

The Role of Principals in Information and Communications Technology (ICT) Policy Formulation in Public Secondary Schools in Kenya

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Abstract

The appreciation of the role of Information Communications and Technology (ICT) in recent years has driven many countries and Institutions of learning in particular to adopting these developments with an aim to enhance effective instructional designs. Its usage has widely been linked to one of the key catalysts towards attainment of Millennium Development Goals (MDGs). Inclusion of key stakeholders in the formulation of policies that guide its implementation is therefore vital. This paper is an examination of the role played by Principals in ICT policy formulation in public secondary schools. To achieve this objective, the study employed a descriptive design sampling 211 public secondary schools from Meru County through stratified sampling technique. The study sample comprised of 335 teachers, selected through simple random sampling method and 211 Principals purposively selected. Data was collected by triangulation, which made use of interview schedule, questionnaire, and observation guide. The data collected was analyzed using descriptive statistics using frequencies and percentages. The authors found out that most schools lacked compressive ICT policy on the use of ICT in teaching and learning. Government need to escalate both in-service and pre-service training programmes of school heads on ICT pedagogical skills, as well as ensuring effective translation of ICT policy on education to school level.

Key words: ICT, Principals, School leadership, Curriculum, ICT Policy, Policy formulation.

Introduction

The world is becoming a global village coupled with information revolution; giving priority to building capacity for effective ICT utilization by nations is therefore inevitable (World Bank, 2007). Studies such as those by Hibert (2012) and Mutula (2004) show that sub-Saharan Africa compared with developed countries is lagging behind in ICT literacy, availability of relevant content, affordability and access. As Kearney and McGarr (2009) put it, ICT implementation depends on a school's positive communication regarding ICT. ICT policy development in Kenya lags behind those of Tanzania and Uganda because of regulatory control such as lack of focus and co-ordination in addressing ICT challenges and making use of existing opportunities especially in the last 10 years (Macharia, 2013). A good example is the switch from analogue to digital broadcasting in Kenya which faced with overwhelming challenges, only took place two years after

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her neighbouring countries. Whereas Tanzania implemented the process in 2013, Kenya's digital migration was done in 2015. In addition, other impediments to effective use of ICT include hasty implementation, limited in-service training for teachers, and inadequate ongoing professional support for teachers and inadequate resources (Macharia, 2013). However, a general analysis of the Kenyan situation indicates a tremendous progress made on ICT use in teaching and learning. This started with the national ICT policies on education and the development of human capacity and infrastructure. For example, in 2017/2018 budget, 550,555 million Kenyan shillings was allocated to infrastructure and ICT sector; in addition, various training agencies have incorporated ICT in their curriculum to prepare teachers on ICT in pedagogy.

Many studies including Lorsh (2012) and Margaret (2010) have pointed out that a school's ICT vision is essential to effective ICT integration. A clear and well-defined mission that captures the place of technology in education gives a place to start, a goal to react and act as guideposts. Teachers and schools must develop a vision before they make substantial investments in hardware and software (Moyle, 2006). Principals as one of the pedagogical leaders must be as fully informed about ICT, as are the teachers and other leaders (International Baccalaureate Organization, 2006). Instructional leadership is crucial in facilitating an all-inclusive environment allowing all stakeholders to assist in the creation of the vision by contributing their knowledge, skills, and positive attitude. This is because a clear vision of ICT use in school is the one that is shared by all members of the school community and that which promotes effective use of ICT in the classroom (Hallinger, 2005). Once the vision has successfully been created, instructional leadership will be required to articulate on ICT use plans, spelling out how the teachers are expected to integrate ICT in their lessons (Pan African Research Agenda, 2011). More importantly, instructional leadership ensures that the master plan is formulated according to a schools' vision and its socio-cultural setting assuring effective integration of ICT in class.

Instructional leadership leads in developing of policies in line with the ICT vision of the school. These policies, as pointed out by Niamh (2010), entail procurement policy, access and control policy, teaching policy, maintenance policy and education policy. According to Gurr, Drysdale, and Mumford (2006), instructional leaders who are visionary and inspirational can develop the same qualities in others. The instructional leader's vision of the possibilities of ICT in teaching and learning are realized through supporting and developing the skills of others. To perform the duties of an instructional leader effectively, the instructional leader's own role is very much involved in using ICT.

