Teacher Training and Integration of Information Communication Technology in Teaching and Learning in Public Primary Schools, Kenya

[1]Mandila Ben Shikomera, [2]Janet K. Mulwa & [3]Jonathan Muema Mwania

[1]Department of Languages, Kitui Teachers Training College, Kenya

[2]Department of Educational Administration and Planning, South Eastern Kenya University, Kenya

[3]Department of Educational Psychology, South Eastern Kenya University, Kenya

DOI: https://dx.doi.org/10.47772/IJRISS.2023.7926

Received: 13 July 2023; Revised: 19 August 2023; Accepted: 22 July 2023; Published: 21 September2023

ABSTRACT

The purpose of the study was to investigate the influence of teacher training in information communication technology on integration of information communication technology in teaching and learning in public primary schools in Kakamega County in Kenya. The study objectives sought to determine the level of teachers' training in information communication technology for integration of information communication technology in teaching and learning; ascertain the influence of teachers' academic qualification in information communication technology on integration of information communication technology in teaching and learning and to establish the influence of teachers attendance of in service course in information communication technology on integration of information communication technology in teaching and learning in public primary schools in Kakamega County, Kenya. Technological Pedagogical Content Knowledge theory was used for the study. A descriptive survey research design was used for the investigation. The sample size was determined using the census sampling, proportionate sampling, simple random sampling, and purposive sampling techniques. The sample size included 356 public primary school teachers, 189 public primary school head teachers, and 1 County Director of Education. The study used questionnaires and interview schedules to collect responses from 546 participants. Tables and charts were used to present the data. The results were analyzed both quantitatively and qualitatively. The Chi-square (x^2) test was used to assess the degree of correlation between teachers' use of information and communication technology and teaching and learning in public primary schools. Cronbach alpha (0.05) was the criterion for significance. This study was significant since it increased our understanding and aided in the development of future ICT integration strategies for teaching in the classroom. The study revealed that the majority of public primary school teachers lacked Information Communication Technology training. In order to integrate ICT into teaching and learning, the study recommended that teachers acquire training in information and communication technology.

Keywords: Information Communication Technology, Integration, Teaching and Learning, Public Primary Schools, Kenya

INTRODUCTION

The training of teachers in ICT is a major concern for both the general public and educational institutions. Shaukat (2006) asserts that rigorous training is necessary for teachers before they can accept ICTs. This training assist them to advance their interests, knowledge, and skills as well as their comprehension of different degrees of integration. Teacher related training programs help teachers develop positive attitudes toward computers (Hew & Brush, 2007). Miller (2008) asserts that a necessary condition for successfully integrating technology in the classroom is effective technological training.

ICT training programs can help teachers become more knowledgeable and more open-minded about incorporating ICT into the teaching and learning process. Jean and Arcand (2010) have augured that ICT training for teachers had improved their self-confidence and ability to instruct young people.

Teachers' ICT training appeared inadequate to enable them to fully integrate ICT into teaching and learning. This is because it lacked a pedagogical component. Hence, their level of ICT integration in teaching and learning may have been affected by this. Sandaholtz and Reilly (2004) have argued that, effective technical assistance and training programs that concentrate on ICT pedagogical development over technical issues help teachers incorporate technology into their lessons. The majority of teachers, according to Sogwe (2012) are more skilled with word processing than other computer programs. This indicates that these teachers' use of ICT for classroom teaching and learning was significantly impacted by their training in this specific program. In addition, Greigoire (2004) asserted that there was a dearth of training in pedagogical interactions with ICT and that only about a quarter of primary and secondary school teachers had any form of computer training.

Mehari, et-al (2020) observed that, majority of teachers lacked the essential skills and formal training to integrate ICT into their practices of teaching and learning. They had also received inadequate training in computer literacy. There was therefore limited ICT integration in teaching and learning. According to Owalabi (2013) less than 10% of teachers in primary and secondary schools have computer training. This fundamental issue prevents ICTs from being effectively integrated into the teaching and learning process in schools. Nomsa (2013) further argued that, teachers lacked the necessary training to effectively integrate ICT into primary schools. Therefore, the technology should be incorporated into programs for pre-service teachers. This would make it easier for teachers to incorporate ICT into primary school teaching and learning.

