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Influence of Information and Communication Technology on the Quality of Educational Management in Secondary Schools in Kakamega County, Kenya

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Abstract:

Kenya is among those countries that have adopted the use of Information and Communication Technologies (ICTs) as a vehicle for educational change and improvement. Use of ICTs is known for transforming the quality of management of educational institutions worldwide. The government has encouraged investment in ICTs through the provision of grants to selected secondary schools to acquire computers. Secondary schools in Kakamega County have been beneficiaries of these grants. However, information on how these ICTs have influenced educational management in schools remains unclear. The purpose of this study was to investigate the use of ICTs in Educational Management in public secondary schools in Kakamega County. The study was guided by Rodgers Diffusion and Innovation Theory. Descriptive survey research design was used for the study. The study population comprised of 360 Heads of Departments, 45 Principals and 45 Directors of Studies from 45 public secondary schools that had benefited from ICTs grant. Using Stratified, purposive and simple random sampling techniques, a representative sample of 161 respondents comprising of 23 Principals, 23 Directors of Studies and 115 Heads of Department (HODs) was selected to participate in the study. Three questionnaires, one for each category of respondents were used to collect data. Validity of the instruments was determined through expert judgment. Cronbach Alpha was used to estimate the reliability of the instruments. A coefficient alpha of 0.70 and above was acceptable thereby making research instrument reliable. Data was analysed using Statistical Package for Social Sciences (SPSS) version 20. Results showed that a variety of ICT facilities were used frequently mainly in the analysis of examination results, preparing of students mark sheets, generating report cards, revision materials and clerical work. The use of ICT in educational management had improved school operations, quality of services and made the schools more efficient while performing their tasks. As such it was agreed that ICT was beneficial in educational management. The study recommends that the government through its agencies intensify ICT in-service training to enhance their integration capacity in school management. Stakeholders should also put more effort towards improving and equipping schools with ICT facilities.

Keywords: Educational Management, ICT, Use of ICT

Educational Management – is the theory and practice of the organization and administration of existing educational establishment and systems.

Information Communication and Technology- refers to diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. These technologies include computers, the Internet, broad-casting technologies (radio and television), and telephony.

Influence – the power to change or affect someone or something to cause change.

Secondary school – refers to a high school or a school of corresponding grade, ranking between a primary school and a college or university.

Public Secondary school – refers to secondary schools that are formally supported by the government especially in terms of recruitment of teachers and provision of other teaching and learning resources.

1. Introduction

Dynamic and globalization has resulted to adoption and continually rely on technology for work done and education sector is no exception (Unachukwu & Nwankwo, 2012). The Rapid growth in the field of education has made governance in schools a very daunting and complex task. According to Menjo & Boit (2010), the use of ICT could make the task of educational management simpler. ICTs include technologies and methods for storing, managing and processing as well as communicating information. Salerno (2009) asserts that ICT tools have the capabilities such as capturing, processing, storing and displaying information besides increasing productivity and competitiveness through information provision.

Kavegi (2001) argue that the importance of ICT is widely recognized both in schools and at home. While agreeing with this, Zhao and Frank (2003) add that ICT has contributed greatly to educational management in schools worldwide due to its role in the effectiveness, efficiency and quality service delivery in schools. Administrative and managerial operations in educational institutions rely heavily on information management for decision making (Makhanu & Kamper, 2012). Unachukwu and Nwankwo (2012) argue that schools require information to manage three main components namely students', staff and general administration. ICT has tremendous potential to revolutionize the way information and knowledge is managed and communicated (Unachukwu & Nwankwo, 2012).

In the USA and Canada, the use of Information and Communication Technologies accounts for 85 percent of its use in schools' management (Bullock, 2004). Computers infiltrated into the American schools in the late 1970's and early 1980's as a result of calls for educational reforms based on understanding that education needed to resolve a previous unknown deficiency called "Computer Literacy". However, more importantly, computers were perceived in the U.S.A to have the potential to revolutionize school management as well as teaching and learning just as they revolutionized many other aspects of modern life in the country (Omondi, 2010). In addition, introduction of ICT into schools brought great expectations for educational improvement (Maki, 2008). Richardson (2008) observes that in 1990's alone the U.S.A spent 90 billion dollars on ICT in schools. This is because Information and Communication Technology is widely touted as not only being the backbone of modern school management, but an important catalyst for effective management and resource utilization (Pelgrum, 2001).

