

Assessment of the Benefits of ICT Integration in Teaching Kiswahili in Public Primary Teachers' Colleges in Kenya, the Case of Rift Valley Region.

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Abstract: This paper is a report of a study carried out in 2017 in Public Primary Teachers' Colleges (PTCs) in Kenya, Rift Valley Region. The study sought to establish the benefits of application of ICT in the teaching of Kiswahili and was guided by Social Cultural Theory (SCT). The inquiry employed sequential mixed methods design and pragmatic philosophical paradigm. Purposive sampling was used to select five PTCs, 36 tutors, all second year student teachers, five Deans of Curriculum and Director e-Learning at the Kenya Institute of Curriculum Development (KICD); stratified random sampling was used to get 232 student teachers from the colleges. Data was collected using questionnaire, structured observation and interview schedule. Quantitative data was analyzed descriptively, presented using tables and bar graphs in frequencies and percentages while qualitative data was analyzed and presented in themes. The investigation found that student teachers are able to have a new dimension of doing things, retain knowledge, get updated knowledge and learning becomes easier and fun, they are motivated to apply technology and emulate the tutors', coverage of course content was fast. To achieve the benefits KICD should engage Kiswahili experts and also tutors to develop ICT Kiswahili content in soft copy, that can be disseminated to the PTCs for the tutors' to integrate. These include DVDs in all Kiswahili topics, e books, and hyperlinks on various topics.

Key Words: Application, Benefits, Integration, Kiswahili, Teaching.

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I. Introduction

Technologies are increasingly finding applications in teaching and learning for instance, ICTs and computers have moved from being the object of study to a learning tool in the classroom and teachers are increasingly expected to have the basic ICT skills and able to apply them in the classroom teaching. Adoption of computers in education has progressed in nearly identical pattern, which is from acquisition of basic computer skills, computer aided teaching, communications and research to usage in every subject. In 2003, the government introduced FPE and there were many challenges due to increased enrollment rates and high Pupil Teacher Ratios (PTRs). ICT can contribute considerably in addressing these challenges especially if the student teachers are going to be equipped with the skills of using ICT in the process of teaching subjects such as Kiswahili.

There are various benefits of integration of ICT in teaching especially in developing countries. For instance students' motivation to learn and engagement in learning processes were improved by use of mobile computing Swan, Hooft, and Kratcoski (2005). Lim and Tay (2003), observed higher students' engagement in higher order thinking by using the ICT. This is relevant to the research since the student teachers if engaged in the learning process using ICT will end up being motivated.

ICT enable teachers and students to access various information through the World Wide Web (www) Network, and are able to learn different things and get information on what is happening around the world this is because of the rapidly developing information society, where internet and world wide web are the order of the day. A good example is, the tutors and student teachers can use their smart phones or computers to get the Kiswahili words from the translator, spell checker and learn on the history and development of Kiswahili in the East Africa and international development and recognition of Kiswahili.

Cennamo, Ross and Ertmer (2014) established that ICT offers a powerful resource for engaging students in genuine experiences; it increased both their motivation and learning. This is because incorporating ICT in learning makes it real and realistic instructional methods support development of critical thinking skills since they provide learners with opportunities to actively participate in the learning process.

Pelgrum, Law and Plomp (2007) established that there has been great contribution of ICT, in the creation of digital resources like digital libraries where the students, teachers and professionals can access

research material and course materials for at anytime and anywhere facilitating sharing of work materials avoiding duplication. Additionally, ICT helps weigh evidence which may be conflicting and finally collect and synthesize sources into an authentic representation of personal knowledge. The critical analysis skills development can also be needed in Kiswahili language teaching and learning especially in reading and analyzing of riwaya (Kiswahili novel), tamthilia (Kiswahili Play) and ushairi (poetry).

Technology provides diverse experiences to learners even when actual classroom is not taking place; students come with a lot of information. Thus it is important that teachers pay attention to the affective needs and diverse cognitive learning styles of individual students which will provide them autonomy to explore in learning (Butucha, 2012).

