

# **INFORMATION AND COMMUNICATION TECHNOLOGY AND LANGUAGE IN SECONDARY SCHOOLS IN AFRICA: USAGE AND CHALLENGES**

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## **ABSTRACT**

This paper discusses usage and challenges of language in Information and Communication Technology in secondary schools in Africa. The main objectives are to examine Kiswahili usage in ICT in schools and to identify challenges facing Kiswahili usage in ICT in schools. Data for this study was collected from 120 students and the analysis was done by using tables. The study revealed that Kiswahili is used in ICT in accessing the internet for information, learning and communicating with friends and family members through e-mail. The study also notes that Kiswahili usage in ICT in school is still being faced by various challenges such as difficult technological terms and limited number of those using Kiswahili in ICT. Recommendations were therefore made such as setting up institutions charged with dealing with terminologies in collaboration with ICT experts.

**Keywords:** ICT, Usage, Challenges, Secondary schools

## **Background**

The word Information and Communication Technology (ICT) broadly refers to all forms of technology used to create, store and process information in its various forms (data, voice, image, multimedia presentations and other forms including those not yet conceived) and which enable, facilitate and support communication. More specifically, ICT refers to the convergence of micro-electronics, computers and telecommunications

which makes it possible for data, including text, video and video signals, to be transmitted anywhere in the world where digital signals can be received. They include networks such as fixed, wireless and satellite telecommunications, broadcasting networks and applications such as the internet, database management systems and multi-medium tools (Howell and Lundall, 2000). While ICT encompasses a wide range of technologies, for the purpose of this study, ICT refers to specifically the use of computers, e-mail and internet as these are commonly used ICT in schools.

Language plays an important role in the manipulation and optimal use of ICT. Therefore, Kiswahili being one of the African languages that have been accepted for use in ICT plays an important role in ICT use. Kiswahili usage in ICT has been influenced by the need to make ICT accessible to a larger population that speaks Kiswahili. For a long time, ICT was perceived as a preserve for the elites who could speak English and other colonial languages like French and Portuguese. Kiswahili language therefore offers an opportunity to bridge the digital divide.

In Kiswahili speaking countries like Kenya, the availability of competitive tools for Kiswahili language manipulation in ICT, strengthens the chances of the language to develop into a viable means of communication. For example, Kiswahili usage in ICT has been enhanced by the availability of Microsoft Windows and Microsoft Office in Kiswahili which were developed by Microsoft Company (Microsoft Corporation, 2004). Also available are two spell checkers of Kiswahili; one developed by Lingsoft and the other was spearheaded by Professor Arvi Hurskainen, University of Helsinki to help editors who choose to write in Kiswahili (Ligere, 2005; Hurskainen, 2006). In addition are the Kamusi project which was initiated in 1994 and has produced Kiswahili-English and English-Kiswahili dictionaries available in the Web with free access (Kamusi Project, Yale University) and the Swahili Language Management SALAMA which is important in developing the use of Kiswahili on the computer (Sewangi, 2001). Despite all these initiatives Kiswahili as a language used in ICT still faces various challenges.

## **Objectives**

The objectives of the study were:

1. To examine Kiswahili usage in ICT in secondary schools.
2. To identify challenges that face Kiswahili usage in ICT in secondary schools.

## **Literature Review**

### **The Role of Language in ICT**

Language is a very important factor in using ICT. It is language that facilitates the interaction that occurs between people and ICT. Herbert (1992) argues that the availability of software and content in languages most familiar with users is an essential element in their adoption and optimal use of computers and the internet. In addition, in a context where people speak several languages as often finds in Africa- the option is empowering.

Osborn (2007) states that the accommodation of the most familiar languages is a consideration of primary importance in any efforts to use ICT for development. He also adds that it should be of no surprise, as education and communication in the first languages in general is easier for people than in languages they acquire later. He also notes that ICT was introduced to Africa in English, French, and in some countries south of Sahara, Portuguese and Spanish- the same language of European origin that were used in colonization of these regions which have served as official languages since their independence. These languages are not understood by majority of the population in these countries.

Moshi (2005) states that allowing English or other foreign languages to assume an exclusive role in Africa's technological advancement would, undoubtedly encourage dependency while thwarting global innovations that could be influenced by the African cultures and experiences. It would also encourage the divisions that exist between rural and urban communities, putting those who live in cities/ towns against those who live in rural areas. In Kenya the majority of the population living in the rural areas does not

understand English nor does it speak it well. Therefore Kiswahili offers an opportunity as an alternative language which can be used.

