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ICT in secondary school administration in rural southern Kenya: An educator's eye on its importance and use

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ABSTRACT

This study investigated whether there was a significant difference between teachers' and administrators' perceptions on the importance of Information and Communications Technologies (ICT) in secondary school administration and evaluated the extent to which it was used by administrators. In this study, administrators are those involved in the day to day running of secondary school duties such as: the principal, deputy principal and heads of departments. The researchers used a descriptive-comparative research design to obtain information on the current status of ICT. The t-test was used to establish whether there was any significant difference in perceptions while a Pearson product-moment correlation coefficient was used to find whether there was any significant relationship between educators' perceptions of the importance and extent of ICT use in secondary school administration. Both teachers and administrators rated the use of ICT in secondary school administration as important. Teachers and administrators viewed the use of ICT in student administration as equally important. Administrators rated the importance of using ICT in supervision of instruction and in student administration more highly. There was a significant difference between the perceptions of teachers and administrators on the importance of ICT use in the following areas of secondary school administration: student administration, general administration and supervision of instruction.

Keywords*: Information; Communication; Technology; Educators; administrators*

INTRODUCTION

School administration is a key determinant for the realization of desired outcomes and success in both public and private schools hence is seen as critical by all stakeholders. Gray and Smith (2007) observe that the twenty-first century principal administrator faces numerous challenges emanating from the technology. Information and Communication Technologies (ICT) are increasingly used and viewed as important in all spheres of operation including education. This requires effective and dynamic school administration. (In this study, *Information and Communication Technologies,* ICT, refers to technologies that provide access to information through telecommunications in general but specifically to computers.)

Consequently, Whitehead, Jensen, and Boschee (2003) are concerned that "the current movement toward putting the latest technology into classrooms is causing educators to reassess school programs and policies and to examine the impact computers and other data-processing equipment are having on teaching and learning" (p. 3).

Due to these rapid changes, administrators and other educators globally are compelled to carefully analyse the academic and social needs of their students. Maki (2008) stipulates that ICT plays a vital role in supporting powerful, efficient management and administration in the education sector: technology can be used from student administration (i.e., students' record) to various resource administration in an education institution. According to Zainally (2008), "ICT provides several facilities and possibilities for educational administrators to perform their tasks" (p. 283). In

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this regard, Voogt and Knezek (2008) observe that the development of computer technology from processing information to supporting communication augmented its potential for education. Our society, without exception, is in transition towards an information society due to the enormous impact of these technologies in all facets of life. However, the importance and use of ICT in schools in Kenya differ from one district to the other due to a number of factors including academic, economic, political, and cultural levels of development.

Although ICT use in secondary school administration in Kenya and Kuria Districts in particular, appears to be a new concept and a complex change, Fullan (1993) advises that there is an urgent need to unpack the complexity of change to provide guidance for those who must deal with it. Also, Day and Leithwood (2007) remark that this is the *'golden age'* of school leadership change. Educators should re-examine their attitudes, perceptions, plans, and implementation of ICT in their daily administrative operations however challenging it might be. This is central to the success with which favoured solutions actually work in schools. If the new technology is being embraced by students and teachers, including computers as educational tools; it is imperative that school administrators, as key educators, also embrace it for effective administration.

Since the mid-1980s, the scope and pace of change around the world have accelerated dramatically. The work of administrators has changed in organizations, including schools, from manual and mechanical to electronic data processing, storage, output, and communication hence the importance of ICT use. Taylor and Hogenbirk (2001) suggest that the transformational rate of change might find professionals outdated in their own profession, thus countries that do not integrate policies of scientific and technology development with education components will be left behind.

Kuria District Secondary School educators are no exception; they face the challenge of change in their operations. Hallinger (1995) says

> *Increased access internationally to ICT has also had an impact on administration of organizations…thus an understanding of how culture shapes both the nature of leadership and the portability of knowledge is increasingly salient to both scholars and professionals throughout the world (pp. 1, 4).*

This study endeavoured to establish educators' perceptions of the importance and extent to which administrators use ICT, which had not previously been explored in this area. The findings would be used to recommend possible measures to be taken by the Ministry of Education, school managers, school administrators and other interested stakeholders for effective school administration.

