

Delivering Equitable And Quality Education To Remote Kenya Using ICT

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ABSTRACT: Most developing countries similar to Kenya are striving to empower their citizens with education with an attempt to realize development goals. Education has been pointed out as the single most fundamental pillar in driving development agenda. However this may not be possible because unless quality and equitable education is offered. Quality education must be able to meet the diverse needs of learners such as cultural way of life (e.g. pastoralist and nomadic), poverty levels among others. How would a poor child living in the remote Kenya whose parents survive entirely pastoralist and formalism as a way of life be able to get an equitable and quality education? The study argues that ICT has the outstanding contribution in answering this question. Specifically, the paper illustrates the need for ICT adoption to bridge the education gap between rural and urban setting. This focuses on bridging a digital divide, developing digital contents and adopting cloud computing. Moreover, this paper also highlights the need to incorporate e-gender in such a framework to meet the robust needs of the society.

Keywords: Education, rural and remote areas, developing nations, ICT, gender, development (keywords)

1. INTRODUCTION

According to Wosyanju, education is the process through which knowledge, skills, attitudes and values are imparted in a person for the purpose of integrating the individual in given society [1]. This means the perception about some of the cultural values and activities will be transformed and one will have a wide view of issues pertain social and private life. One will get a wide scope of reasoning that will enable him/ her be confident and sure especially during decision making. Considering this positive impact of education on a person, we realize a need of sensitizing the Kenyan communities especially the ones in the rural and remote parts of the country to give education a foremost priority so as to join the entire nation in national building. According to Education for all global monitoring Report, teaching and learning are pivotal on development in this rapid changing world [2]. This is an indication that education is a very vital ingredient in national development and it is among the key factors that can be used to gauge the country's development rate. This is because when people attain education, they get skills that activate innovation which turns the nation into an innovative nation and therefore experience a rapid national development. In the same way, some of the cultural values that violate the children rights especially pertaining gender can be addressed well only if education can penetrate to the interior parts of the country. This is a matter of concern because some of the cultures give a priority to a boy child and all resources tend to be invested in him with a notion that he will take care of the parents and the entire family while the girl child is neglected for a reason that she will get married and therefore and will be supported by the husband. This notion has been so pronounced in some of the communities such that a girl child is viewed in terms of wealth. Thus the herds of cattle that the father will receive as dowry, as a result, she is forced to get married at tender age to the men they don't know and who are not their age mates. As a result, a girl child misses the opportunity of getting education creating an academic gap between men and women. Similarly, in some communities, the sensitization of girl child education has been so high to the level that a boy child has started to be neglected. This has been evident in some schools where the number of boys in schools started going down because at any time they have send home for school fees together with their sisters, the parents have opted to pay fees for the girl first

while letting the boy child to stay at home looking after the heard cattle. In fact, in most cases parents make sure a girl child has everything she needs in school for proper learning but a boy is left to hustle for almost the entire term with the parents expecting the same results. This is another scenario that denies a chance of equitable education to children. Therefore if ICT is integrated in the Kenyan education system and provide the appropriate infrastructure which will allow a learner access education from the remote part of the country using the simple and affordable mobile device like an internet enabled phone, the digital divide can be bridged and equitable education can be attained by all citizens regardless of their location. This paper therefore explores the possible ways of availing equitable education to all children regardless of their gender, economic status and location in the country.

2. CHALLENGES OF DELIVERING EQUITABLE EDUCATION.

a. Infrastructure.

The key elements of quality education include safe learning environments, teacher training and support, standard based assessment practices, quality material resources an both formal and non formal opportunities that help individuals secure their livelihoods.[3] This is all about the educational Infrastructure, because infrastructure is the basic physical and organizational structures needed for smooth running of the education sector, especially in teaching and learning environment. Most rural schools in Kenya, have a challenge of the adequate infrastructure and adequate trained teachers, thus the population at times exceeds the national ratio of pupil teacher ratio which is 30:1, classrooms are few such that some children learn under a tree, text books are few to the extent that only teachers can access them or in some cases teachers are forced to purchase their own, chalks are not enough therefore teachers are forced to improvise teaching by making pupils sit down in the dust so that he/ she can write in the dust etc. Therefore a learner subjected to such conditions cannot be compared with a learner in a town or city school who has enough teachers, enough textbooks and chalks in school, enough classrooms and pit latrines etc. Due to this, learners in town and city environment perform better because of the supportive kind of learning.

