

# Influence of Technical Support on ICT Integration in Classroom Practices in Public Primary Schools in Bungoma County, Kenya

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**Abstract:** *Quality education requires efficient systems that would provide a supportive learning environment. Globally, education is experiencing paradigm shifts in instructional practices putting a lot of emphasis on the use of Information Communication Technology (ICTs) in classroom practices. Despite the usefulness of these technologies, their integration in classroom practices is slow owing to existence of some challenges. The study reported in this paper sought to ascertain the influence of the integration of ICT pedagogical skills on classroom practices in public primary schools in Bungoma County, Kenya. The objective was to examine instructional and technical support available for ICT integration in classroom instruction. This study was based on the Roger's theory of diffusion of innovations. The population of the study was drawn from public primary school teachers and Sub-County Quality, Assessment and Standards Officers (SCQASOs) in Bungoma County. Descriptive survey design was adopted and using simple random sampling technique, a sample of 343 was involved comprising of 40 head teachers, 300 teachers and 3 SCQASOs. Data was collected using questionnaires, interviews and observation schedules instruments which were validated by the help of research specialists and their reliability established using the Pearson's Product Moment Correlation Coefficient. Data collected was analyzed using descriptive statistics involving computation of frequencies and percentages. The findings from the study established that teachers trained have only basic application skills for personal use of the internet and communication but not for classroom instruction. Further, most schools generally lack the necessary infrastructure and technical support for ICT integration classroom practices. Therefore, there is need for teamwork efforts to overcome the challenges to classroom ICT integration. The results are envisaged to contribute to the realization of the need for formulation of suitable policies to enhance acquisition of the necessary ICT infrastructure to facilitate the uptake and use of ICTs in classroom instruction.*

**Keywords:** Pedagogical Preparedness, ICT Integration in Instruction, Classroom Practices

## 1. Introduction

In the current highly competitive knowledge-based economy of the 21st century, education is the most vital strategy for socio-economic development across the world (Aikman & Unterhalter, 2005). For individuals and states, it is key to creating, applying, and spreading knowledge and development of dynamic, globally competitive economies (World Bank report, 2011). It also helps the individual to realize their highest potential by preparing them for the future challenges in life (Sharma, 2012). Kenya's economy, like other countries' economies, requires a steady supply of scientifically and technologically knowledgeable human resource (Mutahi, 2009). This underscores the immense role science and technology play in the development of a country. Hence, it is an implicit requirement for learner to acquire requisite knowledge and skills in science and technology to cope in the modern economy.

Through the Sessional Paper, No 1 of 2005, the Government has committed itself to develop sector policies and implementation strategies that envisaged to ensure the provision of relevant and quality education and training to Kenyans. The blueprint currently being implemented through KESSP involves activities that are geared towards improving the teaching and learning environment and to ensure greater accountability at the individual level, the level of the school and community as well as the Ministry. It also sought to improve the outputs from the education system and where the introduction of ICT in education is part of the more fundamental objective to improve education globally and to make it accessible to everyone. The use of ICT in education has the promise to enrich the excellence of teaching and learning, the research productivity of both the

teacher and the learner, and the administration and effectiveness of institutions (Kashorda et al. 2007) in Wanjala (2016). Information and Communication Technology includes computers, the internet, and electronic delivery systems such as radios, televisions, and projectors among others. These are widely used in instruction, learning, and assessment and have been reported to support new ways of teaching and learning as they better pupil's skills for cooperation, communication, problem solving as well as their lifelong learning experiences (Katz, 2003).

Many sub-Saharan countries including Kenya have made efforts in integrating ICTs into their education systems that has enhanced their development socially and economically. These have been transformed into knowledge-based economies and have developed industrially. Kenya has put in place the ICT Legal Framework embedded in the ICT Act (Cap 41 1a) of 1998. This created the Communication Authority of Kenya (RoK, 2010). In Kenya, the ICT policy advocates for innovative practices in the implementation of the curriculum.