Magambo (2007) adds that during pre-service teacher training ICTs can improve practice by providing access to more and better educational resources, offering multimedia simulations of good teaching practice, catalyzing teacher-to-trainee collaboration and increasing productivity of non-instructional tasks.

One of the challenges of educationists is how to harness the potential of ICT to complement the role of the teacher in teaching and learning process. Hennessy, Harrison and Wamakote (2010) states that, teachers who do not have a chance to develop professionally in the use of emerging technologies and acquire modern computer literacy skills are under threat and the relevance of the 21st century teacher is the will to develop professionally and appropriately. Therefore integration of the ICT in the teaching creates relevance of the 21st century teacher.

ICT helps recall previous learning; this is because the learners use most of the senses in the learning process. They can see, touch, and hear thus making the learning process less abstract. Ashaver and Ingyuves (2013) states that when learning is based in sense experience, it encourages participation, stimulates interest, individualizes instructions, serves as a source of information and makes learning permanent. Ngozi, Samuel and Ameh (2012) agreed that the learner gains understanding in terms of multiple impressions recorded through the eye, ear, touch and other series.

It is worth noting that ICT internationally is no longer used to only learn ICT skills but it is a tool that can help facilitate reform of education, introduce pedagogical approaches by which students would be stimulated to play a very active role in the learning process. The Ministry of education (2011), in the training package stated that, the digital content can be used to support, illustrate, explain and revise specific topics and provide extra support for individual learners.

ICT can support various types of interaction: learner-content, learner-learner, learner-teacher, and learner-interface (chou, 2003). These types of interaction make the learning process more interactive and learners more active and engaged (Wang and Woo 2007). Majumdar (2006) adds that, integration of computers and communication offers unprecedented opportunities to the education system with its capacity to integrate enhance and interact with each other over a wide geographic distance in a meaningful way to achieve the learning objectives. This is relevant to this research since through integration of ICT in the teaching of Kiswahili, it will enable the student teachers to interact with learners from other teachers colleges in Kenya and outside Kenya, they will be able to share ideas and information, more so, they will be able to have access to a world beyond the classroom.

ICT changes the strategy, instructional content, role of the teacher and content of the curricula are all seen by teachers as obvious as well as inevitable. ICT heightens motivation for the learner; Cuban (2002) in Wanami et al (2011) concurs with this and states that computers offer ways of motivating students to learn about the subjects they would seldom engage otherwise and to come to grips with real-world issues.

Kidombo, Gakuu and Ndiritu (2013) in the report presented to Pan African Research Agenda in Kenya, established that the teacher trainee stated that the use of ICT by teachers, especially the smart board improved their concentration and retention of content taught. Kidombo, Gakuu and Ndiritu (2013) state that, investment in educational programmes such as the Encarta Encyclopedia has revolutionized learning in some schools for instance in some institutions teachers use the information to confirm facts in the recommended school textbooks. Tafakari Project that is for tutors in Primary teacher colleges (PTCs), student teachers in PTCs and primary school pupils have provided digital content for various subject area. This is relevant to the study since such programmes will transform the nature and the process of the learning environment and envision a new learning culture.

ICT is an interactive media thus it facilitates students to develop diversified skills needed for industrialization and knowledge-based economy. It also allows teachers and learners to proceed at different paces depending on the prevailing circumstances thus integration assists in preparing students for demanding job market (Ministry of Education, 2006). Additionally, It also plays a role in preparing students to acquire skills competencies and socio skills that are fundamental for competing in the emerging global "knowledge" economy (Ministry of Education 2006).

In the areas where student-textbook ratio remains substantially high, ICT can be used to give a solution additionally, the ministry has noted that there has been poor performance in Mathematics and Science as

observed in the national examination and it considers the strategy of ICT to have the potential to address these and other challenges (Ministry of Education 2006).