The kind of educational setting has an impact on how teachers incorporate Manduku (2012) asserted that boarding schools are more likely than day schools to accept and use contemporary ICT for teaching and learning. The teachers' ICT training is connected to the difference. Teachers at boarding schools get more on-the-job training than those at day schools. The situation at public day schools was worse than that at public boarding schools. Teachers' preparation also influence how they incorporate ICT into their lessons and student learning. It is challenging for teachers to include ICT in teaching and learning when teacher training institutions lack ICT pedagogy. Jones (2004) asserted that inadequate training strategies devoid of pedagogical elements are likely to be ineffectual and have low levels of ICT usage among teachers, which may be the root of the current situation. According to Omolewa (2009) the use of ICT to facilitate secondary education was still not common in Kenya because many of the teachers lacked ICT proficiency.

In addition to regular training, ICT teacher professional development training encourages teachers to employ ICT in teaching and learning in schools. Teachers need ongoing professional development as they start to understand and consider what it meant to teach in an ICT-infused learning environment (Jacobsen & Lock, 2004). It is easier for teachers to adapt their teaching style and use technology when they obtain high-quality professional development (Brinkerhiff, 2006; Diehl, 2005).

A high-quality training program, according to Lawless and Pellegrino (2007) lengthens the training period, offers new technologies for teaching and learning, eagerly engages teachers in significant context-related activities, strengthens collegial teamwork and has a clear vision for student achievement.

Moreover, several studies have revealed that many teachers had little ICT training during their first training phase. Several teachers in schools did not receive any training in the use of ICT in teaching and learning during their early years at teacher training institutions before commencing their professions (Ayere, 2010). To incorporate ICT into teaching and learning, these teachers are expected to participate in in-service training. However, few teachers actually took in-service ICT courses, and those that they did attend lacked

pedagogical component. For instance, Anal and Ozturk (2012) asserted that, only 6 of the total 18 teachers obtained in-service ICT training. The lack of pedagogical components in the ICT training made the six teachers ineffective and made it challenging for them to incorporate ICT into their teaching and learning. According to Omondi (2014) there should be a rush of in-service training for ICT teachers in order to address this issue.

In January 2006, Kenya launched her educational ICT policy. Despite being a step in the right direction towards achieving the MDGs and Kenya Vision 2030, ICT integration in schools has not yet gained widespread acceptance (GoK, 2007). In all of the nation's schools, a prior survey revealed that the majority of them were not properly integrating and utilizing ICT in teaching and learning as intended (Manduku, Kosgey & Sang, 2012). In addition, Laaria (2013) found that the National ICT Policy on Education of 2006 has not been successfully implemented as intended, despite the efforts of many stakeholders and the significance of ICT in the education sector. Laaria, (2013) adds that although many nations have claimed adoption rates of above 41% for ICT in teaching and learning in schools, Kenya's rate is still quite low.

Kakamega County is one of the 47 counties in Kenya that have offered certain teachers in schools ICT training and given some schools computer facilities and internet connection to incorporate ICT into teaching and learning. Despite these efforts by the Kenyan government, the influence of teachers integrating ICT in teaching and learning in public primary schools in Kakamega County is minimal (Laaria, 2013; Luhombo, 2015; CDE, 2021; CDE, 2022). There are many clear evidence of this, including inadequate curriculum coverage, low student achievement as seen in the results of the Kenya Certificate of Primary Education (KCPE) examination, and low computer literacy among the pupils. It is uncertain where this issue came from. It is essential to delve into the causes of this problem if teachers in public primary schools are to integrate ICT in teaching and learning and provide high-quality instruction. This study was carried out to investigate how teachers' training in ICT influenced integration of ICT in teaching and learning in public primary schools in Kakamega County.

RESEARCH OBJECTIVES

This study was guided by the following objectives:

1. To determine the level of training of teachers in ICT for ICT integration in teaching and learning in public primary schools in Kakamega County in Kenya.
2. To find out the influence of teachers academic qualification for ICT integration in teaching and learning in public primary schools in Kakamega County in Kenya.
3. To establish the influence of teachers attendance of in service course for ICT integration in teaching and learning in public primary schools in Kakamega County, Kenya.