Studies have shown that there is need for effective professional development for teachers. Wanjala, Khaemba and Mukwa (2011) examined the factors that are significant in professional development for effective use of ICT in instruction among secondary school teachers. Their findings showed only a few teachers integrated ICTs in different content areas yet without expertise as they frequently relied on course work completed at the universities and training colleges to help them in ICT integration. Wanjala et al. (2011) further reported that most teachers faced several similar challenges – limited access to computer hardware, lack of requisite the knowledge and skills to integrate ICT,

inadequate time to integrate ICT into their subjects, lack of suitable subject content software, no support from administrators, and negative attitudes towards ICT. To do away with these obstacles, Wanjala et al. (2011) suggested that there is a need to provide better initial teacher training on ICT integration, offer professional development on ICT integration, allocate funds to ICT implementation, and to redesign the school curriculum. Regrettably, the uptake has been slow in most Counties in Kenya.

Early primary school learning is the fundamental path to the realization of the Millennium Development Goals (Republic of Kenya, 2005). In Kenya, it serves the critical purpose of preparing young children for primary education. Parents have been responsible for planning, developing and managing different early childhood programs. Scholars recognize that a gradual shift in emphasis occurs over the first eight years of a child's life, along a continuum from play to more structured learning in formal settings. Research indicates that the early years, particularly 0-8 years are critical for optimal learning and development (Adams & Swadner, 2000). At lower primary class level, Early Childhood Development Education curriculum planning and development is a collective responsibility which involves many participants, teachers being inclusive (Shiundu & Omulando, 1992). Some specialists in play activities argue that, the ever-increasing amount of knowledge and skills needed by young children through play at lower schooling require teacher's guidance or direct instruction to specify the specific learning goals and objectives and support integration of children's play in the curriculum. Simiyu, 2013 asserts that early school days are supposed to be the happiest moment for pre-school learners and suggests that teachers should provide materials for play, encourage high quality play, structures environments for play, model the play and introduce children to new play opportunities.

Research has shown in most classrooms, traditional or conventional teacher-centered pedagogical practices are dominant with emphasis on the content coverage and learner memorization of teacher -selected content are not effective (Bransford et al 2000; Moon 2004; Kozma 2005, Wanjala et.al 2016). In these classrooms emphasis is on the use of textbooks where the teacher is the only source of information, learning is passive, and examination oriented and learners work was merely to find correct answers. On the other hand, modern or contemporary ICT integrated pedagogical practices assign a lot of essence on the learner; they are learner-centered classroom practices. They emphasize competency and performance with stress on the access and use of information where learning activities are problem-centered, and inquiry based, and learners use electronic gadgets (Stephenson, 2001). Teachers are mentors, guides and fellow learners in class, acting as mere facilitators of learning rather than instructors. Learners work on activities and projects collaboratively with peers, experts and teachers. Learners' interests and involvement promotes intrinsic motivation and effort to learn well. Generally, learners use gadgets to communicate, create knowledge and conduct research.

Our classrooms are often composed of pupils from different backgrounds, with different levels of motivation and are also

of a wide ability range. This calls for a variety of methods and approaches to teaching incorporating a variety of resources to solve the challenges of learners. A sound lesson on any topic should encompass multiple instructional methods. The incorporation of several different instructional techniques amplifies the possibility that the learners will develop understanding through at least one method. Instruction could perhaps reap big from the use of information communication technologies that have pervaded our contemporary society. At the lower levels, more attention should be placed on children's play with learner-centered methodologies and assessment modes are applied. These tools promote collaboration, team working, inquiry learning and differentiated learning styles that enhance communication, self-efficacy, critical thinking and problem-solving, digital literacy, imagination and creativity.

Technological skills are increasingly important for advancement in education, work, and leisure. The curriculum integrates ICT into the teaching and learning process and provides children with opportunities to use modern technology to enhance their learning in all subjects (Department of Education and Science, 1999). This suggests that ICT in the primary school curriculum is seen primarily as a tool for facilitating teaching and learning throughout the curriculum, rather than ICT as a subject. Digital literacy is increasingly becoming an essential life and work skill. ICT, including computer applications, mobile technology and communication systems, seems to have become an important means in teaching (Coates & Friedman, 2009). Teachers should therefore acquire the necessary skills and knowledge to use and maintain these technologies (Cuban, 2001). Apart from training teachers, school requires qualified assistants in ICT skills. Such highly trained technical work force with required skills to service, repair and arranging for the learning environment just like it was with the laboratory sciences with technicians. Such experts may include ICT media analysts who carry out general, quantitative and qualitative research to improve the effectiveness of media programmes management systems in schools (Thomas, 2008).