African countries are slowly integrating Information and communication technologies in the schools (Omondi, 2010). For example, the Ethiopian government provided 500 senior secondary schools with television broadcasting equipment as a way of enhancing the schools' ICT infrastructure. In South Africa, the government has mandated schools to create computer media and resource centres so that teachers can use Information and Communication Technologies in managing school tasks (Visscher (1998). In Botswana ICTs have changed management approaches as a principal in an office could multi-task and receive information from all corners of the school within a very short time (Benzie, 1995). On the other hand, Tanzania has only a few private secondary schools around urban settings, especially in Dares Salaam, that have access to ICTs.

Kenya is one of the African countries that have put considerable emphasis on ICTs in education to address the concerns of efficiency, effectiveness and quality service delivery (Kukali, 2010). Secondary schools in Kenya are increasingly becoming complex multidimensional organizations with lots of human, financial and physical resources. Management of such an array of resources is bound to overwhelm the abilities of today's principals if they are not aided in the performance of their duties by technology. These developments therefore dictate that schools modernize their tools of conducting business to enhance management and leadership effectiveness (Menjo & Boit, 2010).

The government of Kenya has made progress towards transformation of all educational institutions in the country to be ICT compliant as attested by the interest shown on ICT in the number of government policy documents (Republic of Kenya 2001, 2005). In 2005, the ministry of education developed a Kenya Education Sector Support Programme (KESSP) that highlighted ICT as one of the priority areas in educational management aimed at mainstreaming ICTs in school management (MOE, 2005). In 2006, Kenya developed an ICT policy aimed at improving the livelihood of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services (MOEST, 2005).

The last two decades have witnessed a lot of effort by the government of Kenya towards the realization of transforming all educational institutions in the country to be ICT compliant. Wanjala (2013) in her research on teachers' perceptions on the use of ICT in management observes that the government through the ministry of education had made great initiatives towards developing ICT infrastructure in secondary schools by providing grants for computer laboratories and provision of ICT facilities. Secondary schools in Kakamega County have been acquiring computers through purchase or donations since the 1990s. This has been enhanced by the government of Kenya through the economic stimulus program which was a pilot programme that targeted 45 schools in the County in 2011. The secondary schools were each given a grant of Kshs. 877,500 to purchase ICT equipment (MOEST, 2012). The grant was to assist schools to buy ICTs in order to improve schools' managerial efficiency and effectiveness thereby achieve their set goals, which had not been a priority in Kenyan schools (Menjo & Boit, 2010). In view of these efforts by the government of Kenya to embrace ICT in education, this study therefore seeks to investigate the use of ICT in educational management.

1.1. Statement of the Problem

The adoption and use of ICTs in educational management in developing countries remains elusive despite a decade of large scale investment in ICTs. Kenya Vision 2030, which is intended to make Kenya a middle level economy by lowering cost of doing business, improving quality of services provided, improving security and providing Kenyans with a friendly working environment, has placed ICT in schools at the center of achieving the vision. The Ministry of education has made remarkable initiatives towards this end by providing ICT equipment to five selected public secondary schools in every constituency in the country. Kakamega County benefited by having 45 selected public secondary schools receiving a grant of Kshs. 877500 for each school to purchase ICT

equipment in the year 2011 as a pilot project that would later be rolled out to all secondary schools in Kenya. These ICT facilities were intended to be used both for teaching / learning and in educational management in these counties. While the benefits of ICT in school management cannot be disputed, there is limited data on the use of these ICTs to facilitate school management in Kakamega County. This study was intended to provide information to fill this gap.