METHODOLOGY

The study used descriptive survey research design. The study's target population was: 1 County Director of Education officer, 3,204 public primary school teachers, and 356 public primary school head teachers from 356 public primary schools that have Integrated ICT in the teaching and learning in Kakamega County (Kakamega County Education Office, 2022). Purposive sampling, simple random sampling, proportionate sampling, and census sampling techniques were all employed in this investigation. 546 respondents in all made up the sample frame. In order to arrive at the sample size of the study, the study determined the total available population, decided on the level of confidence, which was 95 percent in this case, and decided on the margin of error, which was 5 percent in this case. The study then computed the sample size of the study using Slovin's formulas. Questionnaire and interview schedule were used to collect data. The questionnaire were intended for both public primary school head teachers and public primary school teachers. The interview schedule was intended to acquire information on the County Director of Education.

The concept of content validity was used to examine whether a questionnaire's content actually measured the variables it was intended to. The researcher used a pilot study to evaluate the reliability of the tools before starting data collecting. The data was analyzed both qualitatively and quantitavely. The data was then summarized in tables and charts. The Statistical Package for Social Sciences (SPSS) was used to code the data and conduct both qualitative and quantitative analyses. Interviews' open-ended questions and data were recorded, transcribed, and organized. The Chi-square (x^2) test was used to gauge the degree of correlation between ICT integration and teaching and learning in public primary schools. This approach was also used to gauge how strongly the independent and dependent variables were related. Cronbach alpha (?) (0.05) served as the significance criterion.

RESULTS

The study sought to ascertain the influence of teacher training in ICT on integration of ICT in teaching and learning in public primary schools in Kakamega County in Kenya. The question that was asked was: What influence does teacher training in information communication technology have on how ICT is integrated into teaching and learning in public primary schools in Kakamega County?

Teachers' response on whether they were trained for ICT integration in teaching and learning

The public primary school teachers who participated in the study were asked to indicate whether they were trained in ICT to integrate it in teaching and learning. Their responses were as given in the Table 1

Table 1: Public primary school teacher responses on whether or not were trained for ICT integration in teaching and learning

Category of public primary school	Trained	Untrained	Total (%)
Boarding	57 (85.07%)	10 (14.93%)	67 (100%)
Day	78 (35.78%)	140 (64.22%)	218 (100%)
x^2 =3.121			
p=0.003			

Table 1 shows that, fifty seven (85.07%) of the public primary schools teachers in boarding schools were trained in ICT to integrate it in teaching and learning while ten (14.93%) in these category of schools were not. Only seventy eight (35.78%) of the sampled teachers in day public primary schools in Kakamega County were trained in ICT to integrate it in teaching and learning. One hundred and forty (64.22%) out of 218 teachers in these category of public primary schools were not trained in ICT. A chi-square test was conducted to test the significance difference in the number of trained teachers in ICT in boarding and day public primary schools at P-value (probability) at 95% confidence interval. The number of teachers trained in ICT in public primary schools was significantly higher in the boarding schools than in day schools ($?^2$ = 3.121, df = 0.005, P = 0.003). Similar findings were reported by the head teachers of the sampled public primary schools. Their findings were as shown in table 2.

Table 2: Head teachers' response on whether or not their respective public primary school teachers were trained for ICT integration or not in teaching and learning

Category of public primary school	Trained	Untrained	Total (%)
Boarding	42 (62.69%)	25 (37.31%)	67 (100%)

Day	22 (28.95%)	54 (71.05%)	76(100%)
Totals	64 (44.76%)	79(55.24%)	143(100%

Table 2 shows that, 42 of the head teachers representing 62.69%% of the public primary boarding schools reported that, their respective teachers were trained in ICT while 25 (37.31%) in this category of public primary schools said that, their teachers were not trained ICT to integrate it in teaching and learning. 22 of the head teachers in public primary day schools representing 28.95% reported that, their respective teachers were trained in ICT to integrate it in teaching and learning while 54 (71.05%) of the head teachers reported that, their respective teachers were not trained in ICT to integrate it in teaching and learning.