Training and capacity building is crucial on the knowledge and technical skills on ICT tools. Research done by Brown and Murray (2006) shows that curriculum implementers should be aware of the potential that ICT tools play in classroom instruction. They observe that where ICT expertise was lacking, policies planned by the government and investment towards the implementation of ICT in schools is bound to fail in realizing the desired school reforms.

ICT integration involves several instructional facilities and materials which require technical support in innovativeness, repair and maintenance. Teachers need to perfect their knowledge and competencies in ICT technology by being encouraged to pursue ICT training programmes to broaden their knowledge and skills in integrating ICT in Classroom Instruction (MOEST, 2013). This will create a shift from traditional instructional methods to technology enabled, learner-centered pedagogy. However, there is limited or no uptake of digital literacy in public primary schools in Bungoma County despite the Kenyan governments'

initiative towards equipping schools with these technologies. It was against this backdrop that the study reported in this paper sought to ascertain the influence of the technical support on the integration of ICT in classroom practices in public primary schools in Bungoma County, Kenya.

## 2. Research Question

How is the technical support influencing ICT Integration in Classroom Practices in Public Primary Schools?

## 3. Methodology

This study adopted the descriptive survey research design involving both quantitative and qualitative data collection. Creswell (2007) suggests that descriptive studies were advantageous when not much has been written about the topic or the population being studied. It was preferred over other designs because of its rapid data collection and ability to help understand populations from a part of it (Orodho, 2002). Bungoma County is fairly a wide area and hence this design was convenient in soliciting views from respondents.

The researcher adopted mixed methods involving a qualitative research design of exploratory nature (Keaveney, 1995; Bowen, 2005) and sought to gain new insights about how teachers construct meaning in their lives, which among other things is informed by their experiences, as they negotiate teacher's ICT usage in classroom practices. An exploratory study, as in this research design, was promoted by making use of an open, flexible and inductive approach to understanding the actors' constructions of their experience. The principle of an exploratory approach is to add to the existing knowledge base, academic debates, understanding and perceptions of the implementation of ICT policy on education in as far as pedagogical integration is concerned. This study was undertaken in public primary schools in Bungoma County. Bungoma County by the time of carrying out this study had 9 Sub Counties including Mt. Elgon, Cheptais, Kimilili, Bungoma North, Bungoma West, Bungoma Central, Bungoma South, Bungoma East and Bumula by the time this research was undertaken. The study targeted teachers and head teachers drawn from public primary schools, and Sub-County Quality Assurance and Standards Officers (SCQASOs) in the 9 Sub-Counties of Bungoma County. Purposively, the study focused on 3 Sub-

Counties namely: Cheptais, Bungoma West and Bungoma Central. The County had 120 schools, 869 teachers, 120 head teachers and 9 SCQASOs (Education Officers) at the time the research reported in this paper was being done.

The pilot study was undertaken in 2 schools which did not participate in the actual study. The results were used in establishing the validity and reliability of the research tool. A content validity test was conducted to check if there were enough relevant questions covering all aspects being studied and those irrelevant questions were removed. According to Polit & Beck (2010), a panel of experts is recommended to evaluate research instruments for their validity. The researcher carried out a stability test using the test-retest method on a small population during a pilot study (Kothari, 2009). Reliability was determined by correlating the two administrations using Pearson's product-moment correlation coefficient ( $r$ ). The values of  $r$  obtained were 0.867 and 0.829 for teachers and head teacher's questionnaires respectively. These were above the recommended threshold of 0.7 hence the instruments were considered ideal, reliable and suitable for collection of data (Frankel, Wallen and Hyun, 2000). Data analysis entailed descriptive statistics using frequencies and percentages from which interpretations and recommendations were made. In addition, the quantitative analyses were supplemented by qualitative descriptions to provide a fuller picture of the findings.

## 4. Results

The study sought to ascertain the level of technical support available for integration of ICTs in instruction. The findings are as presented in the following sections.

### 4.1 Level of Technical Support Available and ICT Integration in Classroom Practices

The teachers' rating on the level of technical and infrastructural support for the integration of ICTs in instruction was established. To accomplish this, answers were sought on rating of levels of personal ICT skills, technical support, quality of training in ICT integration, preparation of ICT content material and maintenance of ICT equipment as presented in table 1.