1.2. Purpose and objectives of the Study

The purpose of this study was to investigate the influence of the information communication technology in educational management in schools in Kakamega County, Kenya. The study also aimed at identifying challenges facing ICT implementation in educational management in public secondary schools in Kakamega County. Specific objectives of the study were to: establish the availability of ICTs in public secondary schools; determine teacher's ICT literacy levels in public secondary schools; determine the role-played ICTs in educational management in public secondary schools; assess perceptions on the influence of the use ICTs in educational management in public secondary schools and identify challenges facing ICT implementation in educational management in public secondary schools in Kakamega County.

1.3. Significance of the Study

The outcome of this research will provide new insights that would enable Ministry of Education to engage in more effective measures of ICT policy implementation which may include prioritizing and equipping managers with knowledge and skills necessary for successful ICT implementation. The findings of the research are likely to assist the Ministry to identify and consequently address some of the challenges that inhibit effective implementation of ICT in educational management. Additionally, the findings of the study may inform the Ministry of education of the need to provide more ICT grants for the purchase of more ICT facilities. The findings may also provide public secondary schools' administrators with information that would assist them lead the way for ICT implementation in educational management. This in turn would raise ICT profile in educational management in schools.

The study may help the future researchers to make references to this work with the aim of building more knowledge in the field of ICT and educational management. The study may further provoke scholars in the field of education to carry out more research on ICTs in schools or stimulate debate and search for solutions to challenges affecting ICTs policy implementation in public secondary schools in Kenya.

2. Research Methodology

Descriptive research design was adopted where respondents were asked to state the use of ICTs in school management. The study area was Kakamega as it has many secondary schools that benefited from government ICT grants. The study populations were 45 principals, 45 Directors of studies and 360 Heads of Departments. Simple random sampling technique was also used to pick 161 respondents who were stratified into three strata consisting of 23 principals, 23 Directors of Studies and 115 Heads of departments. The study used 3 sets of questionnaires to collect data from principals, DOS and HODs. Validity was determined by face and content validity while reliability was determined by Cronbach alpha with value greater than 0.7. Quantitative data was analyzed by use of percentages, frequencies and presented in form of table

3. Results and Discussion

Objective one set out to establish the availability of ICTs in public secondary school in Kakamega County. The results of the study revealed that all the principals, Directors of Studies and Heads of Departments indicated that their schools had desktop and laptop computers, computers labs or computer rooms, printers, LCD projection systems and internet facilities. These facilities were provided by Ministry of Education through Economic Stimulus Program in the year 2011 to be used in educational management and to facilitate teaching (MOE, 2011). Other facilities available in these schools is as shown in Table 1

3.1. Other ICT Facilities

Equipment	N = 127		Principals		DOS		HODs	
	f	%	f	%	f	%	f	%
Desktop computers	16	76	15	68	65	77		
Laptop computers	14	67	13	59	51	61		
Printers	15	71	16	73	63	75		
LCD Projectors	8	38	8	36	30	36		
Scanners	11	52	12	55	40	48		
Photocopy Machines	19	90.5	20	90.9	80	95		
Television sets	17	81	18	81.8	58	69		
Fax Machines	4	19	6	27.3	11	13.1		

Table 1: other ICTs facilities sourced by schools

From Table 1, all schools had acquired additional ICT equipment. Majority of respondents indicated that ICT facilities were either purchased by the school or received financial support to buy additional ICT facilities from various institutions, the biggest financiers being the school themselves through the schools' Board of Management (23.85%) followed by Computer for schools, Kenya (14.3%) and SMASSE (14.3%). This implied that there was partnership in supplementing government effort to equip schools with ICT facilities in Kakamega County. Kisirkoi (2015) argue that equipment which was provided by the Ministry of Education was not

enough and in some cases, it was only supplementary. Therefore, through fundraising with the aid of partnership with the community, the public and corporate sector, some schools had acquired additional ICT resources to increase availability. Maki (2008) argues that ICT infrastructure is a fundamental pre-requisite for ICT implementation in schools. Merireng (2013) agrees with this observation by arguing that the success of ICT integration in educational management heavily relies on availability of these resources. The Government provision of a limited number of these facilities was a first step towards ICT implementation in schools.