Public primary school teachers' academic qualification for ICT integration in teaching and learning

Public primary schools teachers of the sampled public primary schools in Kakamega County were asked to state their qualification in ICT. Their responses were as shown in figure 1.

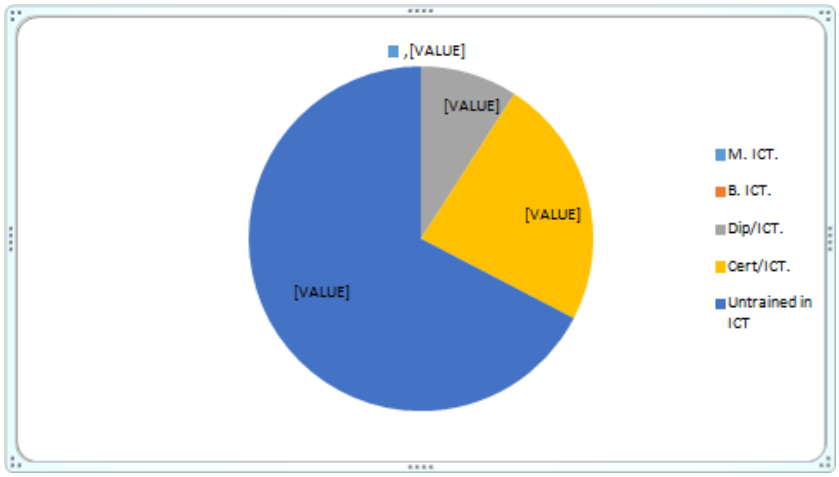

Figure 1: Public primary school teachers' academic qualifications for ICT integration in teaching and learning

Figure 1 demonstrate that, there were twenty six (9.12%) teachers who reported that they had Diploma in ICT, sixty seven (23.51%) reported that, they had certificate in ICT while one hundred and ninety two (67.37%) reported that they were not trained in ICT. None of the teachers reported to have Bachelor or Master of degrees in ICT. In relation to this variable, head teachers were also asked to indicate the qualifications their respective teachers in ICT. Their responses were as shown in table 3.

Table 3: Public primary school head teachers' response on their respective teachers' academic qualification for ICT integration in teaching and learning

Teachers' level of training in ICT	Frequency (f)	percentage (100%)
M. ICT.	00	00.00
B. ICT.	00	00.00
Dip/ ICT.	17	11.88
Cert/ ICT.	50	34.97
Untrained in ICT	76	53.15
Totals	143	100

Table 3 indicates that, 50 (34.97%) of the public primary school head teachers reported that their respective

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue VIII August 2023

teachers were trained in ICT at certificate level while 76 (53.15%) were not trained in ICT. Seventeen (11.88%) were trained in ICT with diploma. None of the head teachers reported that their respective teachers had either Bachelor or Master's degrees in ICT.

Public primary school teachers' integration of ICT in teaching and learning

The data provided in this section was meant to get information on whether the respondents actually adopted ICT in teaching and learning in their respective public primary schools. The results were as shown in table 4.

Table 4: Public primary school teachers' response on whether or not integration of ICT in teaching and learning

Do you integrate ICT in teaching and learning?	Frequency (f)	Percentage (%)
Yes.	69	24.21
No.	216	75.79
Totals	285	100

Evidence from table 4 shows that, sixty nine (24.21%) of the public primary school teachers integrated ICT in teaching and learning while two hundred and sixteen (75.79%) public primary school teachers did not integrate ICT in the teaching and learning in public primary schools. The study also sought further information from the head teachers regarding the teachers' integration of ICT in teaching and learning in their respective public primary schools. Their views were as shown in table 5.

Table 5: Head teachers' response on whether or not their respective public primary school teachers integrate ICT in teaching and learning

Do you integrate ICT in teaching and learning?	Frequency (f)	Percentage (%)
Yes.	66	46.15
No.	77	53.85
Totals	143	100

From table 5, sixty six (46.15%) of the sampled public primary schools head teachers had a view that, their respective teachers integrate ICT in teaching and learning while seventy seven (53.85%) of the sampled public primary schools teachers did not integrate ICT in the teaching and learning process in their respective public primary schools.