**Table 1:** Teachers Views on Level of Technical Support for Integration of ICT

	Highly Adequate		Adequate		Inadequate		Highly Inadequate	
	f	%	f	%	F	%	f	%
How do you rate levels of personal ICT skills	0	0	72	24	72	24	156	52
How do you rate levels of technical support	0	0	36	12	99	33	165	55
How do you rate quality of training in ICT integration	0	0	45	15	90	30	165	55
How do you rate preparation of ICT content material	9	3	27	9	90	30	173	58
How do you rate maintenance of ICT equipment	9	3	27	9	81	27	183	61

The results show that the level of teacher's personal skills was rated adequate by 72 (24%) and inadequate and highly inadequate by 72 (24%) and 156 (52%) respectively of majority of teachers taking part in the study. The level of technical support was rated adequate by 36 (12%), inadequate by 100 (33%) and highly inadequate by 164 (55%) most of the teachers. The quality of training in ICT

integration was rated adequate by 45 (15%), inadequate by 91 (30%) and highly inadequate by 164 (55%) most of the teachers. The preparation of ICT content material was rated highly adequate and adequate by 9 (3%) and 27 (9%) respectively, inadequate by 90 (30%) and highly inadequate by 164 (55%) most of the teachers. The maintenance of ICT equipment was rated highly adequate and adequate by 9

(3%) and 27 (9%) respectively, inadequate by 82 (27%) and highly inadequate by 182 (61%) most of the teachers.

The results showed that levels of personal ICT skills, technical support, and quality of training in ICT integration, preparation of ICT content material and maintenance of ICT equipment were rated inadequate by majority of teachers taking part in the study. From the findings, teachers require

to be trained in pedagogical skills more so in selecting the relevant software and how to integrate the same in instruction. From the responses, teachers require assistance in how ICTs can be well applied and utilized to realize the educational objectives and how to organize learner friendly classroom environment (Mwelese, Wanjala, Simiyu & Amadalo, 2016).

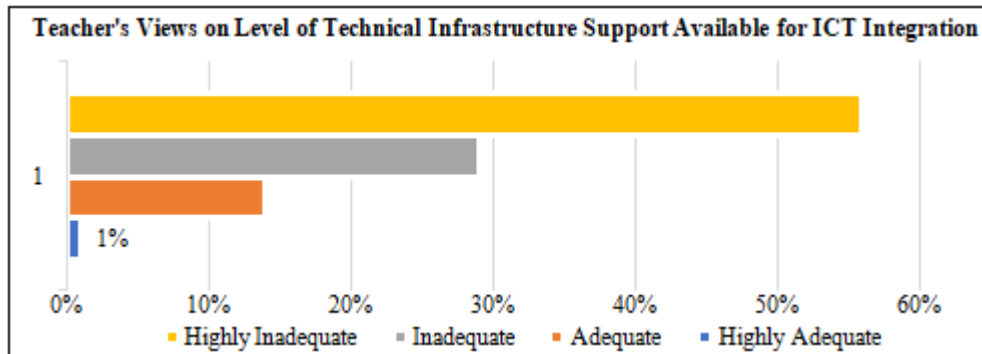


Figure 1: Teacher's Views on Level of Technical and Infrastructure Support Available for ICTs Integration

On the teachers views on the level of technical infrastructure support available for ICT integration in instructional practices, the results as indicated in figure 9 show that availability of technical infrastructure support was not highly adequate by 1%, adequate by 9 %, inadequate by 30% and highly inadequate by 50% a majority of the respondents and this shows that in most of the schools

included in this study, the level of technical infrastructural support given to the teachers to integrate the ICTs in classroom practices is either non- existent or inadequate.

The study sought the comments of the head teachers on the availability of technical support for integration of ICT in instruction; the results are as indicated in table 2.

Table 2: Head Teachers' Views on Availability of Technical Support for ICT Integration

	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	F	%	f	%	F	%	F	%	F	%
My school encourages and supports teachers to attend in-service ICT training	1	3	8	20	7	17	9	22	15	38
Computers in my school are frequently serviced to ensure they are in good condition	3	7	3	7	4	10	15	38	15	38
There is technical personnel to assist whenever a problem arises with computers	0	0	3	7	4	10	13	32	22	51
There is an alternative source of power in the school to avoid power inconveniences	1	3	1	3	0	0	15	37	23	57
Classrooms/laboratories are equipped with computers	0	0	1	3	2	5	7	17	30	75
Insufficient expertise/guidelines for helping teachers to use ICTs in instruction	2	5	8	20	1	3	11	27	18	45
The school lacks good software programs	11	28	11	28	1	2	3	7	14	35
There is lack of essential computer skills/knowledge of using computer for instruction	6	15	13	32	2	5	10	25	9	23