The success of a school is in the instructional leader's ability to effectively lead and develop change to create a learning community (Collarbone, 2003). A learning community has people working together with a common focus providing its members with identity, belongingness and involvement giving a sense of direction, order and meaning to the organization (Sergiovanni, 2003; Hartle & Hobby, 2003). Thus, involvement of all concerned stakeholders remains a key element in policy formulation.

As a learning community, students, teachers, and parents sharing ideas, values, and beliefs (Sergiovanni, 2003) bind schools together. A study by Pan African Research Agenda (2011) indicates that it is an ideal way of improving school outcomes. Instructional leadership and leading change require leaders to clearly communicate their intentions to teachers (Afshari, 2012). Leadership is critical in giving a directional drive to change. This is because in school, teachers need to know why and how ICT is being used a teaching and learning tool (Afshari, 2012).

As documented by various researchers, what happens in the classroom through the planned curriculum, the hidden curriculum or the null curriculum has a major effect on student in the immediate and long-term future (Bradley, 2004) of a school.

Methodology

To benefit from the strengths of both positivists and interpretivists, the authors based the study on pragmatism as opposed to what has been used by most researchers who adopted positivism and interpretivism paradigms. Positivists and interpretivists force researchers to fit in a strait jacket with no room of triangulating (Ayiro, 2012) making it a very restrictive approach. Therefore, great latitude to navigate enabled the authors to look at all possible issues pertaining to instructional leadership in ICT use in public secondary schools. Consequently, both qualitative and quantitative strands were encapsulated within an overall research design that guided the study as a whole as advanced by Creswell (2012). The study adopted a descriptive survey design. Data was collected on multiple cases from schools at diverse time. Descriptive design was found appropriate because according to Kothari (2004), it is concerned with describing, recording, and reporting conditions, as they exist.

This study was conducted in secondary schools within Meru County in Kenya which borders Isiolo County on the northern side, Nyeri County on the western side and Tharaka-Nithi County on the southern side. All public secondary schools in Meru County constituted the target population with the school Principals and teachers in public secondary schools making up the study respondents. Hence from information provided by Meru County Education Office (GoK, 2016), the target population was made up of; 308 Secondary schools with 308 Principals and 2443 Teachers as illustrated in Table 1.

Table 1. Study Population and Sample

School Category	School		Principals		Teachers	
	P	S	P	S	P	S
National	2	2	2	2	84	11
Extra-County	11	10	10	10	260	36
County	79	59	59	59	989	136
District	231	140	140	140	1110	152
Total	308	211	308	211	2443	335

Key: *P-population S-sample*

The selection of principals was done purposively because in each school there is only one principal. In addition, the principal is the chief executive of the school in charge of directing all the activities taking place in the school such as curriculum implementation. Furthermore, the principal is the internal quality and standards assurance officer in the school. National schools were also purposively selected because they were only two, a very small number statistically for sampling.

Stratified random sampling technique was used to select National, Extra-County Schools, County Schools, and s schools. To get the actual sample size of respondents in each category of school,

proportionate sampling was done so that the number of groups selected reflected the relative numbers in the population as a whole. Stratified random sampling technique was used because of the heterogeneous nature of schools in terms of resources. Random sampling gave each member of the target population a known and equal probability for selection while stratification increased the precision without increasing the sample size as Ayiro (2012) advices. Simple random sampling was done to select schools and teachers from each category of schools.

Therefore, 211 schools, 335 teachers and 211 principals were sampled. Teachers were selected because they are responsible for implementation of curriculum in school. Principals were selected because they are the lead teachers in school, and the internal quality and standard assurance officers in school.

The study used questionnaires for teachers and interview schedule for Principals to collect data, while observation guide were adopted to get first hand information on the availability and use of ICT in curriculum implementation. Quantitative data collected using questionnaires was analyzed by first coding and keying coded responses into the computer for analysis. The open-ended questions and data collected from the interviews were copied, characterized, and analyzed thematically. The edited data was then coded and analyzed using Statistical Package for Social Sciences (SPSS) and Ms Excel. Descriptive statistics (Frequency distribution, percentages, averages, and variability) were used to describe the data. This methodology is typical in descriptive research (Bryman, 2008). The qualitative data was supplemented with quantitative information.