II. Theoretical Framework

This study was based on Social Cultural theory by Vygotsky (1987) that states that human mind is always and everywhere mediated primarily by linguistically based communication. Second language acquisition as a mediated process has been viewed in three perspectives: social mediation by experts and peers, self mediation and artifact mediation additionally, Human mental activity is also mediated by other forms of artifacts (like computers, videos, tasks) that entail non linguistic features.

III. Research Methodology

Sequential mixed methods design was applied. It yielded both qualitative and quantitative data. Pragmatic philosophical paradigm underpinned this study. Investigation was carried out in PTCs in Kenya, Rift Valley region; Purposive sampling was also used to select five colleges, 36 Kiswahili tutors, five Deans of Curriculum in colleges and Director e-learning. Stratified random sampling was used select 232 student teachers within the colleges, a total of 274 respondents were sampled.

Data collection instruments were questionnaire which was administered to the tutors and student teachers, interview schedule administered to the Deans and the Director e-learning and observation guide. Validity of the instruments was enhanced through expert scrutiny that was sought from the two university supervisors assigned to the researcher as well as a panel of experts from the department of Curriculum & Instruction and department of social sciences in the school of education, University of Eldoret. An expert opinionnaire was issued to different experts; their comments were incorporated into the final draft of the research instruments.

IV. Results

Tutors' responses on benefits of ICT integration in teaching Kiswahili were as follows; 91.7%(N=33), of the tutors stated that ICT integration is important in communication skills 8.3%(N=3), of the tutors indicated that ICT integration was least important in improving communication skills. However none stated that ICT was not important in improving communication skills. The findings imply that ICT improves communication skills.

52.8%(N=19), of the tutors stated that ICT integration is important in improving reading skills, 41.7%(N=15), of the tutors indicated that ICT integration was least important in improving reading skills. However, none stated that ICT was not important in improving writing techniques. The findings imply that ICT improves reading skills.

72.2%(N=26), 16.7%(N=6) and 11.1%(N=4) of the tutors stated that ICT integration is important in improving analysis skills, least important in improving analysis skills and not important in improving analysis skills respectively. The findings imply that ICT improves analysis skills.

52.8%(N=19) and 47.2%(N=17), of the tutors stated that ICT integration is important in improving writing techniques, least important in improving writing techniques respectively while none of the tutors stated that ICT integration was not important in improving writing techniques, implying that ICT improves writing skills.

83.3%(N=30) and 16.7%(N=6) of the tutors stated that ICT was important in improving peer mediation in teaching Kiswahili, and least important in peer mediation respectively. However, none of the tutors stated that application of ICT integration was not important in peer mediation. The findings imply that ICT improves peer mediation which involves dialogue among learners. This is in line with Socio Cultural Theory which states that such dialogue is effective as dialogue between teachers and learners since the learners have different mediation strategies and they rely on concrete artifacts. In this case the student teachers will rely on artifacts such as internet, computers, e books, you tube, weblogs, DVDs, power point, hyperlink in the learning of Kiswahili and assisting each other. For instance weblogs can be used as good artifacts in peer mediation since they have articles on different topics and readers are allowed to post their comments too. Thus the student teachers can effectively mediate learning amongst themselves.

72.2%(N=26) and 27.8%(N=10) of the tutors stated that ICT was important in improving expert mediation and least important in improving expert mediation respectively. However, none of the tutors stated that application of ICT integration was not important in improving expert mediation. The findings imply that ICT improves expert mediation. Expert mediation by the tutors comes in when the tutor is directing the student teachers on how to use various ICT tools and when the tutors use the tools during the lesson the student teachers will emulate their tutor. Butucha (2012) notes that technology provides diverse experiences to the learners even when actual classroom is not taking place, students come with a lot of information. Thus it is important that the teachers pay attention to the affective and diverse cognitive learning styles which will provide them autonomy to explore further learning.