On whether the school encourages and supports teachers to attend in-service ICT training, very few, 1 (3%) and 8 (20%) of the head teachers agreed, 7 (17%) were undecided as a majority 9 (22%) and 15 (38%) disagreed. Asked whether computers in their schools are frequently serviced to ensure they are in good condition, 6 (14%) of the head teachers agreed, 4 (10%) were undecided as a majority 15 (38%) and 15 (38%) disagreed. On whether there are technical personnel to assist whenever a problem arises with computers 3 (7%) of the head teachers agreed, 4 (10%) were undecided as a majority 13 (32%) and 22 (51%) disagreed.

On whether there is an alternative source of power in the school to avoid power inconveniences only 2 (6%) of the head teachers agreed, as a majority 15 (37%) and 23 (57%) of the head teachers disagreed. Classrooms/laboratories are equipped with computers as indicated by only 1 (3%) who agreed as a majority 7 (17%) and 30 (75%) of the head teachers disagreed. There are insufficient expertise/guidelines for helping teachers to use ICTs in instruction as

indicated by 2(5%) and 8 (20%) of the head teachers who agreed as 11 (27%) and 18 (45%) most of the head teachers disagreed on this. Most schools lack good software programs as indicated by a majority 21 (56%) of the heads of primary schools who took part in this study, 1 (3%) was undecided as a 3 (7%) and 14 (35%) of the head teachers disagreed. These results support those of Mwelese, Wanjala, Simiyu and Amadalo (2016) who in their paper titled "Barriers to effective ICT integration in Mathematics: Implications for its Actualization in Secondary Schools in Kenya". Mwelese et al. (2016) observed that ICT integration in instruction requires up-to-date software and hardware. From the study findings, it was established that most schools do lack appropriate software programmes. There is also lack of essential computer skills/knowledge of using computer for instruction among the head teachers as indicated by 18 (47%) of the head teachers, 2 (5%) were undecided as 19 (48) disagreed.

The results show that in most of the schools, the head teachers acknowledge that they do not encourage and support teachers to attend in-service ICT training. Further computers in their schools are not frequently serviced to ensure they are in good condition. There are no technical personnel to assist whenever a problem arises with computers. In addition, there is no alternative source of power in the school to avoid power inconveniences. There are no classrooms/laboratories equipped with computers. Most schools have insufficient expertise/guidelines for helping teachers to use ICTs. In most schools, good software programs and skills/knowledge of using computer for instruction are lacking.

These findings are like those of Mwei (2012) thesis on effect of computer assisted instruction on student’s attitudes and achievement in matrices and transformation in secondary schools in Uasin Gishu District, Kenya. Therefore, ICTs integration plays a prominent role in achieving classroom instructional objectives.

**4.2 Management of ICT Section in Schools**

The study sought to establish the management of ICT section in the schools as perceived by the teachers who participated in the study and results are as presented in table 3.

**Table 3:** Teachers’ Views on the Management and Technical Support for ICT Integration in Classroom Practices

Teachers’ Responses		Frequency (f)	Percent (%)
Who oversees ICTs section in your school?	Head teacher	72	24
	Computer teacher	18	6
	Subject teacher	45	15
	Don't know	165	55
How available is the person in charge of ICTs section in your school?	Readily Available	45	15
	Available	63	21
	Not Available	192	64

In response, 72 (24%) of the teachers indicated the head teacher, 18 (6%) indicated the computer teacher, 45 (15%) indicated the subject teacher as 165 (55%) as most of the teachers said that they do not know who the responsible person is. On the availability of the person in charge of ICTs, section is in school. In total, 45 (15%) indicated readily available, 63 (21%) indicated available as a majority; 192 (64%) of the teachers indicated that they are not available. The study findings agree with those of Andoh (2012) in his paper titled “Factors Influencing teachers’ adoption and integration of ICT: A Review of Literature”. It was reported that technical support personnel for assisting teachers in ICT integration was found limited; a factor which is similar to most developing countries like Kenya. The general challenges therefore to ICT integration in classroom practices include lack of technical support and how to select the required software content for learning. The study sought to know the teacher’s knowledge and skills of use of ICTs in classroom practices. Teachers were asked to respond on their knowledge and skills on how to start and shut a computer, Use internet, word processor, spreadsheets, database application, presentations applications and ICT content material. The results are shown in table 4.

