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Original Research Article

Integration of ICT into Inclusive Classroom; Opportunity Missed!

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Abstract: This paper investigates essentials over a decade the KICD, teachers and the government have made considerable investments in providing ICT based instructions to support learners in an inclusive set up. ICT has strongly influenced classroom instructions, it offers access to world of knowledge, provides universal access to learning and ensures ''educational for all'' a realizable dream for 21st century classroom which plays a fundamental role in capitalizing the opportunities offered by new technologies to support full inclusion of all learners in the mainstream education system. Therefore the purpose of the study is to shade light on the available opportunities on the integration of ICT into inclusive classroom, opportunity missed and challenges. It focuses on the strong potential ICT provides to avoid discrimination among the learners. It is based on a descriptive survey design. Stratified sampling was used to select public primary schools. Target population was eighteen public primary schools. Simple random sampling was used to select sample size of six schools and their teachers. Questionnaire and face to face interview were used to collect data. Descriptive statistics which included standard deviation, mean, frequency and percent were used to analyze quantitative data and qualitative by examining recurring themes. The findings indicated that ICT tools and devices play significant role in providing platforms which can address diversity of learners in an equitable manner. Learners miss ICT opportunities because; KICD is not effectively providing digitized content, the government has failed to provide facilities, no follow up and the teachers are not competent to use adapted ICT content. The study recommends that the government should have a comprehensive strategic plan pertaining to integration of ICT in an inclusive classroom, MoEST and KICD to organize regular seminars for teachers to ensure uniform and equal learning opportunities.

Keywords: ICT, Inclusive Classroom, Integration, Opportunities, Challenges.

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BACKGROUND OF THE STUDY

Inclusive education is about improving schools and teaching practices in order to provide quality learner-centered education to all children regardless of their disabilities. Inclusive education is an approach to education that aims to remove barriers to quality education to all children. For successful inclusion schools require improved attention at many level; learner-centered learning, flexible teaching methods, appropriate teaching aids and equipment and strong leadership. Inclusive classroom entails using a more inclusive approach to teaching, adapting ICT tools, developing communication skills, managing class effectively and managing behavior mare positively and actively. ICT instruction provides learner centered approach especially cooperative learning (Duda, 2011). ICT in an inclusive classroom aims to better meet the diverse needs of all learners. It values diversity and the unique contributions each learner brings to the classroom. Disability can prevent learner from full participation in the class especially when adapted environment is lacking (Obadia, 2012). Inclusive education means different and diverse students learning side by side in the same classroom. However the schools are not fully equipped to take care of these learners especially on the side of instructional materials more so ICT blended classrooms. Inclusive learning is a process of increasing the presence, participation and achievement of all learners in their education setting (Hick *et al*., 2005). Use of ICT is widely recognized as good practice, it is considered a key tool for promoting equity educational opportunity.

Problem Statement

Teachers have not used new ICT pedagogy approaches that are beneficial and have positive impact on learning in inclusive classrooms (EC, 2008). It has

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yet to revolunize processes at schools. Special needs learners perform poorly compared to their peers. However because during learning process they are not treated differently, teachers usually use same technology without considering adaptation. However research indicates significantly improved accuracy of responses and on-task behavior when computers are used by learners with SN. There is lack of preparedness by teachers for teaching learners with disabilities in inclusive settings (Anapiosyan *et al*., 2014). Hayapetyanet (2014) reported that 90% of teachers lacked teaching methodologies that would effectively include children with disabilities in their class activities. This shortcoming often leads to their poor quality inclusivity. Training programs are doing little to prepare teachers to handle inclusive classes. Many teacher-education programs offer just one class about students with disabilities to their general-education teachers. It is not enough to equip teachers for a roomful of children who can range from the gifted to students who read far below grade level due to a learning disability. Relevant ICT content is also lacking and there is no government follows up. The above arguments form the basis for the current study.