75.0%(N=27) and 25.0%(N=9) of the tutors stated that ICT was important in students motivation and engagement in learning activities and least important in students motivation and engagement in learning respectively. However none of the tutors stated that application of ICT integration was not important in students' motivation and engagement in learning Kiswahili. The findings imply that ICT improves students' motivation and engagement in learning activities. When the students are motivated, they are able to engage themselves in applying ICT in their learning for instance getting Kiswahili information from the internet. Butucha (2016) describes engagement as intensity of students' participation in the learning process and that engagement is an important condition for teaching learning process that leads them to success.

55.6%(N=20) and 44.4%(N=16) of the tutors stated that ICT was important in engaging Kiswahili students in higher order thinking, least important in engaging Kiswahili students in higher order thinking respectively. However, none stated that application of ICT integration was not important in engaging Kiswahili students in higher order thinking. This implies that ICT engages Kiswahili students in higher order thinking. This concurs with the findings of Law, Pelgrum and Plomp (2007) that established that ICT adoption provides high order skills such as collaboration across time and place and solving complex real world problems. Kiswahili students are able to collaborate with one another, collaborate with others in other nations since Kiswahili is a national and international language.

52.8%(N=19), 44.4%(N=16) and 2.8%(N=1) of the tutors stated that ICT integration was important in allowing students access Kiswahili information through World Wide Web, least important in allowing students access Kiswahili through World Wide Web and not important in allowing students access Kiswahili through World Wide Web respectively. This implies that ICT integration was important in allowing students access Kiswahili information through World Wide Web.

52.8%(N=19), 38.9%(N=14) and 8.3%(N=3), of the tutors stated that ICT integration was important in reducing the digital divide, least important in reducing the digital divide not important in reducing the digital divide respectively. The findings imply that reduction of the digital divide is a benefit of ICT integration. This concurs with the findings of Law, Pelgrum and Promp (2007) that states that ICT eliminates time and geographical barriers in education since learners and teachers can log in at any place and time and access speedy dissemination of education.

80.5%(N=29), 13.9%(N=5) and 5.6%(N=2) of the tutors stated that ICT integration was important in providing new instructional stimuli, least important in providing new instructional stimuli and not important in providing new instructional stimuli. The findings imply that ICT integration benefits the process of teaching Kiswahili by providing a new instructional stimulus.

83.3%(N=30) and 16.7%(N=6) of the tutors stated that ICT integration was important in improving concentration and retention, least important in improving concentration and retention respectively. None stated that ICT integration was not important in improving concentration and retention. The findings imply that one of the benefits of ICT integration is improving concentration and retention of the student teachers.

66.7%(N=24), 27.8%(N=10) and 5.6%(N=2) stated that ICT integration was important since it gives relevance of teacher education in the 21st century, least important in giving relevance of teacher education in the 21st century and not important in giving relevance of teacher education in the 21st Century. The findings imply that one of the benefits of ICT integration is giving relevance of teacher education in the 21st Century. The findings concurs with Fallata, (2016) who noted, it seems that almost every aspect of society in the 21st Century revolves around ICT thus it is essential for educators to integrate ICT in the education of students of today who are born in a world rich with technology.

86.1%(N=31) and 13.9%(N=5) of the tutors stated that ICT integration is important since it enables tutors to mentor student teachers in implementing the digital content in their teaching career and least important in enabling tutors to mentor student teachers in implementing the digital content in their career respectively. None stated that ICT integration was not important in enabling tutors to mentor student teachers in implementing.

Table 2. Student teachers' Response on Benefits of ICT Integration in Teaching Kiswahili

78.4%(N=182), 9.1%(N=21) and 12.5%(N=29) of the student teachers stated that ICT integration is important in improving communication skills, of least important in improving communication skills and not important in improving communication skills respectively. The findings imply that ICT integration in teaching Kiswahili is important in improving communication skills.

75%(N=174), 9.5%(N=22), 15.5%(N=36) of the student teachers stated that ICT integration is important in improving reading skills, least important in improving reading skills and not important in improving reading skills. The findings imply that ICT integration in teaching Kiswahili is important in improving reading skills.