Majority of the respondents indicated that ICT facilities were located in a central place for easy access. A majority of respondents indicated that ICT facilities were housed in a computer laboratory or ICT room. This means that majority of the teachers' accessed ICT facilities in a central place possibly due to the limited number of computers, printers and photocopy machines since the school could not provide for every user. The location of some facilities in offices (26%) was driven by safety considerations and to minimize misuse hence intended to regulate and monitor their usage (MOE, 2011). The findings on this objective show that schools had achieved the first step in capacity building for ICT integration in management by acquiring the basic infrastructure. This included computers, networks and relevant software.

The second objective of the study sought to establish ICT literacy levels of teachers in public secondary schools in Kakamega County. Majority of the respondents indicated that they had acquired computer literacy through experience. This can be clearly seen from responses from the principals (71.4%), Directors of Studies (54.5%) and Heads of Department (41.7%). These categories of teachers who form top administrators in a school had no formal training in the use of ICTS in educational management. It would appear that majority of the teachers including principals did not receive any ICT training prior to joining the teaching professional. The pertinent results are as shown in Table 2

N = 127 Competence Level	Principals		DOS		HODs	
	f	%	f	%	f	%
Degree	1	4.8	3	13.6	14	16.7
Diploma	2	9.5	5	22.7	13	15.5
Certificate	3	14.3	2	9.1	22	26.2
Experience	15	71.4	12	54	35	41.7
Total	21	100	22	100	84	100

Table 2: Highest Level of Computer Literacy

When asked if other teachers in their schools had received ICT training, majority of the teachers (82.4%) had been trained in ICT and therefore had basic ICT literacy skills. The training was very short and insufficient for effective ICT applications in educational management as shown by 48% of principals, 54.5% by Directors of Studies and 72.6% by Heads of departments who received training for a maximum of two weeks.

This implies that a majority of the managers could be regarded as having basic ICT literacy skills as a result of this training. This is because it has already been revealed that a big segments of school managers gained competence outside formal training. Majority of the respondents indicated that MOE facilitated their training. This is clearly shown by the responses of principals (90.5%), Directors of Studies (59.1%) and Heads of Departments (61.9%). Other providers of training were school management and NGOs.

This finding shows that while different categories of teachers had some basic competence in ICT, it was not fully sufficient for educational management. ICT competence is important in promoting educational reforms and effective educational management as it supports the functionality of the use of ICT and its contribution to the effectiveness in educational management (Wanjala, 2013). Kidombo, Gauko and Kindachu (2011) argue that successful integration of ICT in education depends on professional training of teachers. The findings were in line with Kukali (2010) who found out that schools in Kenya lacked trained teachers in ICT, making the usage of ICT tools difficult. The findings were also consistent with Salerno (2009) who found out that most of the principals were reluctant to organize in-service training for teachers because they themselves were not competent in ICT use in arguing that it was for the new generation. This lowered their competence in using ICT tools for educational management (Unachukwu & Nwankwo, 2012). This third objective of the study was to determine how ICTs were used in educational management in public secondary schools in Kakamega County. The principals were required to indicate the tasks in their schools that were carried out using ICT. The results were as shown on Table 3.

Education task that use ICT	SA	A	U	D	SD
Generating timetables	20.1	22	14.3	25	18.6
Analysis of school examination results	61.9	38.1	0	0	0
Keeping students records	8.1	12	32.6	28.4	18.9
Tracking students' academic performance	21.3	30.1	9.5	29	10.1
Preparing of students marksheets	60.9	39.1	0	0	0
Preparing of students report cards	59.1	40.1	0	0	0
Mass communication with parents	9.5	38.1	9.5	33.3	9.5
Word processing (clerical work)	6.7	93.3	0	0	0
Keeping inventory records	8.1	9.5	11.0	52.4	19
Budgeting and maintaining financial records	9.5	13.6	15.0	19	42.9
Students registration	42.9	28.6	9.5	19	0
Maintain staff records	9.5	27.6	14.3	34	14.5
Monitoring teachers' class attendance	9.5	14.3	9.5	38.1	28.6