Administrators' participation in professional development is crucial for any meaningful change to occur as they have a vital role to play. Data use in school administration currently ranges over multiple areas, informing administrators about demographics, school processes, student learning, as well as perceptions and projections (Bernhardt, (2000)). These examples are included to encourage teachers and administrators to get started on data analysis and database work, wherever they are, for school improvement.

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LITERATURE REVIEW

Current Trends in ICT Implementation for School Administration

In 2008 the Kuria district was sub-divided into two districts (Kuria West and Kuria East), with 22 and 13 secondary schools respectively, both private and public. Initially, Kuria was carved from the Migori district in Nyanza province. Out of 35 secondary schools, only 15 had a desktop computer in their school/administrative offices. A few private schools had computer classes for students, whereas most of the public schools do not. ICT use for effective secondary school administration left a lot to be desired.

The Government of Kenya, in its 8th *Millennium Development Goals for vision 2030* endeavours to *'avail the benefits of new technologies, especially ICT.*' Due to the catalytic role of the ICT sector in economic growth, the Government of Kenya has initiated several efforts so that citizens can benefit from opportunities in the sector and develop global partnerships. (Ministry of State for Planning, and National Development, 2008).

Table 1 shows the trend in market gowth in the ICT sector in Kenya between 2000 and 2007. The trend confirms tremendous market growth in the ICT sector in Kenya. The rapid increase in the number of mobiles and internet users is alarming (number of mobile phone and internet subscribers are in millions). This is evident that the use of ICT in all sectors of life, including school administration, is important.

***Table 1**: The Trend in Market Growth in the ICT Sector in Kenya*

Year/Item	2000	2001	2002	2003	2004	2005	2006	2007
No. of fixed lines	313,470	320,482	331,718	328,358	299,225	281,764	272,003	264,882
No. of mob. phone subscribers (mills)	0.18	0.4	0.9	1.6	2.24	1.6	7.5	11.4
No. of internet subscribers (mills)	-	0.2	0.4	1.0	1.05	2.4	2.7	2.7
No. of internet service providers	43	66	72	76	70	58	73	83
Licensed cyber-cafes &Tel. Bureaus	-	-	-	51	70	50	100	1000
Private letter boxes	331,441	388,281	394,121	397,731	395,811	399,667	409,966	412,306
Licensed courier operators	21	40	52	63	74	90	105	140
*Tele-density (%)	-	-	-	1.1	1.0	0.9	0.8	0.9

*The number of landline telephones in use for every 100 individuals living within an area

Source: Ministry of State for Planning, National Development & Vision 2030 (2007)

We are living in the information and technology age where school educators must possess computing capabilities. They must be users of technology and role models to those they lead. Yee (2000) suggests that it is difficult to imagine a leader who does not use technology trying to convince teachers that it is important!

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ICT use at Springdale High School in Ohio City in the USA is discussed by Pflaum (2004). "We had plenty of computers, but we did not have teachers who were ready to use them or an administrator committed to technology" (p.100). A school principal whose attitude and perceptions are not positive may not support reasonable changes that affect the overall school administration and performance. Since the principal is the key actor in the process of reform and redefinition, governments should work with them. as Moyle (2008) observes that "many school leaders however, are unsure of how data can be used to inform their work, what decisions concerning technologies should make or what type of decision require their direct oversight" (p. 615).

On the importance of ICT for Africa's future in exhibitions and conferences, Mboya (2008) stated:

> *As Africans, we have a once-in-a-lifetime opportunity to bridge the gap that has held us back from the global market place…Placing basic IT skills in the hands of ordinary Kenyans will lead to the increased competitiveness and economic growth for the country. (p. 32)*

Despite the challenges principals face, the importance and use of ICT in secondary school administration cannot be over-emphasised. In 2010, the Kenya National Examination Council, the body charged with the responsibility to administer examinations in the country, issued a circular on 15th February 2010 to all Provincial Education Officers, District Education Officers and heads of secondary schools registering for the 2010 Kenyan Certificate of Secondary Education (KCSE). This was published in the Standard Newspaper, as reported by Otieno (2010):; "this year's KCSE candidates will be registered online on the Kenya National Examination Council (KNEC) website, according to the new guidelines set out by the examination council." The KNEC chief executive officer, Mr. Paul Wasanga, said "Candidates' registration using this method shall be carried out using the internet platform to input their details." He added, "Schools without internet connectivity can access this facility from cyber cafes or government institution with internet connectivity."

