just attended on a few occasions." Thus, indeed this is an indication of an average performance since the principal revealed that she did not attend the ICT workshops regularly hence not a very good role model to teachers. According to interview results 9 (32.1%) principals, 10 (35.7%) deputy principals and 15 (42.9%) HODs supported the finding that principals served as role models by attending ICT training workshops. Regarding this, a principal coded as 09 remarked:

> *"I have personally involved myself in attending some ICT training workshops to a small extent although I appreciate the fact that technology use for teaching and learning is a good development not just here in Kenya but globally. Consequently, I believe I have not been a good role model to my teachers that much."*

The data from interview with participant 09 above showed that the principal had attended just some ICT training workshops. This in an average performance by the principal since his staff could look up to him for inspiration. Another principal coded as 10 during interview stated as follows:

> *"Sometimes, whenever I find time, I do attend ICT training organized by the Government, especially the Ministry of Education through the ICT champions initiative at the sub-county level. I have also attended KEMI in-service courses in ICT during school holidays."*

It can therefore be said that the principal exhibited a good example to teachers and had performed above average. The findings of the study showed that only a handful of principals in secondary schools in Kisumu County sponsored teachers for training workshops in ICT or brought experts to train teachers in their schools on ICT usage. This finding was confirmed by 45 (47.4%) of the principals as respondents who indicated that they hardly sponsored teachers to attend training workshops in ICT, with only 7 (7.4%) of the principals saying that they always sponsored their teachers to attend such workshops while only 15 (15.8%) agreed that they sponsored teachers' training in ICT use for teaching and learning. Regarding this item, a principal in the open-ended

questionnaire item responded, "I sponsor teachers to attend such workshops only when such opportunities arise and depending on availability of resources." This statement shows the principal made some attempt to sponsor teachers' training workshops in ICT. Data from open-ended items from principals' questionnaires revealed that 52 (56.86%) of the principals were of the view that their sponsorship of teachers for training in ICT was below average. This could have been attributed to financial challenges that most of the schools went through.

In this regard, principal 11 responded as follows:

> *"My performance in sponsoring our teachers for some of the training seminars   or workshops on ICT usage for teaching and learning is below average. This is because this term, for instance, I have sponsored only two teachers for a two-day training workshop at the county level which brought together teachers from a number of the sub-counties."*

The principal indicated that he had only sponsored two teachers for ICT training. This is an indication of a below average performance. This means that he performed below average.
On the same vein, at a mean response rate of 1.88 (SD = 1.12), only 16 (16.8%) of the principals who took part in the study said they sometimes bring experts to school to train their teachers in ICT usage.

1.1.2 Relationship between Facilitation of Training of Teachers in ICT and Usage of ICT for Teaching and Learning

Correlation between training of teachers in ICT and usage of ICT for teaching and learning was done in order to test the null hypothesis below and results were as presented in Table 1.2 below.

H_0: *There is no statistically significant influence of principals' facilitation of teachers' training in ICT on the usage of ICT for teaching and learning in secondary schools in Kisumu County.*

Table 3.2: Correlations between Principals' Facilitation of Training of Teachers in ICT and Usage of ICT for Teaching and Learning

		Facilitation of Training of Teachers in ICT	Usage of ICT for Teaching and Learning
Facilitation of Training of Teachers in ICT	Pearson Correlation	1	.506[**]
	Sig. (2-tailed)		.000
	N	95	95
Usage of ICT for Teaching and Learning	Pearson Correlation	.506[**]	1
	Sig. (2-tailed)	.000	
	N	95	95

**. Correlation is significant at the 0.01 level (2-tailed) Source: (SPSS Output, 2017)

Table 3.2 indicates that there was a statistically significant positive (r=.506, n= 95, p<.05) relationship between principals' facilitation of teachers in ICT training and usage of ICT for teaching and learning. Therefore, the null hypothesis was rejected and it was concluded that principals' facilitation of teachers' ICT training is significantly correlated to the usage of ICT for teaching and learning in secondary schools in Kisumu County, Kenya.

3.1.3 Regression Analysis
Table 3.3: Regression Analysis Model Summary Output

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.521[a]	.271	.247	.73201	1.518

a. Predictors: (Constant), Facilitation of Training of Teachers in ICT, Development of School ICT Policy, Providing ICT Equipment & Maintenance of ICT Equipment
b. Dependent Variable: Usage of ICT for Teaching and Learning

From the model summary, the multiple correlation coefficient R =.521 indicates a good level of prediction of usage of ICT for teaching and learning by the model. Equally, the value of Adjusted R Square (.247) indicates that the model explains 24.7 percentage of the variance in the influence performance of principals has on usage of ICT for teaching and learning. However, to assess the statistical significance of the result it was necessary to look at the ANOVA whose results shown in Table 3.4.

Table 3.4: Principals' Performance and Usage of ICT for Teaching and Learning

Model		Sum of Squares	DF	Mean Square	F	Sig.
	Regression	18.656	4	4.664	8.697	.000[b]
1	Residual	48.262	90	.536		
	Total	66.918	94			

a. Dependent Variable: Usage of ICT for Teaching and Learning
b. Predictors: (Constant), Provision of ICT Equipment, Development of School ICT Policy, Maintenance of ICT Equipment, Facilitation of Training of Teachers in ICT

The ANOVA was used to test the null hypothesis that multiple R in the population equals 0. Table 1.4 indicates that the model reached statistical significance [F (4, 90) =8.697, R^2=.247, sig. <.05], implying that the model was significant and adequate enough to explain the variance in usage of ICT for teaching and learning in secondary schools in Kisumu County.

Table 3.5: Coefficient Output: Influence of Performance of Principals on Usage of ICT for Teaching and Learning

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.138	.424		2.686	.009		
	Maintenance of ICT Equipment	.265	.174	.287	1.522	.031	.225	4.452
	Development of School ICT Policy	.019	.134	.024	.144	.086	.294	3.404
	Facilitation of Training of Teachers in ICT	.309	.199	.338	1.554	.024	.170	5.893
	Provision of ICT Equipment	.169	.175	.134	.965	.037	.414	2.418

a. Dependent Variable: Usage of ICT for Teaching and Learning

Results in Table 3.5 showed that facilitation of teachers' training in ICT had the largest beta coefficient of .338 (p<.05) implying that it made the strongest unique contribution to explaining the dependent variable. Therefore, a one standard deviation increase in facilitation of training of teachers in ICT leads to a .338 standard deviation increase in predicted usage of ICT for teaching and learning with the other variables held constant.

4.0 CONCLUSION AND RECOMMENDATION

It was concluded that there was a statistically significant influence of principals' performance in training teachers in ICT on usage of ICT for teaching and learning in secondary schools in Kisumu County, Kenya.

Based on the result of the study, it was recommended that principals should complement the Government's efforts by facilitating teachers' training in ICT usage for teaching and learning.

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