Table 3: Education tasks that use ICT

Table 3 shows that all the schools relied solely on ICT in carrying out the following functions: analysis of school examinations results, preparing of students mark sheets, preparing of students marksheets, preparing students report cards and clerical work. There was also greater use of ICT in carrying out students' registration (71.5%). These findings in Kakamega County agree with that of Makewa et al (2013) who found that principals and teachers only used ICT in examination processing such as setting, typing, recording and analyzing marks, processing results and preparing report cards. They add that administrators did not apply ICT as much in the remaining other areas namely: personnel, financial, general management and supervision of instruction. This implies low and unfulfilled promise of ICT in educational management (Mue, 2014). This is in agreement with Oloo (2009) findings that ICT use in secondary school is yet to pick up fully. It means ICT use in educational management is not yet fully-fledged even with the provision of the relevant infrastructure by the Government. This is because training of teachers was inadequate as discussed in this study. This means that a lot of tasks in educational management are still done manually therefore not benefitting from the innovative nature and enriching skills of ICT (Adu & Olatundun, 2013).

The Directors of Studies and Heads of Departments were required to indicate which tasks teachers used ICT facilities to perform in their schools. The results were as shown on Table 4:

Tasks Response	DOS		HOD	
	f	%	f	%
Generating timetables	4	18	10	12
Analysis of examinations results	22	100	78	92.9
Tracking students' academic performance	8	36	32	38
Keeping student records	7	32	25	30
Preparing of students mark sheets	22	100	80	95.2
Preparing of students report cards	22	100	84	100
Mass communication with parents	6	27	21	25

Table 4 : Teachers use of ICT facilities

Table 4 shows that majority of the teachers in the schools used ICT in carrying out the following functions: to prepare report cards (100%), analysis of examinations results (96.4%) and preparing of students mark sheets (96.2%). It is clear that the computer was used by the vast majority of the teachers in the schools on management tasks related to students' evaluation. Teachers only used ICT for ordinary tasks of entering marks in the computer, preparing report cards and analyzing and preparing examinations records which imply that ICT is quite under-utilized in educational management in Kakamega County Secondary schools. Administrators and teachers in the schools were versatile in the use of ICT in management as they used it in generating timetables, analysis of exams and maintenance of school records. The researcher further observes that such back up training which is part of school ICT policy is required in all schools if ICT has to be fully used in educational management.

Fifty one percent of the respondents used ICTs upto 3 days per week. However, 49% of respondents used ICT only once a week or not all. This percentage used may be attributed to inadequate skills and knowledge in using ICT in educational management. Those who used ICTs once a week and those who never used are almost the same in terms of percentages. This implies lukewarm use of ICT in schools. Only a half of Directors of Studies and Heads of Departments used computers in educational management. Except for analyzing exams, printing reports cards, preparing mark sheets and clerical work (MS- Word), there was little integration of ICTs in management. It appears also that many of the schools lacked clear policy or will to integrate ICT in school management. This may be arising from the lack of sufficient training, lack of encouragement from school management or technophobia. This is because where the principals were conversant with ICT they encouraged its use in many areas of education management (Gakuu & Kidombo, 2013). This underscores the importance of leadership in implementing change. This had affected the use of ICT in Kakamega County and as such, the technology was inadequately being used in educational management despite heavy ICT investment in schools by the Government.

From the findings, even though ICT tools in secondary schools were used in generating teaching and examination timetables as well as examination operations, it has grossly been neglected in other areas like keeping students and teachers' records, inventory management as well as communication using email facilities to education stakeholders. The findings are in agreement with Kidombo et al (2011) who reported that there was low use of ICT in the management of schools in Kenya as a result of poor and inadequate training in ICT, unfocused school leadership on ICT use, principals' low level of ICT skills and knowledge and lack of school ICT policy.

Merireng (2013) argues that despite the Kenya government's effort and willingness to promote ICT use in secondary schools by providing the needed infrastructure, progress on ICT front had fallen short of expectations. Etudor – Eyo, Ante and Emah (2002) argue that regardless of the amount of technology and its sophistication, technology will not be used unless teachers have the skills, knowledge and attitudes necessary to infuse it into the education management and curriculum implementation. While the Government through the Ministry of Education had plans to integrate ICT in educational management by training both administrators and teachers to learn file management, word processing, spread sheets, email and internet skills (MOEST, 2005), teachers also learned from one another how to obtain information from the web and customized it for use in their teaching.