Results and Discussion

There are scholars who argue that the primary role of instructional leadership is what happens in class and not concern with school matters outside the classroom. These scholars are pre-occupied with lesson processes such as lesson preparation, presentation and evaluation (Bradley, cited by Swan, 2010). They believe that, school leaders who focus on student achievement and instructional strategies have higher effect in school. Thus, they hold the view that what happens outside classes should not occupy instructional leader. Other scholars however hold the view that instructional leadership is intimately involved in what takes place in class and outside the class. Hence, what happens outside the class has direct bearing on what comes out of the class (International Baccalaureate Organization, 2007). This paper sought to evaluate the principals' role in formulation of ICT policy to enhance use of ICT in curriculum implementation. To be able to decipher more information the authors carried out an investigation under the following sub-themes:

ICT Policy on Teaching and Learning

The results generated from interviews conducted with the principals showed that a significant number of them had not initiated any policy on the use of ICT in curriculum implementation. However, a small number of principals had developed a policy on the use of ICT in teaching and learning. This is similar to the findings in a study conducted by Murithi, Gitonga and Kimathi (2013), which indicated that, schools inability to develop an ICT policy has led to the maintenance of status quo whereby the old traditional method of teaching continue to be the dominant method used in teaching. This implies that secondary schools in Meru have long way to go before integration of ICT in education. This is because without an ICT policy on teaching, schools cannot actualize its integration unless it is forced on them.

ICT Policy on Procurement

Similar results were found out on other areas that require development of a school policy on the use of ICT. For instance, most principals had no policy on procurement with a paltry number of doing much to develop a policy. Without procurement policy, schools cannot successfully implement their ICT policies in teaching. However, with procurement policy in place, schools are at a better position to lobby and seek support in provision of required ICT resources to use in curriculum implementation. Schools without a clear policy on procurement of ICT resources exposes them to potential lose, such as exploitation, buying of useless or incompatible ICT materials among others.

Policy on Safety and Security

Results from interview with principals indicated that virtually no schools have formulated policies on safety and security in using ICT in teaching. This implies that schools are vulnerable to suffering losses arising from potential failures of abiding to copy rights and plagiarism. This is in addition to harmful unregulated use of ICT by students like the effects of visiting websites which are harmful to their wellbeing.

Policy on Repair and Maintenance of ICT Facilities

A significant number of principals had no policy on repair and maintenance of ICT materials. This implies teachers' lack of incentives to use ICT in teaching. It was illustrated by teachers that they get demotivated to use ICT in teaching and learning when ICT facilities keep on breaking down or are unreliable. Therefore, Principals need to do more to ensure contingency measures are in place in order to boost the confidence of teachers to use ICT in teaching. The best way to do this is to have a policy in place on repair and maintenance.

Policy on the vision in Using ICT

Vision provides direction for an institution. Majority of the principals had not developed any policy on the vision of their schools concerning the role of ICT in the school. This implies that schools in Meru are heading to uncertain direction on the use of ICT in teaching. This is because without a vision, the schools have no clear picture as far as use of ICT in curriculum implementation is concerned. It is incumbent upon Principals of Meru County schools to offer instructional leadership by drawing up school vision on the role of ICT in teaching and learning. For instance, as argued by Charalambous and Papaioannou (2011), with clear vision external factors do not matter because if Principals have clear mission about ICT in teaching, they will concentrate their effort in achieving their goals through a well-executed plan of action. Such Principals will not only look at how much they get from Ministry of Education but how much they can afford to raise even from other sources.

Policy on Job Descriptions for the Various Cadres in School

Virtually in all schools visited, principals confessed that there were no policy formulations on job description of various cadres in their schools. This implies there is no person accountable to the success or failure of using ICT in teaching. This is an indicator of a failure to offer instructional leadership. As various researchers have indicated, it is important for Principals to appoint someone in charge of ICT integration in school. Therefore, the Principal need not to be necessarily an expert in ICT but can designate one teacher who is an expert in ICT pedagogy in the school to offer overall supervisory role of ensuring ICT is used effectively in teaching and learning.