Teachers' response on whether or not they had attended in service course for ICT integration in teaching and learning

Public primary school teachers were asked to state whether they had attended any in- service course in ICT other than their regular training course. Their responses were as shown in table 6.

Table 6: Teachers' response on whether or not they had attended in service courses for ICT integration in teaching and learning

Have you attended any in-service course in ICT?	Attended	Not Attended	Total(%)
Boarding	38 (56.72%)	29 (43.28%)	67
Day	47 (21.56%)	171 (78.44%)	171
X2 = 7.156			

P Value = 0.001			

Table 6 shows that, thirty eight (56.72%) of the public primary boarding school teachers had attended in service courses in ICT while twenty nine (43.28%) had not. Forty seven (21.56%) of the sampled teachers in public primary day schools in Kakamega County had attended in-service course in ICT while one hundred and seventy one (78.44%) of the sampled teachers in public primary day schools had not. Further computation indicates that, the number of teachers who had attended in-service course in ICT were significantly low in all categories of schools (χ^2 = 7.156, df = 0.05, P = 0.001). In relation to whether their respective public primary school teachers had attended in service courses in ICT for integration of ICT in teaching and learning, the sampled head teachers responded as shown in table 7.

Table 7: Head teachers' response on whether their respective public primary school teachers had attended in service course for ICT integration in teaching and learning

Have your teachers attended any in- service course in ICT?	Frequency (f)	Percentage (%)
Yes.	47	32.87
No.	96	67.13
Totals	143	100

From table 7, forty seven (32.87%) of the public primary school head teachers said that, their respective public primary schools teachers had attended in- service courses in ICT while ninety six (67.13%) report that they had not.

Table 8: **Teacher responses on the areas they were trained in for ICT integration teaching and learning**

Areas teachers were trained in ICT	Frequency(f)	Percentage(%)
Computer software	16	34.04
Internet search engines	07	14.89
Recording and editing video teaching	03	6.38
Use of web resources in teaching	07	14.89
ICT educational pedagogy	04	8.51
Create smart board lessons	01	2.1
To integrate ICT in teaching and learning	02	4.26
Multimedia elements	04	8.51
Locate, retrieve and retain information from	03	6.38
Totals	47	100

The data in table 8 shows that, 34.04% of the teachers in public primary schools were trained in computer software, 14.89% were trained in computer skills, 6.38% were trained in recording and editing video teaching, 14.89% were trained in the use of web resources in teaching, 8.51% were trained in ICT educational pedagogy, 3.21% were trained on how to create smart board lessons 4.26% were trained in how to integrate ICT in teaching and learning, 8.51% were trained in multimedia elements while 6.38% were trained in how to locate, retrieve and retain information from a range of text and technology. In regard to this variable, the head teachers' responses on the areas their respective public primary school teachers were trained in ICT were as shown in in table 9

Table 9: Head teachers' response on the areas their respective teachers were trained in for ICT integration in teaching and learning

Areas teachers were trained in ICT	Frequency(f)	Percentage(%)
Computer software	10	21.27
Internet search engines	05	10.64
Recording and editing video teaching	03	6.38
Use of web resources in teaching	08	17.02
ICT educational pedagogy	04	8.51
Create smart board lessons	02	4.26
To integrate ICT in teaching and learning	07	14.89
Multimedia elements	02	4.26
Locate, retrieve and retain information from	06	12.77
a range of text and technologies		
Totals	47	100

The data in table 9 indicate that, 10 (21.27%) of the head teachers of the sampled public primary schools reported that, their respective teachers were trained in computer software, 5 (10.64%) were trained in internet search engines, three representing 6.38% were trained in recording and editing video teaching, 8(17.02%) were trained in how to use web resources in teaching. The head teachers further reported that, 4 (8.51%) were trained in ICT educational pedagogy, 2 (4.26%) were trained on how to create smart board lessons seven of them representing 14.89% were trained in how to integrate ICT in teaching and learning, 2 (4.26%) were trained in multimedia elements while six, accounting for 12.77% were trained in how to locate, retrieve and retain information from a range of text and technology.