According to Mucheru, (2011), in the 'top ten trends in Kenya's industry for 2011' ICT evolution and innovation in Kenya over the past two years has frown exponentially. One of his top ten trends is '*Going mobile, going big'*. He noted that Kenya showed a dramatic growth in mobile search traffic. More people do business on their mobile phones than on their laptops because mobile search gives users instant, contextually relevant access to information anytime, anywhere. He further observes that Kenya's mobile penetration massively exceeds the broadband penetration: even with the expected rise in broadband access in 2011, it isn't going to catch mobile just yet. So, it is important for Kenya's advertisers to think mobile. Likewise, it is high time for educators also to consider the role of ICT in educational pedagogy.

ICT Use in Secondary School Administration

Kenya promulgated a National ICT Policy in January 2006 giving priority to ICT. This provided the basis for the Ministry of Education to develop its sector policy on ICT in Education and in June 2006, the Ministry introduced the National ICT Strategy for Education and Training. (Ministry of Information and Communications, 2006).

The Government of Kenya is keen to utilise ICT and other resources to increase access to education for all Kenyans. In March 2004, GOK funded the design and development of the e-government strategy to provide a common framework and direction across the public schools and all other sectors. The policy is intended to enhance collaboration in the development and implementation of ICT within and among GOK institutions as well as between the business community and the citizens of Kenya. The ICT policy required standards to be developed for hardware, software, and training, which considers the use of refurbished computers in schools

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and provides additional guidance as appropriate. Further, in the 9th May 2005 draft, Kenya Education Sector Support Program and Ministry of Education Science and Technology (2005) indicate that:

> *The government appreciates and recognises that an ICT literate workforce is the foundation on which Kenya can acquire the status of a knowledge economy. Against this background, the government intends to make education the natural platform for equipping the nation with ICT skills in order to create a dynamic and sustainable economic growth. (p.105)*

The government has therefore formulated a national information and communication technology policy. In line with this policy, the government developed a strategic plan for ICT (e-government) thus paving the way for widespread use of ICT in government and educational administrative offices. It is from this policy background that the education and training sector requires school principals to play a major role in the implementation of the proposed ICT policy as noted:

> *Successful introduction and use of ICT in education and training institutions will play a critical role in disseminating skills to a wider society, thus creating a positive impact in the economy. To facilitate faster dissemination of ICT skills in the country, the MOEST will work with other stakeholders, such as school administrators, in establishing ICT capacities across the country and schools. (MOEST, 2005)*

The use of data in school administration currently has multiple measures and it acts as an eye opener to administrators in demographics, school processes, student learning, as well as perceptions and projections (Bernhardt 2000).

The following theoretical model summarizes the key areas of ICT use as a diffusion of innovation in administrative areas, namely: student administration, personnel administration, financial administration, general administration and supervision of instruction as shown in figure 1 below.