METHODOLOGY

In an attempt to explore and identify ICT opportunities and opportunities missed by special needs learners in inclusive classrooms a descriptive survey design was employed to obtain comprehensive view and experiences of the respondents. Stratified sampling was used to select public primary schools. Target population was eighteen public primary schools. Simple random sampling was used to select sample size of six schools and their teachers. Questionnaire and face to face interview were used to collect data. Descriptive statistics which included standard deviation, mean, frequency and percent were used to analyze quantitative data and qualitative by examining recurring themes.

FINDINGS AND DISCUSSION

Teachers were asked how exposure of learners to and use of ICTs in classroom affect achievement. Table 1 reveals that 50.42% agreed that ICT affects achievement of learners positively. ICT tools develop learners' key competencies and creating spaces for interaction and information sharing. These competencies improve learning. Carvach & Morais 2011; Livington, (2012) support the findings, by producing knowledge quickly and easily and subsequently publishing and diffusing acquired information results in better achievement. However 10 % said that even if learners are exposed to ICT tools there is no effect. Probably these teachers have not integrated ICT into their instructions, therefore have no experience.

Table-1: Use of ICT and Achievement

Exposure	Frequency	Percent
Highly	60	50.42
Moderately	27	22.68
Low	20	16.80
Not at all	12	10.
Total	**119**	**100**

Table 2 indicates that 26% agreed that attitude of the teachers have the greatest impact on the use of ICT instruction. ICT content may be available and have positive outcome but teachers must willingly accept to use it in classroom. Teacher competency (26%) also has an impact on the use of ICT instruction. Only competent teachers can use ICT in their classroom instruction. Choosing appropriate ICT tools to support learning of different groups of learners is challenging. A teacher may be comfortable with a learner with specific learning difficulties but being an inclusive class with varied disabilities. It is not easy for the teacher to be competent to use the varied tools. Istenic (2014) postulates, special attention is required when choosing appropriate tools to support learning of different groups as certain particularities can directly affect the ICTs use for example low vision, hearing, learning difficulties and language understanding.

Table-2: The Impact of ICT in Instruction

Impact	Frequency	Percent
Frequent use	10	8.40
Accessibility	15	12.60
Attitude	31	26
Learning outcome	20	16
Availability	12	10
Competency	31	26
Total	**119**	**100**

Frequent use of ICT is very minimal (10%). Teachers are reluctant to use ICT tool because they lack knowledge and skills to develop ICT instructions, moreover KICD ICT content brought to regular schools did not cater for inclusive learners. The standard one tablets were purely for the mainstream learners. This is evidenced in a class where there were two children with different disabilities, one learner had dyslexia who ought to have been taught using spell checker tool and other one visual impairment who should be taught by text to speech tool. Hayarapetyan *et al.* (2014) reported that 90% of teachers lacked teaching techniques that would effectively include children with disabilities inn their class activities.

Table-3: Inclusion and Content Dissemination via ICT

Content suitability	Frequency	Percent
Yes	31	26
No	88	74
Total	**119**	**100**

Teachers were asked if the content in the tablets are inclusive to cater for varied learners. Table 3 indicates (74%) that the content for dissemination via ICTs produced by KICD to ensure inclusion is below average. The content in the tablets did not cater for inclusion. Teachers were forced to borrow the tablets from special schools to retrieve the content for some learners. This did not cater for interactive learning because these learners could not manipulate the content. Some contents were completely missing for example content for training specific skills such as literacy and numeracy focused software which modifies the pace and complexity of tasks presented to learners. Admiral (2014), use of ICT is not equally effective for all learners depending on their learning technology preference.