DISCUSSION OF THE RESEARCH FINDINGS

Teachers must receive ICT training in order to successfully integrate ICT into teaching and learning. More ICT-integrated activities will be used in the classroom as teachers gain proficiency with ICT resources. It is evident from Table 1 of the teachers' responses and Table 2 of the head teachers' responses that the majority of the teachers in public primary schools in Kakamega County schools lack ICT training. This might have had a detrimental effect on how they used ICT in their teaching and learning. Macharia (2012) asserts that a dearth of ICT training had a substantial impact on teaching and learning in public primary schools. These findings are in line with a research by Ayere et al. (2010), which found that many teachers in classrooms lacked prior ICT training during their formative years at teacher training institutions. Six of the 18 teachers that were sampled had received in-service ICT training, according to Anal and Azturk (2012). Less than 10% of teachers in primary and secondary schools in Nigeria had computer training, according to a study conducted by Owalabi (2010). In addition, Kadiri (2012) discovered that none of the 2250 ICT teachers in Kenya who received their degrees from postsecondary institutions and universities in 2015 worked in primary schools. This demonstrates how few ICT instructors in Kenyan classrooms are equipped to use technology to enhance instruction. These results support Omolewa's (2009) findings that many teachers lacked Computer literacy and that those undergoing training had limited exposure to ICT use for skill building and practical teaching. According to Morris (2013) little has been done to successfully address the inequality in ICT skills and the training of the teaching force, particularly in the primary sector, despite several government training initiatives, laws, and generous financing.

The extent to which teachers use technology to enhance teaching and learning depends significantly on the

type of school. The study found that the majority of ICT-trained teachers were from public primary boarding schools. According to the findings in table 2, teachers at public primary day schools were less likely than those of public primary boarding schools to incorporate ICT into teaching and learning. Additional statistical analysis showed that there were more public primary boarding schools in Kakamega County with ICT integration in teaching and learning than there were public primary day schools. This was because public primary boarding schools had more advanced infrastructure than public primary day schools, especially in terms of computer facilities. As a result, teachers in public primary boarding schools were more equipped to adopt and apply ICT in teaching and learning than their counterparts in public primary day schools. These findings are consistent with Manduku's (2012) finding that boarding schools adopted and used modern ICT in the teaching and learning process more frequently than day schools. The differentiation is connected to the teacher training in ICT. Compared to day school teachers, boarding school teachers get more on-the-job training. The two biggest obstacles to teacher training for ICT use, according to Talla (2007), are a lack of technical assistance in the classrooms and a lack of ICT expertise. Additionally, the study revealed that public secondary day schools had worse conditions than public secondary boarding schools.

The level of ICT integration that teachers implement in their teaching and learning is heavily influenced by their academic background in the field. According to studies, teachers with greater ICT credentials are more likely than those with lower ICT qualifications to adopt and use technology in the classroom. According to research, teachers with Master's or Doctoral degrees possess better computer abilities than those with only a first degree or diploma, making it easier for them to incorporate ICT into both instructional and educational activities. Figure 1 and Table 3's responses make it clear that most public primary school teachers in Kakamega County lacked the ICT proficiency needed to integrate technology into their teachings. Only a few of these teachers had degrees or certificates in ICT. According to this study, there is minimal difference between how teachers in Kakamega County use ICT for teaching and learning. These findings back with Clark's (2000) assertion that teachers' degrees of academic and professional preparation affect how well they can instruct and learn. The results support those of Makhanu (2010) who found a connection between teachers' educational backgrounds and computer literacy. The poll also revealed that teachers who were proficient with computers welcomed ICT use in the classroom.

