

Status of Integration of ICT in Internal Communication in Public Secondary Schools in Kenya: A Comparative Study of Boarding and Day Secondary Schools in the South Rift Region, Kenya

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ABSTRACT: The increasing complexity of the world in the contemporary times requires schools to embrace use of technology in performing their functions. In response to the globalization and internationalization of education, schools are earnestly striving to integrate information communication technology (ICT) and digitalization in executing their myriad functions especially communication. ICT is one of the most fundamental 21st century skill. However, despite the heavy investment and fundamental value of ICT in infusing efficiency and effectiveness in managing institutional enterprises, its integration in communication has been limited in a vast majority of public secondary schools in the South Rift Region in Kenya. The purpose of this study was to evaluate the integration of ICT in internal communication in public secondary schools in the South Rift Region in Kenya. The study was guided by the following objectives, which were to; assess the application of ICT in internal communication in public secondary schools and compare the ICT application in internal communication in public secondary schools in the South Rift Region in Kenya. The target population for the study comprised of all the 141 teachers in public secondary schools in the South Rift Region of Kenya enrolled in the Strengthening of Mathematics and Science in Secondary Education (SMASSE) program. The study employed the census technique since the target population was small hence manageable. Data was collected using the questionnaire and analyzed using descriptive and inferential statistics. It was hypothesized that there was no statistically significant difference in ICT application in communication in boarding, day and boarding and the purely day public secondary schools. To test this hypothesis, one way Analysis of Variance (ANOVA) was computed, which yielded p-value = .000 which was less than the alpha value $\alpha > 0.05$ indicating that the differences in ICT application in communication in the three categories of school was statistically significant. Thus the null hypothesis was rejected. It was concluded that the ICT application in boarding, day and boarding, and the purely day secondary schools was significantly different. The study further established that public secondary schools in the South Rift Region only marginally applied ICT in their official communication. The study revealed that boarding secondary schools had higher ICT applications in communication, followed by day and boarding secondary schools while the purely day secondary schools had the lowest. It is concluded that schools in the south rift region in Kenya have a low level of ICT application. From the study, we recommend the need to promote ICT application in all school categories especially the day secondary schools. This implies the need to conduct sensitization to all stakeholders in education with the objective of strengthening the provision of ICT infrastructure and training of personnel for schools.

KEY WORDS: *Digitalization, information communication technology, ICT application, 21st Century skills.*

I INTRODUCTION

Communication in educational institutions is dynamically changing in light of the global technological revolution that is increasingly defining the changing nature of work, through innovations in information technology in the contemporary times. Information Communication Technology (ICT) literacy skills is deemed a fundamental 21st century form of literacy. The communication of information via digital technology is considered as important as was the reading and writing in the past centuries (Katz, 2008). Cotton (2001) argues that schools progressively embrace (ICT) to relay information to stakeholders for prompt and effective running of institutions. Steyn and Kamper (2001) report that the increasing complexity in the contemporary world requires schools to embrace modern approaches to communication. In response to this complexity there is need to critically address the challenge that comes with the issue of the information age. Wang and Woo (2007) aver that the ICT integration in educational institutions is not a new concept and it may be as old as other

technologies such as radios or televisions. However, the swift growth of emerging technology such as web technology, ICT integration has increasingly attracted the attention of educators. The integration of ICT can help teachers and students to improve and develop the quality of education by providing curricular support in difficult subject areas (Gulbahar & Guven, 2008).

Brennen (2007) argues that in order to accomplish the mission, goals and objectives of a school, principals must integrate ICT in the three facets of administrative practice, which include administration, management and leadership. This is supported by Volman, Van Eck, Heemskerk and Kuiper (2005) who asserts that in the new millennium, an increasing number of countries around the world have been promoting explicit national policies such as the incorporation of ICT into their educational systems, installing computer networks in schools, connecting them to the internet and integrating ICT in all pedagogical and management functions of educational institutions. Special attention has been granted to the process of diffusion of innovative ICT practices in all aspects of school life, including the curriculum delivery and administration (Baruch & Mioduser, 2005). Fired by these global practices, the study is sought to assess ICT integration in internal communication in public secondary schools in Kenya.