b. poverty

In economic terms, the base on income measures with the absolute poverty line calculated as the food expenditure necessary to meet dietary recommendations and supplements by the small allowance of nonfood goods is referred to as poverty [3]. The remote parts of Kenya are mostly characterized by poverty, which according to the revised World Bank standards, is where people live below a dollar per day characterized as absolute poverty while below two dollars as poor [2]. In this condition, we realize a family that doesn't afford meals, clothing, adequate shelter, education and proper health care is definitely poor. If we consider a case of a child with an empty stomach, with no proper dressing in class and has poor health (malnutrition) sitting in the same classroom with the one who had food in the morning and is sure of lunch and supper, dressed in proper attires and having good health, we will notice a disparity between their understanding in class because one has a peace of mind while another one has a "mental torture." This is so evident in Kenya especially with the communities that are far away from the town centers for example Samburu, Turkana, Ndorobo, Maasai and Pokot, because some of them live in semi arid areas where even getting water is a challenge while others live in the forest where they are separated from other communities. Children end up starving in the homes without going to school because the competition will not be fare for they compete with the children from other parts of the country who have an opportunity of testing food every day. As a result, such communities do appear withdrawn from others due to inequitable distribution of resources, where education is one of the important resource that they end up missing.

c. Cultural and traditional values

Kenya as a country has over 41 tribes where every tribe or community has its own culture and tradition, whereby some of the traditions and cultures are a barrier to equitable education. In communities like Maasai, Samburu and Turkana, a girl child must get married at the wish of the parents and therefore she is denied an opportunity to attain education just like girls from other communities. In the same way, boys are introduced to cattle rustling at an early age hence denying them a chance to attend school. These kinds of culture and traditions have coursed under development in these communities because the innovative skills lack. And a few who attains education tend to run away living the community in the same state. If we can think of ICT in this case to bridge the gap in the communities by bringing education near to the people, the few who run away will definitely come back and participate in national building within their communities.

d. Parental irresponsibility

Many parents don't take their responsibility of providing basic needs to their children and this pauses a great challenge to equitable education. Education is one of the basic needs necessary for the child's development [3]. The time parents evade their responsibility, then children are denied a chance of being valuable people in the society. Thus, their contribution to the national development will be negligible because their thinking will be limited. This will make obviously encourage inequitable delivery of education. Reason being, the formal education that is normally attained in school will not be attained yet it is the one that enhances innovation.

3. DELIVERING EQUITABLE AND QUALITY EDUCATION TO RURAL AND REMOTE KENYA.

Places that are far away from the city and characterized by low population are the rural areas *US census bureau*. This view is not exhaustive enough because a place can be far away from the city having low population but well developed and accessible and much business is done despite the low population. Another characteristic of a rural area especially in Kenya is low economical levels. Thus most of the population in this place has low income. Equitable education is viewed in terms of availability of trained competent teachers, classrooms, exercise books and text books and other relevant writing materials [4]. This idea is true but only limited to physical classroom environment. It does not take in to account the virtual class that is made available via the aid of ICT; it doesn't put in to consideration the idea of e-learning which is slowly taking root in the country. Therefore, if ICT can avail a virtual class, electronic text books and appropriate software which will be used for typing instead of typing, then we will have created the better environment for delivery of equitable education to rural and remote part of the country. Because it has always been a challenge especially when we consider the traditional perception of the requirements for education. For example a case where we have learners of different ages (both old and young) in the same classroom expecting them to sit on the same desks, go to the library and borrow books and also be subjected to the same type of exercise [5]. The disparity will be so "loud" especially for the case where a small child beats an old man. This is a challenge that can easily be addressed and equitable education will be experienced in all parts of the country [6].

a. ICT infrastructure

Apart from depending on the traditional educational infrastructure which has actually been faced with a lot of challenges, ICT infrastructure can definitely bridge the gap and deal with inefficiency. The ICT infrastructure can definitely be the foundation for providing effective learning experience that cuts across all learners [5] regardless of their locations, ages, physical and mental ability and many others. The infrastructure requires the availability of power, computers, radios, Televisions, Mobile phones, telephone lines and many others [6]. The infrastructure specification on the side of the gadgets, each gadget should be loaded with appropriate software that provides the environment that is conducive for using the ICT facilities. The mentioned items are not conclusively the ICT gadgets, but they are examples of the gadgets and facilities that facilitate Information exchange and Communication. It is one thing to get the infrastructure, and another thing to put these resources to the right use. Therefore, with use of ICT, one with an older age can stay at home and be able to access the same education at his/ her convenience.