According to research, when used in conjunction with the right teaching methodologies, ICT encourages students to think more abstractly. The main justification for incorporating ICT into education is the idea that technology encourages critical thinking in pupils, helps them overcome cognitive constraints, and engages them in cognitive processes that they might not otherwise have. A sizable percentage of instructors do not use ICT in teaching and learning, according to the reports from teachers and head teachers in tables 4 and 5. These statistics show that there is little influence of teachers' usage of ICT in teaching and learning. These results support the assertions made by Cuben (2001), Allen and Seaman (2006) that many teachers did not integrate technology into their teaching and learning activities in the classroom despite large global investments in ICT infrastructure. Furthermore, according to Mandina (2005), teachers lacked the technical know-how, professional experience, and in-service training necessary to incorporate ICT into the teaching and learning of environmental science.

A lack of pre-service and in-service training, the brain drain to western nations, a lack of teacher participation in curriculum and evaluation, and other problems restrict teachers from incorporating ICT in schools, according to Anguko and Hannessy (2010). Mehari et al.'s (2020) research also found that most biology teachers lacked formal training in how to integrate ICT into their practices of teaching and learning as well as adequate computer literacy training. Thus, the use of technology in the teaching of biology was quite small. The lack of ICT training among teachers had a substantial impact on how the curriculum was implemented in primary schools (Omondi, 2014).

However, these results contradict Wagner's (2005) observation that ICT is currently used extensively to support education in many poor countries, and it

appears that there is increased demand for their use in education. The results of this study are also disputed by Farell et al. (2007). ICT is widely used in educational institutions, such as primary and secondary schools, in South Africa, Senegal, Mali, Ghana, Nigeria, Cameroon, Namibia, and Uganda, according to the report.

The continued professional development of teachers is equally important to the integration of ICT in teaching and learning. The study's findings in tables 6 and 7 revealed that, majority of teachers in public primary schools with boarding facilities had taken an in-service ICT course, compared to counterparts in public primary day schools in Kakamega County. Further computation showed that teachers who had attended in-service ICT courses were significantly underrepresented in all types of schools (.2 = 7.156, df = 0.05, P = 0.001). The head teachers' response in table 7 showed a close relationship with the of the public primary school teachers. These findings complement Yuksel (2009) and Mandina (2015) who demonstrated that a dearth of in-service training in the subject was the main barrier to integrating ICT in teaching and learning. Only 6 out of a total of 18 teachers had received in-service ICT training, according to Anal and Ozturk (2012). According to the six teachers, the ICT training was ineffective since it lacked instructional components. Mandina (2015) made discoveries that were comparable. According to the study, the absence of necessary skills, in-service training, and technological pedagogical content knowledge among environmental science teachers was the main barrier to their use of ICT in the classroom.

Teachers' utilization of ICT in teaching and learning is greatly influenced by their in-service training in subject or ICT learning areas. Teachers who were in service in relevant ICT fields adopted ICT in teaching and learning far more than those who were in serviced in one ICT areas. The study's findings in of the teachers tables 10 and 11 of the teachers and head teachers responses shows that majority of the teachers were trained in not more than one package of computer. Due to the fact that majority of primary school teachers in public primary schools were skilled in one or two programs, these findings led to the conclusion that the use of ICT by teachers in teaching and learning had little influence. These findings are consistent with a study by Sogwe and Prestride (2012) which found that word processing skills are more common among instructors than other computer program skills. Further, Greigoire's (2004) research revealed that fewer than a quarter of teachers had ever taken any form of computer training, and even fewer had been instructed in how to use ICT for educational purposes.

RECOMMENDATIONS

The following recommendations are hereby made in light of the summary of the findings and conclusions presented in the preceding section: Many teachers still feel nervous and worried about implementing ICTs in the classroom. They need basic ICT training because their lack of ICT proficiency is the root of this. An assessment study that addresses the shortcomings in ICT among teachers is required in order to adopt a practical solution. The availability of in-service and pre-service ICT skills in areas like networking, pedagogy, technical challenges, and social issues is crucial for ICT competency. Senior and older teachers require training. To maintain equity when it comes to the delivery of ICT services in public primary schools, the Ministry of Education must make sure that teachers have received proper ICT training. Policymakers ought to make ICT a mandatory subject in the elementary school curriculum because it is essential to accomplishing the MDGs and Vision 2030.

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