ICT is harnessed by administrative staff to perform their daily functions effectively and efficiently. Administrative staff uses different types of applications to manage financial functions, transact communication, keep records, process documents and collect data (Kawade, 2012). There are lots of ICT application tools that have been vastly used in communication in schools. These include internet, websites, email, Instagram, WhatsApp, SMS, among others (Kazi, 2012). Internet is the most dominant enabler toward better, faster and cheaper approach in operating administration and management daily tasks such as information processing, information transferring, information storing and information retrieving (Susmita, 2007). Schools administrators are required to pay more attention to knowledge and information access on the Internet-based educational applications and tools to all academic and non-academic staff.

The government of Kenya demonstrated its commitment to ensuring ICT integration in education through the formulation and implementation of the National Information and Communication Technology (NICT) policy which acknowledges an ICT literate workforce for knowledge based economy (MOE 2005). The government has therefore made education the natural platform for equipping the nation with ICT skills. The intention is to start with the transformation of school leaders as well as teachers to enable them embrace ICT as an integral component in school management as well as a tool for teachers in work planning, teaching and learning. The government of Kenya appreciates and recognizes that an ICT literate workforce is the foundation on which the status of a knowledge economy can be realized (Republic of Kenya, 2006). The government is therefore desirous to making education the natural platform for equipping the nation with ICT skills through formulation of a national ICT policy (Republic of Kenya, 2006). Notwithstanding this, it is regrettable though that despite the Kenyan government taking several steps toward realization of transforming all education institutions in the country to be ICT compliant, much emphasis has been laid on the pedagogical aspect at the expense of managerial and administrative domain. Ahmad (2010) lament that many school leaders have not been prepared for their new role as technology leaders. The situation has led to school leaders struggling to develop both the human and technical resources to achieve ICT outcomes in their schools. Very few principals have used computers in meaningful ways with learners since they lack the requisite pedagogical vision and experience to guide teachers. The advent of ICT integration in the Kenyan school curriculum came at a time when most education administrators in secondary schools were reluctant, ignorant and technophobic in embracing the new technology.

Despite the widespread acknowledgement that ICT integration in running schools injects efficiency in the school system; studies focusing on incorporation of ICT in communication channels in schools are limited. This study focused on ICT integration in communication channels in public secondary schools in the south rift region in Kenya. More particularly, it examined ICT integration in boarding, day and boarding and the purely day secondary schools.

II. STATEMENT OF THE PROBLEM

The Government of Kenya has invested heavily in ICT to improve the running of public secondary schools in the country. However, despite the acclaimed positive effects of ICT coupled with the heavy investment in the provision of ICT infrastructure, equipment and professional development in schools, ICT integration in communication has been limited in majority of public secondary schools in the South Rift Region in Kenya. Few schools regularly use ICT in their communication channels and the impact of ICT on communication is rather limited. This represents a gap in knowledge that this study sought to address by assessing the extent of integration of ICT in internal communication in public secondary schools in the South Rift Region in Kenya.

Objectives

The study was based on the following objectives;

- i) Assess the application of ICT in internal communication in public secondary schools in the South Rift Region in Kenya.
- ii) compare ICT application in internal communication in public secondary schools in the South Rift Region in Kenya

Hypothesis

The study tested the following null hypothesis;

Ho1: There is no statistically significant difference in application of ICT in communication in day and boarding public secondary schools in the South Rift Region in Kenya.