**Table 4:** Teachers’ views on the ICT Knowledge and Skills

	Highly Adequate		Adequate		Inadequate		Highly Inadequate		Not Available	
	f	%	F	%	F	%	f	%	f	%
Start and shut a computer	72	24	36	12	93	31	0	0	99	33
Use internet	54	18	45	15	93	31	9	3	99	33
Use of word processor	0	0	0	0	36	12	72	24	192	64
Use of spreadsheets	0	0	0	0	36	12	54	18	210	70
Use of data base application	0	0	9	3	36	12	45	15	210	70
Use of presentations applications	0	0	0	0	45	15	45	15	210	70
ICT content material	0	0	18	6	27	9	45	15	210	70

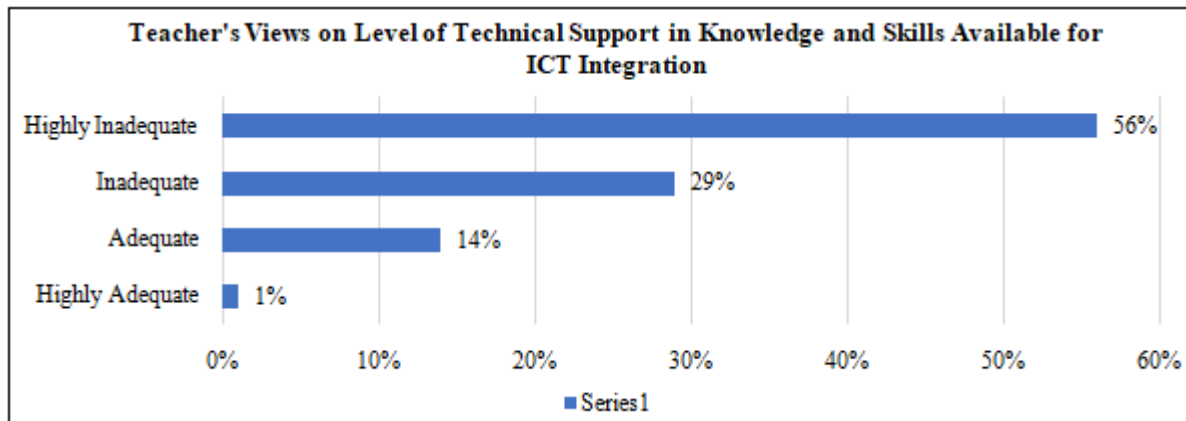
On how to start and shut a computer, the results showed, highly adequate was noted by 72 (24%), adequate by 36 (12%), inadequate by 93 (31%), highly inadequate by none as a majority 99 (33%) of the teachers indicated that the computers are not available. About the use of the internet, highly adequate was noted by 54 (18%), adequate by 45 (15%), inadequate by 93 (31%), highly inadequate by 9 (3%) as a majority 99 (33%) of the teachers indicated that the computers are not available. The use of word processor was not rated highly adequate or adequate but inadequate by 36 (12%), highly inadequate by 72 (24%) as a majority 192 (64%) of the teachers indicated that the computers are not available. The use of spreadsheets was not rated highly adequate or adequate but inadequate by 36 (12%), highly inadequate by 54 (18%) as a majority 210 (70%) of the teachers indicated that computers are not available. The use

of data base application was not rated highly adequate but adequate by 9 (3%), inadequate by 36 (12%), highly inadequate by 45 (15%) as a majority 210 (70%) of the teachers indicated that the computers are not available. The use of presentations applications was not rated highly adequate or adequate but inadequate and highly inadequate by 45 (15%) as a majority 210 (70%) of the teachers indicated that the computers are not available.

The use of ICT content material was not rated adequate by 18 (6%), inadequate by 27 (9%), highly inadequate by 45 (15%) as a majority 210 (70%) of the teachers indicated that the computers are not available. The results show that in most schools most of the teachers indicated that computers are not available and in the schools with these ICT materials, the use was inadequate in most cases as noted by the

teachers who participated in the study. There was also need to ascertain the perception of teachers on the availability of technical support for teachers in knowledge and skills of use

of ICTs in classroom practices. The results are as indicated in figure 2.