The fourth objective of the study investigated the influence of the use of ICTs in educational management in public secondary schools in Kakamega County. Evidence shows that principals, Directors of Studies and Heads of Departments agreed that ICT improves the operations in a school related to management through increased efficiency, saving time and effort. The pertinent results are presented in Table 5

Statement	Principal		DOS		HOD	
	SA	A	SA	A	SA	A
Inadequate and poor training on ICT use	88.5	9.5	31.8	54.6	45.2	44
ICT benefits school management						
Schools would be better places with computers	87.3	9.5	39.4	50	15.5	75
ICT makes school management easier and efficient	81	9.5	59.0	41	61.9	34
ICT saves time and effort in school management	52.4	38.1	51.4	37.6	69	25
ICT reduces operational inefficiency	44.1	39.6	22.7	50	53.6	37

Table 5: Principals' perceptions on the impact of ICT use in school

The findings in comparison from the principals, Heads of departments and Directors of studies on two areas of strongly agree and agree indicated that ICT in school management had positive perceptions. In fact, all cadres of teachers indicated that it is vital to educational management and it made schools better places for both students and teachers. The findings agree with similar results in Jordan where teachers reported highly positive impact on ICT training on their attitude towards ICT use in educational management (Abuhmaid, 2011). The findings are consistent with (Omondi, 2010) who found that use of ICT in educational management for schools made daily administrative operations more efficient. Kukali (2010) also agreed with findings as she stated that ICT modernized school operations and enhanced effectiveness of management and leadership as it made administrative and office work easier. MOE (2012, 2011) and Kwanya (2009) also concurred with these findings by arguing that the use of ICT hastened the speed of communication within and between sections of an organization and reduced paperwork thereby, freeing principals and teachers from carrying out extraneous duties and concentrate on other important tasks of teaching and counseling.

The fifth objective of the study was to identify challenges facing successful implementation of ICT in public secondary schools. Majority of the principals lacked confidence in using ICT tools, lacked technical support and limited access to internet as a challenge. Lack of internet was a financial issue and schools could not afford to provide internet for use by teachers all the time. Majority of Directors of studies indicated that they lacked internet and technical support and as a result, exhibited lack of confidence in the use of ICT tools. Others were inadequate and poor training on ICT use and they had inadequate computer hardware and software. Majority of Heads of Departments over indicated that they lacked internet accessibility, lacked technical support and had received inadequate and poor training on ICT use. Other key challenges mentioned were inadequate computer hardware and software and limited support by school management and a result exhibited lack of confidence in the use of ICT tools. Pertinent results are as shown in Table 6.

Statement	Principal		DOS		HOD	
	SA	A	SA	A	SA	A
Inadequate and poor training on ICT use	28.6	57.1	22.7	50	23.9	58.3
Lack of technical support	19	61.9	36.4	40.9	38.1	49.3
Negative attitude towards computes in schools	19	28.6	13	40.9	33	30
Inadequate computer hardware and software	24.8	42.9	0	0	0	0
Computer use is cumbersome	9.5	9.5	35	39.5	29.8	40
Limited and unreliable supply of electricity	0	19	19	24	2.4	3.6
Limited access to the internet	38.4	49.1	4	23.4	2.4	13.6

Table 6

It is evident from the findings that lack of adequate computer facilities; inadequate training for teachers and lack of technical support as well as limited support by school management are serious challenges in the use of ICT in educational management. This resulted to low confidence among users as they did not interact with the facilities often. These findings were in agreement with the findings of Lau and Sim (2008) who found out that the main challenges affecting ICT adoption and use in developing countries, Kenya included, were inadequate training of teachers, lack of ICT infrastructure and lack of technical support. To successfully implement ICT in schools there should be comprehensive pre-service courses on ICT that equip teachers with required skills. Wanjala (2013) adds that many teachers' training institutions teach more about what is ICT rather than teaching how to use it in teaching and learning institutions teach more about what is ICT rather than teaching how to use it in teaching and learning and in management. He asserts that training in ICT use and technical support to teachers which should emphasize on its application as a tool in management are important for successful ICT facilities in the management of schools. Lack of technical support post serious challenge in the usage of ICT facilities in the management of schools as most teachers lacked the required knowledge and skills to use the facilities as required without assistance of a technical. Therefore, ICT usage take off was difficult in the absence of technicians to assist as back up to little training received by teachers.