72.8%(N=169), 13.8%(N=32) and 13.4%(N=31) of the student teachers stated that ICT integration is important in improving analysis skills, least important in improving analysis skill and not important in improving analysis skills. The findings imply that ICT integration in teaching Kiswahili is important in

improving analysis skills. The findings agree to Mc Farlane and Sakellariou (2002) that established that ICT plays a central role in supporting critical analysis skills development.

52.2%(N=121), 27.2%(N=63), 20.7%(N=48) of the student teachers stated that ICT integration is important in improving writing techniques, least important in improving writing techniques, not important in improving writing techniques respectively. The findings imply that ICT integration in teaching Kiswahili is important in improving writing techniques.

53.4%(N=124), 25.9%(N=60) and 20.7%(N=48) of the student teachers revealed that ICT was important in improving peer mediation, least important in improving peer mediation and not important in improving peer mediation respectively. The findings imply that ICT integration in teaching Kiswahili is important in improving peer mediation. Peer teaching is one of the opportunities presented by ICT in the process of learning. Education sector through a statement by the cabinet secretary for Education has acknowledged this opportunity (Vision, 2030).

63.4%(N=147), 16.8%(N=39) and 19.8%(N=47) of the student teachers revealed that ICT was important in improving expert mediation, least important in improving expert mediation and not important in improving expert mediation. The findings imply that ICT integration in teaching Kiswahili is important in improving expert mediation.

71.6%(N=166), 12.5%(N=29) and 15.9%(N=37) of the student teachers revealed that ICT was important in improving students motivation and engagement in learning activities, least important in improving students motivation and engagement in learning and not important in improving students motivation and engagement in learning. The findings imply that ICT integration in teaching Kiswahili is important in improving students' motivation and engagement in learning activities. This concurs with the findings of Swan, Hooft and Kratcoski (2005) that reported improvement of students' motivation to learn and engage in the learning process due to the use of mobile computing.

62.5%(N=145), 16.8%(N=39) and 20.7%(N=48) of the student teachers revealed that ICT was important in engaging Kiswahili students in higher order thinking, least important in engaging Kiswahili students in higher order thinking and not important in engaging Kiswahili students in higher order thinking respectively. This implies that ICT integration in teaching Kiswahili is important in improving high order thinking among student teachers. This concurs with the findings of Ringstaff and Kelly (2002) that stated that ICT as a resource helps in developing higher order thinking, creativity and research skills. It also agrees with Law, Pelgrum, and Plomp (2007) that stated that ICT adoption provides high order skills such as collaboration across time and place.

71.6%(N=166), 11.2%(N=26) and 17.2%(N=40) of the student teachers stated that ICT integration was important in allowing students access Kiswahili information through World Wide Web, least important in allowing students access Kiswahili through World Wide Web and not important in allowing students access Kiswahili through World Wide Web respectively. This implies that ICT integration in teaching Kiswahili is important in allowing students to access Kiswahili through World Wide Web.

43.5%(N=101), 27.2%(N=63) and 29.3%(N=68), of the student teachers stated that ICT is important in reducing the digital divide, least important in reducing the digital divide and not important in reducing the digital divide respectively. This implies that ICT integration in teaching Kiswahili is important in reducing digital divide.

70.7%(N=164), 16.4%(N=38) and 12.9%(N=30) of the student teachers stated that ICT is important in providing new instructional stimuli, least important in providing new instructional stimuli and not important in providing new instructional stimuli respectively. This implies that ICT integration in teaching Kiswahili is important in providing new instructional stimuli.

78.9%(N=183), 10.3%(N=24) and 10.8% (N=25) of the student teachers stated that ICT is important in improving concentration and retention, least important in least important in improving concentration and retention and not important in improving concentration and retention. This implies that ICT integration in teaching Kiswahili is important in improving concentration and retention. The findings concur with those of the tutors. In fact the findings from two of the Deans of Curriculum interviewed established that ICT integration makes the students observe more than listening which thus helps in the retention of Knowledge.