**Figure 2:** Teacher's Views on Technical Support in Knowledge and Skills for ICT Integration

As indicated in figure 10, the availability of technical support for teachers in knowledge and skills of use of ICTs in classroom practices was noted highly adequate by 1%, adequate by 14%, inadequate by 29% and highly inadequate by 56%, most of the respondents who participated in the study. The results show that in most of schools that participated in this study, the ICT materials were not available and in the schools that had these ICTs tools, the level of technical support was inadequate or lacking. The study sought to ascertain the influence of the technical support on ICT integration in classroom practices among primary schools as perceived by teachers and heads who took part in the study. The results show that in most of the schools, which participated in the study, there was minimal and generally, a lack of technical infrastructure available to the teachers for integration of ICTs in classroom practices. These findings concur with those of Mureithi and Munyua (2016) in their study on "Making ICT work for the poor in Kenya". The study had noted earlier that Kenya being one of the developing countries lack the necessary resources and infrastructure for ICT integration in teaching and learning. For effective ICT integration in classroom instruction, computers are highly needed and the provision of technical skills for the actual ICT integration. The results of the study show that the integration of ICTs in classroom practices was little or non-existent in most schools as reported by the teachers and public primary school heads that were the respondents of the enquiries of this study. This was attributed mainly on the lack of the necessary technical support required for the use of this ICT tool in actual teaching and learning environments as it is in Pure Science Laboratories. There is therefore need for efforts by the education stakeholders to ensure that the teachers are provided with the requisite knowledge and skill set in ICTs for the integration of these tools in classroom practices. This may be crucial in the implementation of the Competent Based Curriculum in Kenya.

## 5. Discussion of Findings

The study sought to ascertain the type of technical support required to accomplish ICTs integration in curriculum

practices among primary schools. The results show that in most of the schools, the head teachers acknowledged that they do not encourage and support teachers to attend in-service ICT training for acquisition of the necessary technical skills. The computer software in their schools are not updated accordingly to ensure they are compatible with the syllabus requirements.

There are no technical personnel to assist whenever a problem arises with computers. That there is no alternative source of power in the school to avoid power inconveniences. There are no classrooms/laboratories equipped with computers. There is insufficient expertise/guidelines for helping teachers to use ICTs. That good software programs and skills/knowledge of using computer for instruction are lacking. There is therefore need to ensure adequacy of ICT technical support in schools if the benefits of ICTs are to be realized in instruction.

## 6. Conclusion

This study centred on influence of technical support on ICT integration in classroom practices at primary school classes in Bungoma County, Kenya. The potential of Information Communication Technology can only be realized if educators at all levels understand the issues facing them, define the role of information communication technologies in education, and plan for its appropriate use by classroom teachers. Teachers realize the incredible benefits ICTs would bring them alongside learners, and their desire to use ICTs in their classrooms would linger even with the multitude of challenges pitted against the implementation thereof. The challenges facing teachers in their initiative to use ICTs are vast and complicated and can be felt at both personal and professional level. Accordingly, they are expected to hone their technological skill set and knowledge and use ICTs in their classrooms. These pedagogical issues challenge teachers' approaches to teaching and learning and impacts traditional classroom practices. From the findings of the study, it can be concluded that the teacher, not the technology, is of central importance to the implementation of ICTs in curriculum practices in primary schools. Staff

development should have a curricular focus and help teachers to integrate (ICTs) technology into the curriculum.

The findings, discussions and implications of this study are an important ingredient to the adoption of ICTs in an educational context. It is hoped that this study has stimulated the thinking about the importance and methodology of professional development if any meaningful integration of the information communication technology within the realm of teaching and learning must be attained.

## 7. Recommendations

There is need for providing teachers with professional learning opportunities to enhance their capacity to fully utilize the opportunities presented using ICTs and to enable the use of ICTs in teaching and learning environments, including the modes in which ICTs could aid instruction and assessment practices among primary schools. Teacher training courses should equip an extra set of teachers with the required ICT knowledge and skills. Teacher training institutions including universities should enhance and improve on the training of teachers on ICT pedagogical skill. This should be made as a key course to be taken by all their trainees throughout their course.