Mackey (1985) states that one problem with reliance on these languages is that a large majority of people on the continent either do not speak these languages or do not speak them well. Therefore, in a country like Kenya where majority speaks Kiswahili, it is important to give Kiswahili speakers the opportunity to use it in ICT.

### **Challenges Facing Kiswahili use in ICT**

Despite the continued efforts to enable the use of African languages like Kiswahili in ICT, various challenges are still evident. For example, Osborn (2007) explains that the African continent has not been represented adequately in terms of content found in the internet. Therefore, there is a need to produce and collect correct information on regions in official and national languages. Osborn further argues that localization of ICT in African languages is a key factor in increasing access to and relevance to ICT. However, Osborn notes that in the area of ICT and the potential for localization, the absence of language policies that actively support African languages computing means that localization will likely depend on initiatives from individuals, organizations and companies. Osborn mentions other challenges facing localization as social problems like negative attitudes towards African languages among the specialists in charge of developments and education and even original speakers of African languages themselves. In addition, he argues that in some countries in Africa, African languages are not preferred for use in government activities and education policies.

The availability of Kiswahili versions of programmes also makes users aware of the fact that computer environments and platforms are in fact language independent. However, the availability of these programmes, accessibility to these programmes and the quality of the programmes are very important if they were to be used for the benefit of the language. For example, Hurskainen (2006) argues that although there are Kiswahili programmes that have been developed for example the Living Swahili Dictionary used in the internet, those dictionaries continue to have many problems like non-standard words.

Therefore, there is a need for rigorous editing policy. In addition, Hurskainen warns that the policy of allowing anyone to become a voluntary editor of the dictionary opens up possibilities for various kinds of zealots to put their fingers in the dictionary. Also introduction of foreign words as such without adopting them to Swahili phonotax does not develop the language, especially if those words already have a number of synonyms in the language.

Hurskainen (2006) further notes that most of these electronic dictionaries and language management tools are not public resources and their uses require a special agreement with the copyright holder. For example, Microsoft Company announced that the Microsoft Office and Windows can be downloaded freely from the net. In the actual sense, they are not free because it is only those who already have a purchased legal copy of the same product in some other language who can do that. Therefore, availability and affordability of these programmes are a challenge to the acquisition of a legal copy by users. This in turn hinders the-would be willing users of these programmes.

In addition, Petzell (2005) describes and analyses some newly adopted words in Swahili in the field of ICT. Petzell explains that Swahili is an agglutinating language i.e the morphemes are joined together. Therefore, lexical borrowings can be grouped into two broad groups: lexical borrowings which in turn can be split into loanwords and loan shifts, and creation of terms where there is no corresponding item in the source language. Some of the borrowed words are surf- kiperuzi (Kiswahili). ‘Kiperuzi’ has been adopted from English word ‘peruse’ meaning to revise or read keenly. In the case of ‘folda’, the word has been adopted and written in Kiswahili for lack of an equivalent word in Kiswahili. Petzell however notes that although BAKITA (Baraza la Kiswahili la Kitaifa) and other institutions coin terms, there is no common method for dealing with new vocabulary in Swahili. This therefore poses a challenge especially in terms of agreement on the terms to be used in referring to ICT.

Ligere (2004), while summarizing issues pertaining to recent formal and informal development of Swahili language in Tanzania notes that when the computers and mobile

phones were imported to East Africa, users adopted names. This terminology was as a result of informal development because none of the institutions like BAKITA and TUKI were involved at first, yet this needed proper formal term elaboration in cooperation with ICT experts. It was only later that the variants in use had to be collected, checked and standardized. Ligere notes with a lot of concern that an important opportunity of providing the public with adequate ICT terms right from the beginning was missed. This is the reason why sometimes conflicting terms complicate communication. For example, where people use either (computer) mouse (source language term, English), ‘Mausi’ (loan word), ‘panya’ (adopted as a Kiswahili equivalent, but meaning rat), ‘kipanya’ (a diminutive form of ‘panya’), ‘buku’ (mouse) and ‘kipenyezi’ (functional describing the device).

Another challenge is the widespread belief in English language dominance in ICT. Zeleza (2006) notes that the dominance of European languages, especially English, has been a limiting factor in the growth of internet use in many parts of Africa. Zeleza implies in this sense that the internet not only excludes the illiterate but also those with low English literacy levels, which in most cases means those without secondary education. The question of language therefore, must be taken seriously. The usage of Kiswahili in ICT therefore offers an opportunity to those who don’t understand these European languages.