Policy on Goal Attainment in ICT

The findings of the study from Principals' interviews were clear that most of them had no policy on ICT in curriculum implementation that focused on school performance expected from integration of ICT skills. From observation, the authors could not establish any policy document, writing, or posters displayed on the notice board or classes spelling out the school policy on the role of ICT in schools.

One principal in county school (CS45) had the following to say in relation to formulation of policies in the use of ICT in curriculum implementation:

Having ICT policy or ICT infrastructure to me is not a priority. My concern now is to see to it that the school has enough basic facilities like laboratories and classes (Personal Communication, Principal, CS45).

This is a clear indication that majority of principals did neither clearly understand the role of school ICT policy in enhancing the use of ICT in curriculum implementation nor did they understand or appreciate the relationship between Government ICT policy on education and school ICT policy on education. Most principals believe that ICT integration is achieved by introduction of computer studies and computer laboratory.

The study also sought teachers' views using questionnaires on leadership role of principals in formulating policies geared towards enhancing use of ICT in curriculum implementation. The teachers were expected to respond to the statement using a five-point scale of: SD=strongly disagree, D=disagree, U=undecided, A=agree, SA=strongly agree. Results of the findings are as shown in Table 2.

Table 2. Teachers' Responses on the Principals' Leadership Role in Policy Formulation (N=335)

Constructs	SD	D	U	A	SA
Principal has formulated an ICT policy on curriculum implementation	24.8	36.4	17.6	14.3	6.9
Principal has formulated an ICT policy on procurement of ICT materials	24.2	29	28.7	11	7.2
Principal has formulated an ICT policy safety and security on usage of ICT in teaching and learning	21.5	19.1	20.6	25.1	13.7
Principal has formulated an ICT policy on repair and maintenance of ICT materials	19.4	21.2	20.9	28.1	10.4
Principal has provided an ICT policy copyright and plagiarism during the use of ICT in teaching and learning	35.2	24.2	19.4	15.2	6.0
Principal has formulated an ICT policy concern school vision for ICT in pedagogy	24.5	30.7	22.1	16.7	6.0
Principal has formulated an ICT policy on the goals to be attained by teachers when using ICT in curriculum implementation	26	39.4	20.6	9.3	4.8

As indicated in Table 2, analysis of responses gathered from teachers using questionnaire revealed that cumulatively majority (61.2%) of teachers believe that their principals have not formulated any policy to guide in the use of ICT on curriculum implementation. A paltry 6.9% of teachers strongly agree that their principals have formulated ICT policy to guide in the use of ICT in curriculum implementation.

This finding is similar to Kidombo, Gakau, and Nderitu (2013) who assert that while private schools seem to have a clear policy on ICT integration, public schools have none. The findings are also similar to Minae (2014) who laments that although the Government has invested heavily on the development of ICT integration policies at the national level, the same has not properly and proportionately been cascaded to secondary schools. Similarly, Tondeur *et al.* (2008) had established lack of ICT policy in many schools and stated in their study that, only 12 out of the 53 principals reported availability of a comprehensive ICT plan with clear goals and means to realize the goals. Additionally, most teachers (53.2%) reported that their principals have not formulated any policy to manage the acquisition of ICT materials and facilities. At least 48.8% of teachers stated that their principals have not come up with a policy to give direction on the issues of safety and security when using ICT in curriculum implementation while 40.6% of teachers indicated that their principals have not put in place any policy on safety and security pertaining to the use of ICT in teaching. On the same breath, 40.6% of teachers stated that their principals have not formulated any policy on repair and maintenance of ICT facilities while almost equal number of teachers (38.5%) gave a contrary opinion that their principals have developed ICT policy on the same issue. On issues of copyright and plagiarism, majority of teachers (59.4%) also reported that their principals have not framed any policy capturing.