III. METHODOLOGY

The study adopted the descriptive survey research design. The target population for the study comprised of all the 141 teachers in public secondary schools in the South Rift Region of Kenya enrolled in the Strengthening of Mathematics and Science in Secondary Education (SMASSE) program. The study employed the census technique since the target population was small hence manageable. Consequently, all the teachers were included in the study. This technique was appropriate because a complete count of the universe where each and every unit of the population is included in the study provides accurate and highly dependable findings. According to Surbhi (2016), census refers to a procedure of gathering, recording and analyzing information regarding all members of the population. Australian Bureau of Statistics (2013) observes that census technique provides a true measure of the population (no sampling error), and captures detailed information about small sub-groups within the population which maybe unlikely to be available. Thus, the technique was considered very appropriate for the study since it yielded dependable data that generalizable to the rest of the nation.

Table 1: Population and Sample Size

	Type of School	No. of Schools	No. of Teachers Accessed
1.	Day	41	85
2.	Boarding	24	47
3.	Day and Boarding	4	9
	Total	69	141

Results and Discussion

The results and discussion of the findings are presented in accordance with the objectives and hypothesis of the study as follows;

- a) The first objective sought to assess the application of ICT in internal communication in public secondary schools in the South Rift Region in Kenya. In order to execute this objective, respondents were required to provide feedback to seven items contained in a four point Likert scale ranging from strongly disagree (1), disagree (2), agree (3) and strongly agree (4). The scores obtained were used to compute a mean score and a standard deviation for each statement and a global mean score for the application of ICT in communication in schools. Table 2 provides a summary of the findings.

Table 2: ICT application in Communication in Public Secondary Schools

	SA	A	D	SD	n	\bar{x}	s
1. Teachers send assignment to learners using ICT	4	37	18	10	69	2.49	.82
2. Interdepartmental communication is done using ICT	1	20	28	19	68	2.96	.80
3. Results are released to students/parents using ICT	11	34	15	7	67	2.27	.86
4. Teachers give electronic resource materials	0	24	30	14	68	2.85	.74
5. Students access electronic instructional resources	2	24	28	15	69	2.81	.81
6. BoM transact information to school using ICT	2	15	35	17	69	2.97	.77
7. ICT skills are requisite for employment in schools	3	16	35	15	69	2.90	.79
Aggregate mean score = 2.7498, Std. Deviation = .56150							

Results from the analyzed data presented in Table 2 indicates that on whether teachers prepared lessons integrating ICT the mean score and standard deviation obtained were ($\bar{x}=2.49$, $s=.82$) respectively. The computed mean score and standard deviation on interdepartmental communication done using ICT were ($\bar{x}=2.96$, $s=.80$). Results are released to students/parents using ICT ($\bar{x}=2.27$, $s=.86$). Teachers give electronic resource materials ($\bar{x}=2.86$, $s=.74$). Students access electronic instructional resources ($\bar{x}=2.81$, $s=.81$). BoM

transact their activities using ICT ($\bar{x}=2.97, s=.77$). ICT skills are requisite for employment in schools ($\bar{x}=2.90, s=.79$). The computed global mean score on application of ICT in communication in public secondary schools in the South Rift Region of Kenya was 2.7498 with a standard deviation of .56150. The findings of the study indicate that public secondary schools in the South Rift Region only marginally applied ICT in their official communication. These findings concur with Zhao and Frank (2003) who asserted that though ICT has significantly contributed to educational management in schools worldwide, Kenyan schools barely use ICTs to manage the quality of output, to raise teacher, or to reduce costs through prudent spending. The slow pace of acceptance of ICT despite its renowned potential for use in educational management in schools has been attributed to a myriad challenges facing most schools. Becta (2004) observes that most schools in Kenya have only adopted computers as technical subject and not integrated its use in the communication and management practices. As such, a more holistic approach requires that schools be receptive and open to ICT and incorporate changes for the schools' purposes. Becta (2004) adds that in countries such as Botswana, Namibia and South Africa investments in ICTs in education management in schools has been proved to have a significant systemic impact on school management.

b) The second research objective compared the application of ICT in internal communication in day and boarding secondary schools in the South Rift Region in Kenya. Respondents were provided with seven statements contained in a five point Likert scale ranging from Strongly Disagree (1), Disagree (2), Not Sure (3), Agree (4) and Strongly Agree (5). The responses obtained were used to compute a mean score on a scale of 1 to 5, and a standard deviation in respect to the three school categories. The findings are presented in Table 3.