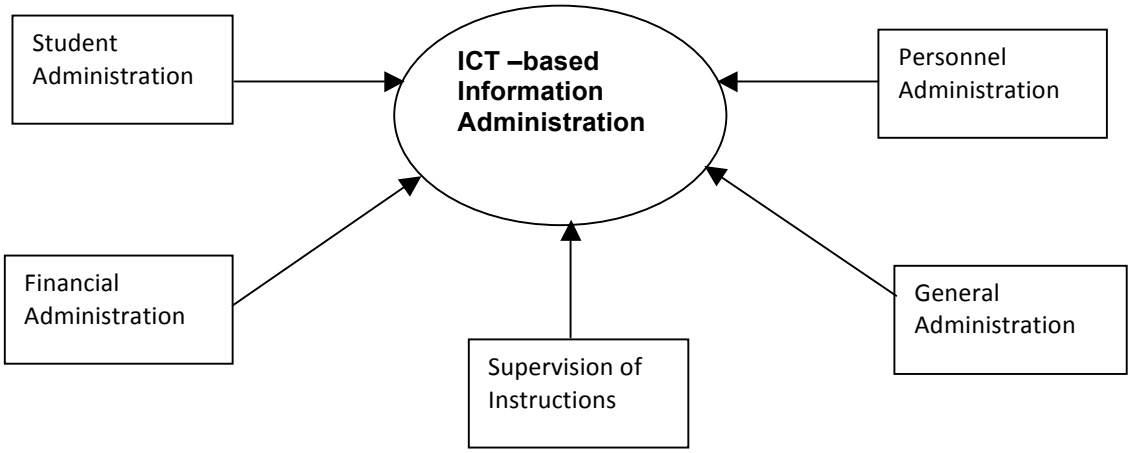

***Figure 1**: ICT Model for Information Administration*

Principals in secondary schools need effective and fast communication and accessibility to information as Wiley (2003) remarks. As a professional educator, you are a professional communicator. Administrators need to correspond through e-mail and the internet, creating websites for school marketing. They can save time while using a program to communicate to

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parents, teachers, students, other school administrators, business executives, suppliers and the wider community. Effective educators must possess ICT knowledge.

Whitehead et. al (2003), on 'changing strategies in technology' noted that administrative leaders have misdirected planning efforts by envisioning technological direction around where educators are and how to move forward. Instead, he suggests that we envision where we want to be and then work backward in designing the appropriate frameworks to get us there.

According to Maki (2008) in her study in Cyprus secondary schools, administrative subsystems include: personnel administration, student administration, resource administration, financial administration and general administration. From this study, Maki, referring to a 2006 study by the European Commission in Cyprus revealed that schools in Cyprus used ICT both as a subject in the school curriculum and as a teaching tool in secondary schools. Empirica (2006) observed that, although significant steps had been taken by the Cypriot government regarding ICT in schools, the utilization of Information Technologies (IT) and Information Systems (IS) in educational management and administration still remained at an early stage.

According to Visscher, et al (2003) and Tearle (2004), studies in the United Kingdom, the Netherlands, Malaysia and South Africa corroborate the fact that school educators require facilitation with appropriate computer facilities and related infrastructure to optimize the application of ICT in their teaching and administrative engagements. For effective schools, administrative and management subsystems should be assisted by computer information systems.

Saiti and Prokopiadou (2009), in their research on the impact of ICT on school administration, indicate that ICT in the school environment may be considered as a synonym for modernization of all organizations, including schools, as they provide for advanced technological tools and applications. In Greece, the implementation of new technologies in secondary education has rapidly increased. This adoption of ICT reinforces the teaching process, but also facilitates administrative transactions.

The use of ICT in the school environment is considered to be part of the extensive technological modernization of administration and education, according to MOEST, (2005), as well as electronic government (e-Government) and electronic learning (e-Learning). The introduction of innovative technological applications in schools is connected with changes, not only at the level of teaching and learning, but also in carrying out administrative tasks in schools.

Educators' Perceptions of the Importance and Use of ICT in Secondary School Administration

Leaders who have changed their mind-set and perceptions will endeavour to support the use of technology in their broad and balanced planning process, despite the challenges. Computer technology-support/diffusion demands visionary leadership and effective management from school administrators. LeBaron and Collier (2001) observe that; until the arrival of the information age, the attitude of school administrators was, 'if it isn't broke, don't fix it'. Little attention was given to ICT implementation.

Afshari, Bakar, and Wong (2010) assert that principals need to be cognizant of the benefits of the new technologies. If principals understand the value of ICT and its benefits, they are able to implement innovations in school. (p.121).

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A survey by Lusike (2006) on teachers' and administrators' perception and experiences on computers in Kenya revealed that both teachers and administrators viewed the use of computers in Kenyan classrooms as worthwhile, but of less importance in administration. Teachers who used computers were enthusiastic and spoke positively about computer use, whereas non-computer users felt left behind technologically. Teachers reported feeling unprepared after attending teacher training colleges to use computers in the classrooms. The situation is more difficult for an administrator who is expected to manage or supervise computer technology in schools. The study suggests that teachers' and administrators' perceptions and attitudes play a significant role in the use of computers. Hence the need to provide pre-service and in-service training to enable teachers to successfully teach using computers in the classroom, and professional development opportunities for administrators in technology use in administration.