In addition, Zeleza (2006) explains that the Microsoft initiatives and similar ones by Google that have launched several national web portals in several African countries show an interesting new trend: attempts by global IT companies to enter new markets by going local, which opens new possibilities for local languages by challenging the supremacy of English. However, Zeleza notes that the challenge for internet providers and users in Africa is to aggressively expand their linguistic presence on the internet and not leave the initiatives to global software, media and advertising industries. Zeleza warns that to do so would be to surrender the development of languages in the internet age to the authority of foreign capital, to market based linguistic calculations. Zeleza suggests that East Africans need to be the architects of Swahili’s globalization rather than leave it to the Microsofts of this world. If this happens it will result in loss of control and ownership over the

language as software and hardware designers in far away places set new protocols of linguistic standardization as is already happening in several parts of the world. The result will be as happened during the colonial period with European Christian missionaries; the creation of what Makoni (2005) has called ‘foreign indigenous languages’. ICTs must therefore be used to empower and not further disempowering Africa’s already historically and globally marginalized countries, communities and cultures.

**Methodology**

Data was collected from two secondary schools; school X and Y that use ICT. Data analysis was done by using descriptions and tables with percentages. Simple random sampling was used to select 60 students in form three from each school because they all learn Kiswahili as a compulsory subject and they have mastered how to use ICT. Therefore, a total of 120 students were included in the study.

**Findings and Discussions**

In Kenya, apart from Kiswahili being a national language it is taught in schools as one of the compulsory subjects in both primary and secondary schools. It is believed that Kiswahili usage in ICT will have direct impact on the development of Kiswahili in education through ICT. Kiswahili as a language that has been adopted for ICT use is still being faced by various challenges. These challenges are inclusive of those that affect users of Kiswahili in ICT and those affecting the language itself. Since these were the main concern for the study, discussions are made on usage and challenges that face Kiswahili usage in ICT.

**Table 1: Ways in which students use Kiswahili in the computers**

	X		Y	
Uses	No. of students	%	No. of students	%

Learning	32	43.84	38	45.25
Private work	28	38.37	18	21.43
School projects	13	17.81	17	20.24
Doing research	-	-	11	13.10
Total	73	100	84	100

**Source; Field research**

In Table 1, it is evident that a bigger percentage of students in both schools 43.84% (X) and 45.24% (Y) use Kiswahili in the computers in learning. Kiswahili use in the computer also varied in the two schools as the usage depends on individual needs and the satisfaction he gets from the computer.

**Table 2: Ways in which students use Kiswahili in the internet**

Uses	X		Y	
	No. of students	%	No. of students	%
Looking for information	28	43.75	29	54.72
Interacting with other students	33	51.56	23	43.40
Learning Kiswahili	3	4.69	1	1.89
Total	64	100	53	100

**Source; Field research**

It is evident from Table 2 that majority of the students use Kiswahili while interacting with other students through the internet and also while looking for information. A small number of students from both schools use Kiswahili in the internet to learn Kiswahili.

**Table 3: Challenges that face students when using ICT**

	Y	X
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Challenges	No. of students	%	No. of students	%
Difficult technological terms	31	36.90	23	29.49
English language preference	13	15.48	9	11.54
Negative attitude towards Kiswahili	7	8.33	8	10.26
Limited number of those using Kiswahili in ICT	18	21.43	20	25.64
Wrong usage of Kiswahili in ICT	6	17.14	9	11.54
Limited research work written in Kiswahili in the internet	3	3.57	2	2.56
Limited Kiswahili programme		5	5.95	3
3.85				
Being forced to use correct Kiswahili	1	1.19	4	5.13
Total	84	100	78	100

**Source; Field research**

As shown in Table 3, one of the major challenges facing students when using Kiswahili in ICT in both schools is difficult technological terms. Although the number of students faced with this challenge varied from each school, it remains a major challenge to the students. One of the reasons given by the students was that they don't understand Kiswahili technological terms used in referring to ICT. This is as a result of Kiswahili acquiring new terms used in ICT. Another major challenge that was mentioned by the students in both schools although with varying numbers, is limited number of those using Kiswahili in ICT. Only 1 student in School Y mentioned being forced to use correct Kiswahili in ICT and 2 students mentioned limited research work written in Kiswahili in School X. Using correct Kiswahili was not a major challenge as these students are exposed to correct Kiswahili usage in school.