Table 3: Mean of ICT Applications in Communication according to School Category

School Nature	Mean (\bar{x})	Standard Deviation	n
1. Day	1.68	.33	41
2. Boarding	2.23	.23	24
3. Day and Boarding	1.85	.25	4

The findings of the study shown in Table 3 indicate that boarding secondary schools had the highest ICT applications from the three schools categories with a mean score of ($\bar{x} = 2.23, s = .23$), schools that had both day and boarding facilities were second where ($\bar{x} = 1.85, s = .25$) while the purely day secondary schools came last with ($\bar{x} = 1.68, s = .33$). These results revealed that boarding secondary schools had higher ICT application in communication, followed by those with both day and boarding facilities while the purely day secondary schools had the lowest level of application. However, ICT applications were generally low in the three categories of schools. The study revealed that despite the apparent expected benefits of the use of ICT in schools, many schools had not embraced the technology. Such a situation deprives learners and the school community the opportunity of accessing the immense value and benefits of ICT in education. Manduku, Kosgey and Sang (2012) concurs with this view and adds that though the current global technology changes puts emphasis on digitalization and modernization of all sectors including schools, actualization of integration of ICT in public day secondary schools has remained elusive. This is probably due to the fact that most of such schools are not connected to electricity grid, have no capacity to buy the required infrastructure, and has school leaders and teachers who are either computer illiterate or technology ignorant.

Hypothesis

In order to establish whether significant statistical differences existed in the application of ICT in communication in the three categories of schools, the null hypothesis was tested. The stated null hypothesis was that there is no statistically significant difference in ICT application in communication in day and boarding public secondary schools in the South Rift Region in Kenya.

To test this hypothesis, one way Analysis of Variance (ANOVA) was computed. The results of the statistical differences in ICT application in communication from the boarding, day and boarding and the purely day secondary schools is presented in Table 4.

Table 4: ANOVA Results of ICT application in Communication

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.452	2	2.226	25.991	.000

Within Groups	5.653	66	.086		
Total	10.106	68			

Results of computation of the one way Analysis of Variance presented in table 4 yielded p-value = .000 which was less than the alpha value $\alpha > 0.05$. The results indicate that the differences in ICT application in communication in the three school categories were statistically significant. Therefore, the null hypothesis was rejected. It was concluded that the application of ICT in boarding, day and boarding and the purely day secondary schools were significantly different. UNESCO (2001) agrees with this view and strongly stresses the importance ICT integration. The process of integration should involve educational hardware, distributional networks, collaborative environments and strategic planning processes. ICT integration requires heavy capital investment. Since day secondary schools are poorly funded, they are unlikely to have adequate resources required for infrastructural development upon which ICT is anchored. This could be among the variables contributing to differences in ICT integration in different school categories.

IV. CONCLUSION

The study established that public secondary schools in the South Rift Region only marginally applied ICT in their official communication. The study further revealed that boarding secondary schools had higher applications of ICT in communication, followed by schools with both day and boarding facilities while the purely day secondary schools had the lowest level of application. However, the application of computer applications was generally low in the three school categories. The study also found out that despite the apparent benefits of the use of ICT in schools, many schools had not embraced the technology hence depriving the learners and school communities the great benefits and value expected from adoption of digitalization.

Recommendation

The study recommends the need to promote the use of ICT in all school categories and in particular the day secondary schools. This implies the need to upscale sensitization of all stakeholders, provision of ICT infrastructure and training of personnel for schools in the country..

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