## References

- [1] Adams & Swadner (2000): *Child and Youth Care Forum*, 29 (6) Journal Human Science Press, Inc. Arizona. USA.
- [2] Afshari,M.(2009). Factors Affecting Teachers' Use of ICT. *International Journal Instruction* ,2,Universiti Putra : Malaysia.
- [3] Aggarwal J.C(1995): *Essentials Educational Technology: Teaching Learning Innovations in Education*. NewDelthi:Vicas Publishing House TVT Ltd.
- [4] Andoh:A.C (2017):Factors Influencing teachers' adoption and integration of ICT :A Review of Literature.*International Journal of Education and Development using ICT (IJEDICT)* ,8, 136 -155.
- [5] Baylor, A.L, and Ritchie, D. (2002). `What factors facilitate teacher skill, teacher morale and perceived student learning in technology using classrooms?' computers and education: 39539.4-414
- [6] Creswell, J.W (2003) *Research design: qualitative, quantitative and mixed researches* (2nd Ed.) Beverly Hills, CA: Sage Publications.
- [7] Farrell, G. (2007). *Survey of ICT in Education in Kenya*. Washington, DC: infoDev / World Bank.
- [8] Foley, J. and Ojeda, C. (2007). How do teacher beliefs influence technology use in the classroom? A paper presented at the Society for Information Technology and Teacher Education *International Annual Conference, March 26-30, 2007, San Antonio, Texas, USA*
- [9] Katz, L. (2003a): The right of the child to develop and learn in quality environments. *International Journal of Early Childhood*, 35(1), 13-22.
- [10] Kothari, C.R (2009). *Research Methodology: Methods and Techniques*. New Delhi. Vishwa.
- [11] Kozma, R. B. (2005). National policies that connect ICT-based education reform to economic and social development. *An Interdisciplinary Journal on Humans in ICT Environments*, 1(2), 117-156.
- [12] Moon, B. (2007). *Research analysis: Attracting, developing and retaining effective teachers: A global overview of current policies and practices*. Paris: UNESCO.
- [13] Mureithi, M. and Munyua, W.A. (2006). Making ICT work for the poor in Kenya: *In search of an entry strategy framework Working draft Ver 4 mureithi@summitstrategies.co.ke*
- [14] Patti,S and Esther,M.W (2009). Kenya: *ICT in Education for a situational analysis*.Global e-schools and communities initiative. Gesci Capacity Audit tool, 2009
- [15] Pelgrim, E. H(2001): The effect of Teacher's skills and knowledge on innovations in teaching and learning. *Journal of Communication Technology*,12,46-62.
- [16] Polit D.F. & Beck C.T. (2010) *Essentials of Nursing Research: Apprasing Evidence for Nursing Practice*, 7th edition. Wolters Kluwer Health / Lippincott Wasiams& Wilkins, Philadelphia.
- [17] Ramsey, K, et al (2006): *Strengthening Learning and Teaching Using ICT*. University of Walkato.WilfMalcolm Institute of Educational Research
- [18] Republic of Kenya, (2005): Sessional Paper No. 1 of 2005. *A policy Framework for Education, Training and Research*. Nairobi: Government Printers.
- [19] Republic of Kenya, (2010): *Ministry of Education ICT guidelines for Educational Institutions.On Integration, Infrastructure and Acquisition*.By integration Team September 2010: MOEST.
- [20] Simiyu C. P, (2013): *Teacher Preparedness in the use of Instructional Resources in the Implementation of ECDE Curriculum in Kenya*, Unpublished M.Ed Thesis, MMUST.
- [21] Shiundu, J.S. and Omulando, S (1992) *Curriculum Theory and Practice in Kenya*, Oxford University Press, Nairobi.
- [22] UNESCO. (2001). UNESCO Report: *Teacher Education Through Distance Learning: Technology - Curriculum - Cost - Evaluation*. UNESCO.
- [23] UNESCO. (2002). *UNESCO Report: Information and Communication Technologies in Teacher Education, A Planning Guide*, Division of Higher Education, UNESCO.
- [24] Wanjala (2016): *Information Communication Technology Pedagogical Integration in Mathematics Instruction among Teachers in Secondary Schools in Kenya Journal of Education and Practice Vol.7, No.2, 2016, pp 66-73*
- [25] Wanjala, M. M. S., Khaemba, E. N., & Mukwa, C. (2011). Significant factors in professional staff development for the implementation of ICT education in secondary schools: A case of schools in Bungoma District. *International Journal of Curriculum and Instruction*, 1(1), 30 – 42.