In this paradoxical context, participants identified emotional and material barriers, as well as benefits and negative consequences of computer use that are shaped by age and gender. The article argues for the need for a more balanced approach, acknowledging potential negative consequences, promoting the 'people-centred' benefits of computer use over and above the national economic benefits emphasized in the government's drive to encourage older people's uptake of computer-based ICTs.

A survey in US by the National Centre for Education Statistics [NCES] in 2000 using the Fast Response Survey System (FRSS) revealed that 99% of full-time regular public school teachers had access to computers or the internet somewhere in their schools. The survey also wanted to establish how teachers use computers and the internet at school and their perception of preparedness. The results showed that 39% of the teachers used computers and the internet to create instructional materials, 34% used them a lot for administrative record keeping and less than 10% reported accessing model lesson plans or research and best practice using computers or the internet. Newer teachers were more likely to use computers and the internet than those with more than 20 years experience, who mostly used computers and the internet to communicate with colleagues.

Another study by Hong Kian Sam et al. (1999) from Malaysian University, found that a neglected part of computers in education is the use of computers to facilitate school administration processes. This study involved 66 administrators from 11 secondary schools in the Rompin District, Pahang, aimed at determining the level of computer usage and school administrators' attitudes toward using computers for school administration. It also investigated the existence of differences in the level of computer usage among school administrators based on demographic factors such as position, gender and age; the relationship between computer usage and frequency of attendance at in-service computer courses; and problems faced by school administrators in computerizing the administrative processes. Although their findings indicated a high level of computer usage for administrative process in schools, and positive attitudes toward using computers; there were no significant differences in computer usage levels based on position, gender and age. Problems faced in using computers in school administration were difficulties in obtaining appropriate software, computer viruses, hardware damage, inadequate computers and printers, and interrupted power supply. However, he observed that efforts should be made to obtain suitable software, improve the working environment and increase the availability of hardware for administrative purposes.

A study by Sadik (2006) in South Valley University in Egypt showed that there was a provision for pre-service and in-service teacher preparation in Egypt. New evidence from a developing nation which examined 443 teachers suggested that computer attitude is multidimensional when examining the relationship between genders, years of teaching experience, computer use, computer experience, and computer attitudes.

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White (2008) observes that the use of ICT in education is still a relatively new phenomenon. Educators, researchers and thinkers have taken up the challenges of using ICT since the 1980s with varied success. The advent of the internet and the World Wide Web has raised expectations for new productivity and service demands, although research to guide best practice remains scant and elusive.

METHODOLOGY

Research Design

A descriptive-comparative research design was used to obtain information about educators' perceptions of the importance and extent of ICT use in secondary school administration in the Kuria districts in Kenya.It focused on events that occur in the present (Salkind, 2009). Cone and Foster (2005) suggest that correlation research design should also be used to investigate the relationship between variables. A correlation relationship (r) was used with a correlation coefficient ranging from -1.0 to +1.0, which provided the intensity and direction whereby the relationship between two variables was determined without manipulating the variables. A t-test was used to establish whether there was any significant difference in perceptions while a Pearson product-moment correlation coefficient was used to find whether there was any significant relationship between educators' perceptions of the importance and extent of ICT use in secondary school administration.

Sampling Techniques

A sample of 12 secondary schools out of 35 in the Kuria Districts was used in this study (Table 2).

***Table 2**: Respondents per School*

No	Secondary Schools	Category	Respondents	
			Teachers	Administrators
1.	Ikerege	Mixed boys and girls' day & boarding/public	10	3
2.	Isibania	Boys' boarding/public	6	2
3.	Kegonga	Mixed boys and girls' day & boarding/public	8	3
4.	Kehancha	Mixed day and boarding/public	4	2
5.	Komotobo	Mixed day and boarding/public	8	2
6.	Kubweye	Mixed boys and girls' day & boarding/public	7	2
7.	Mabera	Girls' boarding/public	7	3
8.	Matare	Boys' boarding/public	6	3
9.	Moi Nyabohanse	Girls' boarding/public	10	3
10	Nyabikaye	Mixed boys' & girls' boarding/private	6	2
11	St. Teresa Kehancha	Girls' boarding/private	7	2
12	Tarang'anya	Boys' boarding/public	10	4
	Total		89	31

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The schools were stratified into categories as boarding/day, single sex/ co-educational schools; private or public as follows: three girls' boarding, three boys' boarding, thee mixed day and boarding, two, mixed day and one mixed boarding. The required number of schools was chosen using random sampling techniques by picking any three from each category in the list of two districts to arrive at the sub-sample for description and analysis. As indicated by Salkind (2009), the goal is for the sample to resemble the population as much as possible. A cluster sampling technique was used to identify the research participants from teachers and administrators in both public and private schools to participate in the study, where 89 teachers and 31 administrators took part.