A significant number of teachers reported that, their Principals have not prepared any policy on the school vision expected to be achieved on using ICT in curriculum implementation at 55.2% that's when respondents for strongly disagree (24.5%) and disagree (30.7%) are added respectively and in addition 65.4% of respondents that is when figures for those who strongly disagree (26% and disagree (39.4%) are added respectively shows that principals have not outlined goals on ICT use in teaching as indicated in table 2. The findings are similar to Tondeur *et al* (2008); whose study reported that the impact on development of school policy on ICT is rather limited. Secondary schools in Meru County are not providing instructional leadership in formulating ICT policy to enhance its use and those schools are generally not using ICT in curriculum implementation.

Without a clear policy on ICT, chances of success in the integration of ICT will be minimal. This implies that schools do not have a clear picture of what the future role of ICT in education is. It also means the Country ICT policy of education has not yet translated into tangible result in public secondary schools in Meru County. Therefore, a lot is needed to be done in the county because lack of policy means that schools will continue to maintain the status quo and continue to teach using traditional methods.

ICT is key pillar in the realization of vision 2030 the government needs to ensure that ICT policy in education is implemented. Otherwise, it will encounter set back in its effort to realize vision 2030. Lack of ICT policy implies that, schools are yet to understand the relationship between ICT policy and instruction. This also implies resources are not adequately allocated to ICT because they must be aligned to policies. Therefore, since ICT policy precede ICT integration, it means schools in Meru county need to do more to ensure all schools have ICT policies put in place. This helps to

explain why integration of ICT use in the county is low. As Lorsh (2012) and Margaret (2010) have stated, school vision is essential to effective ICT integration.

Policy enables the Principals to identify the type of interventions to give in a school concerning ICT in curriculum implementation. A policy also helps in prudent utilization of ICT resources. Miima (2014) states that policy is a guide against exploitation, and helps in allocation of resources in accordance with the school needs.

As pointed out, a number of studies have revealed that based on varying school factors, ICT is available in some schools and hardly available in others (Baylor & Ritchie, 2002; Tang & Ang, 2002). Among the factors is the school policy because as illustrated by Tondeur *et al.* (2008) the aspirations of national educational authorities to foster ICT integration in schools do not easily result in concrete changes in instructional practices at class level. ICT policy will be able to influence practice only if teachers share the values expressed within a school-related policy and understand their implication (Kennewell, Parkinson, & Tanner, 2000).

Implication to Research and Practice

The Kenya Institute of Curriculum Development (KICD) has rolled digital curriculums in all subjects with expectations that schools are ready to use the ICT platform in teaching (Ratemo, 2009). Thus, this study is necessary to establish whether principals are leading in encouraging this needful implementation. The 21st century learners have been born and grown up in ecosystem surrounded and highly influenced by technology, therefore, their survival and success is dependent on their ability to use and manipulate technology. This aims to make policy makers, Principals in particular, aware of the important role they play in facilitating instructional leadership in the integration of ICT in the teaching learning process. It is an inspiration to Principals who would like to provide instructional leadership on the use of ICT in curriculum by displaying the most valuable lessons and practices emerging from the research.

Conclusion

The Principal instructional leadership role in formulating ICT policies to enhance the use of ICT in curriculum implementation in public secondary school in Meru County is insignificant. Principals' instructional leadership is a key in internalization of school mission and vision on the role of ICT in curriculum implementation. Teachers are however not well informed by the leadership on the role of ICT in teaching and learning and are left on their own as far as ICT role in curriculum implementation is concerned. The place of ICT in education in 21st century is well known. It is indisputable fact that for country to position itself at a vantage in competing for knowledge-based economy it must integrate ICT in all spheres of life, the entry point being education. Since instructional leadership is wanting, more should be done to increase pedagogical, leadership and ICT skills of school principals so that they can help in enhancing the use of ICT in curriculum implementation like having regular training for principals on ICT in education.

Recommendation

Principals need to ensure ICT is used both inside and outside classroom for teaching and learning in all subjects and not only computer studies. Heads of school need to designate an ICT resource teacher for the school. Such teachers need to be proficient in ICT pedagogical skills so that, the teacher can help and support other teachers in using ICT in curriculum implementation. This can

only be made possible with a policy document in place which all School Principals are advised to formulate.

Future Research

There is need to carry out a similar study in private secondary schools so that comparisons can be drawn.

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