72.4%(N=168), 14.2%(N=33) and 13.4%(N=31) of the student teachers stated that ICT integration was important since it gives relevance of teacher education in the 21st century, least important in giving relevance of teacher education in the 21st century and not important in giving relevance of teacher education in the 21st Century respectively. This implies that ICT integration in teaching Kiswahili is important in giving relevance of teacher education in the 21st century. The findings concurs with Hennessy, Harrison and Wamakote (2010) who established that teachers who do not have a chance to develop professionally in the use of emerging technologies and acquire modern computer literacy skills are under threat and the relevance of the 21st century teacher is the will to develop professionally and appropriately.

69.4%(N=161), 12.5%(N=29) and 18.1%(N=42) of the student teachers stated that ICT integration was important since it enables tutors to mentor student teachers' in implementing the digital content in their career, least important in enabling tutors to mentor student teachers in implementing the digital content in their career and not important in enabling tutors to mentor student teachers in implementing the digital content in their career respectively. This implies that ICT integration in teaching Kiswahili is important in enabling tutors to mentor student teachers' in implementing the digital content in their career. The findings concur to the benefit stated by one of the Deans interviewed that:

Student teachers will be motivated to use technology in teaching. They would want to emulate their tutors, they will want to learn how to use ICT and integrate it in the teaching process (D3). The findings from the five Deans of curriculum interviewed established more benefits of ICT integration in the teaching of Kiswahili. Three of the Deans stated that ICT integration makes the students understand Kiswahili subject better. In fact one of the Deans stated that: ICT can help in better understanding of *fasihi* (literature) and *tamthilia* plays in Kiswahili through actual animations and actual plays via audio or YouTube (D4).

Three Deans also stated that, ICT integration in the process of teaching Kiswahili is a quick way of passing information. A tutor is able to cover more in a short duration of time. One of the Deans said,

When you use ICT yoooooooouuuu... (*While swinging on his chair*) the pace of coverage is fast. They have the gadgets at that moment they are able to get the concepts immediately. They are able to see, to hear and to touch thus taking care of the three types of learners (D2).

Two of the Deans stated that by integrating ICT in the teaching of Kiswahili, tutors' will be able to get updated knowledge of the language rather than depending on outdated books. More so, the student teachers will also be able to get updated information that they can apply in their teaching career. One of the Deans said, Computer literacy is a key component in the new curriculum, when the tutors integrate the student teachers can have a new dimension of doing things instead of using the yellow notes (D2).

V. Summary

The study established that application of ICT integration is of benefits to the teaching of Kiswahili, student teachers are able to have a new dimension of doing things, retain knowledge, get updated knowledge, learning becomes easier and fun, they are motivated to apply technology and emulate the tutors', finally, coverage of the course content is fast.

Other benefits include; improving communication skills, reading skills, analysis skills, writing techniques, peer mediation, expert mediation, high order thinking among student teachers, allowing students to access Kiswahili through World Wide Web, was important in reducing digital divide, providing new instructional stimuli, improving concentration and retention, giving relevance of teacher education in the 21st century, enabling tutors to mentor student teachers in implementing the digital content in their career.

VI. Conclusion

Application of ICT integration is of benefits to the teaching of Kiswahili and that tutors acknowledged the benefits more than the student teachers yet they should be the ones to embrace ICT more than the tutors since they are growing in a digital era, and vision 2030 require the teachers since the nation relies on education and training to create a sustainable pool of highly trained human resource and capital that underpins the ambition of the nation.

VII. Recommendations

To achieve the benefits KICD should engage Kiswahili experts and more so tutors to develop ICT Kiswahili content in soft copy, that can be disseminated to the PTCs for the tutors' to integrate in the teaching of Kiswahili. These include the DVDs in all Kiswahili topics, e books, and hyperlinks on various topics.

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