To test instrument reliability, a pilot study was carried out in two secondary schools in the Rongo District where 42 educators participated. The Cronbach's Alpha reliability coefficient was computed using the data from this collection. Table 3 shows the Cronbach's Alpha reliability in the educators' perceptions of the importance, application and challenges facing administrators in using ICT. Because the reliability coefficient of the questionnaire was above 0.60, that is (0.877 – 0.928) in all items under importance of ICT, (0.870 – 0.948) in all items of ICT application and that of challenges with 16 items was (0.841), the instrument was considered reliable.

***Table 3**: Reliability (Importance of ICT, Application and Challenges in Administration)*

		No of items	Administration Items	Cronbach's Alpha		
				Importance	Application	Challenges
Cases	Valid	13	*Student administration	..877	.909	
	Excluded[a]	8	Personnel administration	.895	.944	
	Total	10	Financial administration	.928	.948	16 items
		11	General administration	.864	.944	(0.841)
		8	Supervision of instruction	.918	.870	

*Student administration – i.e. student record keeping

Data-gathering Procedures

Research clearance was secured from the National Council of Science and Technology after which the researchers visited the District Commissioners and the District Education Officers in both districts to seek permission to collect data from secondary schools. After introducing themselves and sharing the objective of the study, questionnaires were given to administrators and teachers.

RESULTS AND DISCUSSION

Comparison of Teachers' and Administrators' Perceptions on the Importance and Extent of Administrators' Use of ICT

Our intention in this study was to investigate whether there was a significant difference between teachers' and administrators' a) perceptions on the importance of ICT in secondary school

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administration and b) evaluation of the extent to which administrators used ICT in secondary school administration.

To determine the extent at which the administrators' use of ICT was evaluated, the following scale of interpretation was used:

A great deal	4.5 - 5.0
Much	3.5 - 4.49
Somewhat	2.5 - 3.49
A little	1.5 - 2.49
Never	1.0 - 1.49

Table 4 shows the mean scores for teachers' and administrators' perceptions on the importance of ICT in secondary school administration in the Kuria Districts, as well as the t-test analysis. Both teachers and administrators rated the use of ICT in secondary school administration as important and moderately important. Succinctly, teachers viewed the use of ICT in student administration as important, just like administrators with means of (4.06) and (4.36) respectively while they viewed the rest of the items as moderately important between (3.6 – 3.9).

Administrators on the other had higher ratings on the importance of using ICT in supervision of instruction (4.37) and in student administration (4.6). This is encouraging for the implementation of ICT in secondary school administration because administrators who have a greater influence in implementing ICT use in schools, have a higher perception than those of the teachers. This perception could easily influence the staff they lead through mentoring. Table 4 shows the mean scores on the importance of ICT in secondary school administration.

***Table 4**: T-Test (Comparison on Perceptions of Importance of ICT Use)*

Importance Of ICT Use In	Respondent type	N	Mean	Std. Deviation	t	p-value
Student Administration	Teachers	89	4.0640	.68677	-2.157	.033*
	Administrators	31	4.3623	.58825		
Personnel Administration	Teachers	89	3.6587	1.02746	-1.637	.104
	Administrators	31	4.0040	.96257		
Financial Administration	Teachers	89	3.9787	.98170	-1.724	.087
	Administrators	31	4.3129	.75751		
General Administration	Teachers	89	3.7926	.95376	-2.509	013*
	Administrators	31	4.2581	.66519		
Supervision Of Instruction	Teachers	89	3.9171	.93122	-2.831	.006*
	Administrators	31	4.3790	.72348		

*significant at 0.05 level

The exact probabilities that the difference between administrators' and teachers' perceptions of the importance of ICT in student administration, general administration, and supervision of instruction happened by chance were 0.033, 0.013 and 0.006, respectively. These p-values are less than 0.05; hence the null hypothesis is rejected. This means that there is a significant difference between the perceptions of teachers and administrators on the importance of ICT use

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in the following areas of secondary school administration: student administration, general administration and supervision of instruction.