From the discussions, it is evident that uses of Kiswahili in ICT show variations proving that the uses of Kiswahili in ICT depend on individual needs and the gratification they get. Various uses of Kiswahili in ICT include accessing the internet for information, learning and communicating with friends and family. The study however notes that students who use Kiswahili in ICT face various challenges. These challenges can be addressed, for example, on difficult technological terms; there should be agreements and

uniformity especially by setting up institutions charged with dealing with terminologies in collaboration with ICT experts to address this. By doing so, new ICT products would reach the market with already agreed terms. Also a dictionary on new terms should be availed in the market for Kiswahili ICT users. Another important factor is that localization efforts should to be fastened so as to avail research work written in Kiswahili in the internet. In addition, researchers should be encouraged to write their work in Kiswahili. Implementation of language policies that recognize Kiswahili as an official language is another factor that should be considered. For example, in Kenya, Kiswahili has been elevated to official language status in the new constitution. By doing so, there is a probability that in future, Kiswahili will be elevated to a language of instruction in schools. This will in turn affect Kiswahili usage in ICT, thus increasing the number of those using Kiswahili in ICT.

### **Conclusions and Recommendations**

The study has examined ICT and language usage in secondary schools in Africa. In manipulation and optimal use of ICT, language usage cannot be ignored. Data from the students on use of Kiswahili in ICT show variations proving that uses of Kiswahili in ICT depend on individual's needs and gratification they get. Various uses of Kiswahili in ICT have also been discussed such as accessing the internet for information, learning and communicating with friends and family members through e-mail. The study also notes that Kiswahili usage in ICT in school is still being faced by various challenges. These challenges are inclusive of those affecting the language itself and also those affecting users of Kiswahili in ICT. On top of the list of challenges for students were difficult technological terms and limited number of those using Kiswahili in ICT. Also noted is that those difficult technological terms pose a big challenge to the students. Recommendations have also been made such as setting up institutions charged with dealing with terminologies in collaboration with ICT experts so that new products would reach the market with already agreed terms.

### **Reference**

Herbert, R. K. (1992). "Language in a Divided Society" in R. K. Herbert (ed.) *Language and Society in Africa: The Theory and Practice of Sociolinguistics*. Witwatersrand: Witwatersrand University Press. Pp. 1-9.

Howell, C. & Lundall, P. (2000). *Computers in Schools: A National Survey of Information Communication and Technology in South African Schools*. Education Policy Unit: University of Western Cape: Cape Town.

Hurskainen, A. (2006). Language Technology and Research Development in East Africa. A paper presented at the 5<sup>th</sup> *International Language Resource and Evaluation Conference*, Geneva, Italy.

Ligere, K. (2005). Uwezeshaji wa Kiswahili Siku Hizi, Mafanikio na Matatizo. Paper read at *the 2005 Annual Conference on African Linguistics*, Savannah, Georgia.

Ligere, K. (2004). Formal and Informal Development of the Swahili Language: Focus on Tanzania. University of Gothenburg [www.translate.org.za](http://www.translate.org.za) Nov.14, 2004.

Mackey, W. F. (1989). "Status of Languages in Multinational Societies." As quoted in Robinson (1996) *Languages Use in Rural Development: African Perspective*. Berlin: Mouton De Gruyter.

Makoni, S. (2005). The Modern Mission: The Language Effects of Christianity, *Journal of Language, Identity and Education* 4(2): 137-155

Microsoft Corporation (2004). "Microsoft Enables Millions More to Experience Personal Computing Through Local Languages Program." Press- Pass- Information for Journalists, March 16, 2004. <http://www.microsoft.com/presspass/press/2004/march04/03-16LLPPR.asp>

Moshi, L. (2006). The Globalized World Languages: The Case of Kiswahili. In selected Proceedings of the 36<sup>th</sup> Annual Conference on African Linguistics, Ed. Arasanyin O. F. & Pemberton, M. A. Pemberton, 166-175. Somerville, M. A: Cascadilla proceeding project

NEPAD e-Africa Commission (2003). The NEPAD e- Initiative: Ensuring that the young participate actively in the Global Information Society and Knowledge Economy. Retrieved on October 22, 2007 at <http://www.nepadafricacommission.org>

Osborn, D. Z. (2007). A Survey of Localization in African Languages, its Prospects; A Background Document. Panfrican Document: California.

Petzell, M. (2005). *Expanding the Kiswahili Vocabulary*. Department of Oriental African Languages. Goteborg University.

Sewangi, S. (2001). *Computer-Assisted Extraction of Terms in Specific Domain: The Case of Kiswahili*. Ph.D. Thesis. Publication of Institute for Asian and African Studies, University of Helsinki.

Zezeza, P. T. (2006). *Postscript: Challenges of the Information and Communication Revolution in East Africa*. The International Development Research Centre, Ottawa.