Principal and Heads of Department were asked to suggest possible strategies to improve ICT use in educational management in public secondary schools in Kakamaga County. The results were as shown in Table 7:

Strategies	Principals		HOD	
	f	%	f	%
Enhanced teacher development in ICT through in-service courses	19	90.5	74	88
Fund raise to purchase more ICT tools and accessories	16	76	71	85
Creating awareness of opportunities offered by ICT in educational management	14	67	61	73
ICT literacy made compulsory for all teachers	17	81	58	69
Sharing of ICT infrastructure among the schools	15	71	63	75
Teacher colleges to train teacher trainees in ICT	20	95	81	96
Involve relevant stakeholders in financing ICT infrastructure in schools	18	86	63	75

Table 7: Strategies to improve ICT use

From Table 7, many respondents over 85% suggested that teacher development in ICT through training either by in-service or pre-service should be given fast priority and that stakeholders should provide the necessary infrastructure in schools. Besides, that ICT literacy should be made compulsory for all teachers. This implies that the respondents were eager to adopt and use ICT in educational management save for the challenges. They were keen on strategies that would alleviate the effects of challenges of ICT implementation. Training through seminars or conferences and during in-service courses did not give enough time for teachers to practice well with ICT tools hence the suggestions that teachers should be thoroughly trained both in colleges and on job. Making ICT skills compulsory for secondary school's teachers can successfully improve teacher ICT skills and knowledge. Suggestions put forth by respondents are indications that with proper training and acquisition of enough ICT facilities, teachers are willing to adopt and use ICT in educational management.

4. Conclusion

The study established that though the sampled schools had ICT facilities such as laptop and desktop computers, internet facilities acquired through economic stimulus programme schools had been able to acquire additional ICT facilities through donations and using their own resources. The level of ICT literacy was mainly acquired through experience and it was found less sufficient to effectively use these ICT facilities. Training conducted mainly by MOEST was done less frequently and the duration was inadequate. It was found that use of ICT was limited to few tasks in educational management. Majority of ICT use in educational management was in the areas of analysis of examinations results, preparation of students' mark sheets, generation of report cards and clerical work such as word processing. Use of ICT was perceived as beneficial, important and indispensable in educational management as it helped in meeting various needs of school managers in educational management and made their work more organized. Effective use of ICTs in educational management was challenged by inadequate and poor training in ICT use, lack of technical support, inadequate ICT hardware and software and limited access to the internet.

5. Recommendation

- i. To improve the quality of educational management in secondary schools the Ministry of Education, Science and Technology should increase investment in training of teachers on how to integrate ICT in educational management.
- ii. Since ICTs have positive influence on the educational management in schools, government should extend the same programme to include schools which were previously left out during phase one so that the whole education system in the country benefits from the use of ICT in educational management.
- iii. Teachers should be given sufficient training on how to integrate in educational management. Teacher training institutions should align their curriculum to this in order to provide teachers' trainees with skills and competences required for use of ICT in educational management.
- iv. Government and other stakeholders should mobilize resources for equipping schools with necessary ICT infrastructure. There should be recognition that considerable managerial improvement could take place while using ICT tools in educational management. Therefore, schools should acquire upto date ICT Infrastructure that teachers and administrators could train and learn with.
- v. To foster a positive attitude of teachers on use of ICT in educational management, there should be comprehensive in-service courses. In-service courses should be designed in a way that will enable all teachers to acquire ICT skills. Continuing professional development of teachers is central to successful implementation of ICT in schools. Teachers need examples of good practice and leadership from their school leaders (principals) and necessary time for professional development, in order to successfully implement ICT in schools. Their use of ICT by principals will have encouraging and commendable results on other teachers who may have a more unwilling attitude towards the technology, providing them a good encouragement to give a trial.

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