On the other hand, the p-values of teachers' perception of the importance of ICT use in personnel administration and financial administration are 0.14 and 0.087 respectively, which are greater than the significance level of 0.05. The hypothesis that there is a significant difference between the perceptions of teachers and administrators of the importance of ICT use in administration is supported. In most cases teachers view administrators as supervisors of personnel in their organization as well as custodians of financial matters. So, administrators have a higher perception of the importance of using ICT in areas such as computerizing financial systems, fee payment and analysis, income projections, school financial monitoring and planning for prudent decision making in administration. If educators used ICT in both classrooms and in school administration, an increase in the efficiency of school administration would be noticeable.

The Extent of Administrators' Use of ICT in Secondary School Administration

Table 5 presents a comparison of the views of teachers and administrators on the extent of ICT use in secondary school administration.

***Table 5**: T-Test (Comparison on Perceptions of Application of ICT)*

Application Of ICT Use In	Respondent type	N	Mean	Std. Deviation	t	p-value
Student Administration	Teachers	89	3.1763	1.02229	.024	.981
	Administrators	31	3.1710	1.11559		
Personnel Administration	Teachers	89	2.6517	1.19175	.124	.902
	Administrators	31	2.6210	1.19351		
Financial Administration	Teachers	89	2.6921	1.22764	.147	. 883
	Administrators	31	2.7290	1.12995		
General Administration	Teachers	89	2.5975	1.09939	.316	.752
	Administrators	31	2.5249	1.10289		
Supervision Of Instruction	Teachers	89	2.9045	1.09314	.983	.328
	Administrators	31	2.6815	1.07473		

This table shows that in all the five areas of administration, p-values are between 0.328- 0.981, which are greater than the level of significance of 0.05, suggesting that there is no significant difference between teachers' and administrators' evaluation on the extent of administrators' use of ICT in secondary school administration. The null hypothesis, that there is no significant difference between the teachers' and administrators' evaluation of the extent of administrators' use of ICT in secondary school administration, is therefore supported. Both agree on the extent of the use of ICT in various administrative tasks (2.5 – 3.49). The difference between administrators and teachers in their perception on the extent of ICT in secondary school administration is apparently different to their perceptions on the importance of ICT use.

On the application of ICT in student administration, the mean was 3.17, showing that both teachers and administrators had similar perceptions on the extent of administrators' use of ICT in student administration. In particular, administrators use ICT in preparing, administering, compiling and analysing students' test marks. This is the area that both teachers and administrators indicated as important in ICT use.

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Conversely, both agree that administrators do not apply ICT as much in the remaining the areas, namely: personnel, financial, general and supervision of instruction. Administrators' self evaluation revealed that they use ICT in student administration for keeping records (3.54), fee payment records in computer files (3.29), preparing and administering tests (4.0), analysing students' test marks (4.1), displaying students' academic progress and analysing results (3.48). In personnel administration, they only used it in communicating with staff or internal memos. Administrators use ICT in financial issues only for staff salaries and payment processing (3.06), along with fee analysis (3.03). For general administration, ICT is used in Kenya Certificate of Education registration (4.25), while in supervision of instruction; ICT is applied for posting students' marks (3.0), grading their performance (3.48), and timetabling (3.06).

Afshari et al. (2010) assert that if principals understand the value of ICT and its benefits, they are able to implement innovations in school. He further emphasizes that principals need proficiency in their use of ICT, and to be able to promote a school culture which encourages exploration of new techniques in teaching, learning and management. Responses from teachers' perceptions of the application of ICT in administrative tasks revealed that administrators use ICT a small amount in personnel (2.65), financial (2.69), general administration (2.59), and supervision of instruction (2.90), especially in online instruction procedures, such as moderation of exams, online examination schedules and online conferencing/chats/ symposiums. The latter are vital in exchanging ideas and exposure to pedagogical technology.

Saitoti (2007) observes that increasing computer literacy in Kenya's secondary schools is a prerequisite for improving IT in the education system. He further insists that if Kenya wants to attain the Millennium Development Goals of increasing literacy levels, government education policies must embrace the spirit of technology by introducing an ICT syllabus in all secondary schools. Five years later we still have educators who see the ICT use as important but a nightmare to put into administrative practice.