Table-4: Impact of Different ICT Application and Inclusions

Media	Frequency	Percent
Audio	17	14.28
Visual	38	31.94
Audio-visual	64	53.78
Total	**119**	**100**

Table 4 reveals that audio visual (AV) such as video impact positively on communication of learners living with disabilities. This is because AV is interesting for children especial mentally challenged. It captures their attention for long and stay in task. Learners with visual impairment can listen to the explanation and those with hearing impairment can watch the video. However audio visual make the learners passive (53.78%) learners but it is a better way of learning because it is inclusive regardless of disability. Audio (14.28%) does not help much, the attention span is limited and this application requires that learners listen to explanation. Edgar postulates that learners retain 10% of spoken words. Therefore teachers should use different techniques to cater for varied learners in an inclusive set up. Caspary & Booth (2015) affirm, inclusive classes pose several challenges for teachers and schools. Reis *et al* (2010), teachers must use different teaching methods to reach learners with varying learning abilities and facilitate their learning progress.

Benefits of Learning Strategies Fostered by Use of ICT for Special Needs

Teachers were asked open ended question on the benefit of ICT in inclusive classroom instruction. Most of the teachers agreed that inclusive classroom bring many benefits to all learners such as group work, inquiry projects, transformation of teacher to child centeredness. Learning with ICTs results in better skills and competencies, interactive learning offered by ICT leads to a more reflective, deeper and participative learning. All these enrich and enhance learning. Unfortunately some of these opportunities are missed by learners in inclusive set up. However, they pose challenges to teachers who need to be flexible and adaptable in recognizing the needs of learners in tailoring the learning process to these learners' learning abilities. ICT is a good tool for adapting teaching to children with different abilities. It has demonstrated in previous research proving that use of ICT benefits cognitive development (Magnan &Ecalle, 2006) and motivation (Sigleton & Simmons, 2001) in learners with special needs, improves literacy (Seo &Woo,2010), communication (KNBS,2009) and social skills, Mintz *et al*. 2012;Cheng &Y 2010; Ditcharoen *et al*., 2010).

Opportunity Missed

An interview conducted to head teachers revealed that Kenya is not yet ready in terms of ICT instruction for both regular and inclusive classrooms, they pointed out key issues such as receptiveness to diversity, quality learning, teacher effectiveness, interactive learning among others. ICT tools provide platforms to remove barriers. However issues of ICT integration in inclusive classroom is one of the most issues in contemporary educational policy and practices.

ICT has Changed Learning Design in our Classrooms

ICT instructions are undergoing rapid transformation resulting in innovative learning that are connected to flexible learning and collaborative. It gives a learner opportunity to access learning anywhere and anytime, provides autonomy to learning, learning is learner centered, gives equal and uniform opportunity to learning. This finding is supported by (Conti-Ramsdem *et al*., 2010). Further Ballew *et al*. (2015) affirm, ICT offer new opportunities for promoting knowledge building, learners navigate a virtual world unlimited by time and place. However inclusive classes pose challenges, special needs learners often miss these opportunities due to varied learner characteristics, unpreparedness of the government, lack of relevant (adapted) ICT content prepared by the KICD, teacher /learner attitude and competency. Teachers cannot provide ICT instruction which can benefit varied needs hence special needs learners remain at teacher centered learning approach.

Appropriate ICT Facilities and Tools

An interview conducted to the head teachers revealed that there is lack of adapted ICT facilities and tools in all the sampled schools. Hence SN learners have greatly missed this opportunity and have remained at the mercy of the teacher who profoundly use expository approach in classrooms, adoption of inclusive ICT instruction is lacking. Obadia (2012) supports the finding, schools are not well equipped to fully take care of SN learners on the side of ICT instructional materials.

CONCLUSIONS

ICT tools and devices play significant role in providing platforms which can address diversity of learners in an equitable manner. Learners miss ICT opportunities because; KICD is not effectively providing digitized content, the government has failed to provide facilities, no follow up and the teachers are not competent to use adapted ICT content.

RECOMMENDATIONS

The study recommends that the government should have a comprehensive strategic plan pertaining to integration of ICT in an inclusive classroom, MoEST and KICD to organize regular seminars for teachers to ensure uniform and equal learning opportunities.

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