This situation could be due to inadequate ICT training, as revealed from the responses in Table 6 below 45.2% of administrators and 48.3% of teachers have not attended any ICT training in the last two years, regardless of their age, sex and education. This is critical in the implementation of ICT in secondary school administration, as most teachers and administrators were not trained in ICT use while in college.

***Table 6**: ICT Seminar Attended in the Last Two Years*

	Frequency	No	Percent
Administrators	None	14	45.2
Teachers	None	43	48.3

The government, through the Ministry of Education, has plans to integrate ICT training in teacher training, where school administrators and teaching staff will be presented with opportunities to learn file management, word processing, spread sheets, email, and Internet skills, as well as ICT integration awareness [MOEST, 2005]. However, in 2008, Boakye and Banini argued that teachers need to seek and receive initial and on-going training on how to use ICT to enhance their training. They call for "re-forming" teacher education rather than just trying to "re-tool" the teachers.

Upon realizing this, the Ministry of Education, (2008) notes that all target groups are aware of the importance of ICT integration within the Ministry of Education and education institutions, where the activities take place. Some of its achievements are: 1). Advice has been given on the online

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training modules developed by the Kenya Education Staff Institute (KESI). The KESI courses on ICT integration for school heads were revised. 2). A National ICT Innovation and Integration Centre is now operational, with the mandate to collect, test and share ICT innovations and harness emerging technologies for integration in all aspects of education.

CONCLUSIONS

This study found that both teachers and administrators saw the use of ICT in secondary school administration as important. Teachers and administrators viewed the use of ICT in student administration as equally important while administrators rated the importance of using ICT in supervision of instruction and in student administration higher. This is encouraging for the implementation of ICT in secondary school administration because administrators, who have a greater influence in implementing ICT use in schools, have a higher perception than that of the teachers. They could easily influence the staff they lead through mentoring. In fact, they rated the importance of ICT use in supervision of instruction and in student administration higher than any other item.

There was a significant difference between the perceptions of teachers and administrators on the importance of ICT use in student administration, general administration and supervision of instruction. This may suggest that in most cases teachers view administrators as supervisors of personnel in their organization, as well as custodians of financial matters. It is in this regard administrators gave a higher rating than teachers to the importance of using ICT in areas such as computerizing financial systems, fee payment and analysis, income projections and school financial monitoring, and planning for prudent decision making in administration.

There was no significant difference on the extent of administrators' use of ICT in secondary school administration between teachers and administrators. Both agree on the extent of use of ICT in various administrative tasks. The difference between administrators and teachers in their perceptions on the extent to which administrators use ICT in secondary school administration is apparently the opposite of their perceptions on the importance of ICT use. Teachers and administrators have similar perceptions on the extent of administrators' use of ICT in student administration. In particular, administrators use ICT in preparation, administering, compiling and analysing students' test marks. Both teachers and administrators indicated this to be of importance in ICT use. Conversely, both agree that administrators do not apply ICT much in the rest of the areas namely: personnel, financial, general and supervision of instruction.

It is evident from this study that ICT has a dominant position in education; it enters the school environment progressively, aiming to adopt technological applications not only in the teaching and learning process but also in the management of the whole school. Information systems provide tools that contribute to the improved execution of administrative work. More specifically, using an information system in school administration provides for data integration where data is derived from several information sources, for decision making as well as for management. As such, the implementation of ICT facilitates the effectiveness of administrative services and reinforces communication channels within the school community.

In conclusion, the introduction and adoption of ICT in schools ensures an advanced electronic administrative framework. Information management systems can be used for the modeling and organization of administrative procedures, which align school administration with the principles and strategies of our information society. Within this framework, administrators are expected to be equipped with technological infrastructure to provide the educational community with upgraded technology applications. We may also observe that ICT is being increasingly implemented in schools considering the valuable benefits that school units have gained by using advanced

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technological tools in their everyday work. However, it is important to create the environment necessary for the successful and efficient adoption of new technologies in the classroom as well as in administration, taking into consideration that school management is regarded as one of the main factors contributing to a school's effective function.

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