b. Education in the culture

Traditionally, every community had its own way of addressing issues and passing the cultural education to the young people. In all communities, there was an initiation that was meant to graduate one from childhood to adulthood. These initiations used to be crowned by certain rituals and a form of education that could take one into the new life. These cultures and traditions have been overshadowed by modern formal education, which has changed the perceptions of issues in most com-

munities. However, some communities have not been very lucky because their environment and nature of life caused them to reject the formal education. This is because the school education confines learners in a single place for some time. Yet for them, they need to move from one place to another while boys are taking care of their animals while girls are being prepared for marriage [7]. There is a way of helping these people; it's by blending education in their culture so that they can also be brought near the rest of the citizens [8]. This blending will of course avail education to this community. Let's think of adult learning, According to Heidorn, Adult education can be given to the group of these people assembled together. However, this idea does not address the issue of equitable education. For quality and equitable Education to be attained, something more must be done, it will involve the education stake holders to think of the technology which will avail education to these people in the simplest and understandable way ever and in the language that all of them will understand. At this point ICT technology can avail the resources to the people in a very convenient way. Also, ICT can be used to sensitize parents on the need of education to young people. This can be done either by installing the giant screen for advertizing whereby the entire advertisement should be from the local setting or simply incur the cost of providing mobile devices to them that will be used to communicate to them in their own language.

c. Bridging the gap between the town and rural/ remote

The gap between the towns and the remote can be bridged by having enough infra structure like roads to make the places easily accessible [9]. The best enlightenment ever is education empowerment. If those people in the rural Kenya can be empowered with education, then the gap will be bridged. Equitable education in the nation bridges the gap, because the rich and the poor will have "a common table to share." Thus if there is any common ground that they can meet and plan and have a way forward is education. Equitable education in the nation will give all communities equal chances of development. However, the traditional way of paper and pen will still be too limited in empowering the communities with equitable education. If the appropriate infrastructure can be put in place and allow learners in the entire nation to be able to access education through ICT and be able to access electronic books instead of the physical text books which are sometimes hard to obtain, then equitable education empowerment will be realized. This will definitely bridge the gap between the towns which is normally associated with "the rich" and the rural and remote Kenya which is associated with "primitivity and poverty".

4. GENDER ISSUES IN EDUCATION: Case of Kenya

The issues of gender are so evident in the current world, and they are the most talked about due their sensitivity. The assumptions that men and women have different roles to play is seen right from the children where boys will be bought truck toys and toy pistols while girls are bought toy babies to play with [10]. This mentality has been transmitted from one generation to another until it has affected carrier choice when it comes to academics. The learners in schools have the mentality that certain courses are for men while others are for women. For example, engineering is a masculine course while

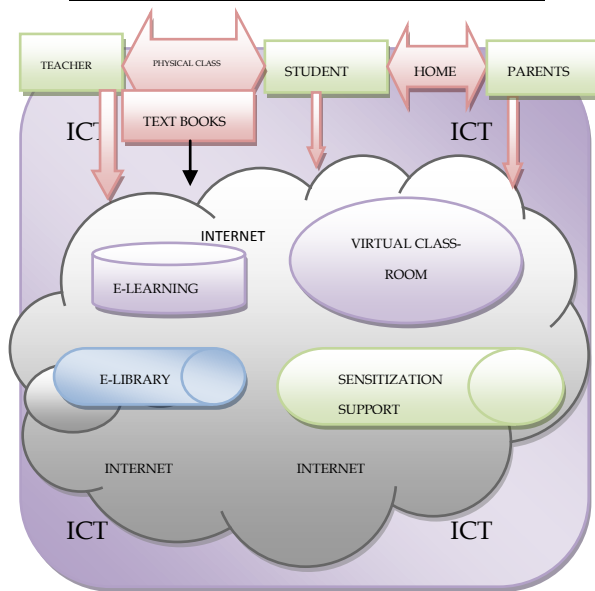
catering is a feminine course. This tradition places a boy and a girl child in different positions in the society such that as a child grows she remains with the same mentality [11]. A case of Nomadic communities in Kenya for example the Samburu, Turkana and Maasai and Pokot have a culture that favors a boy child more than a girl. Therefore a girl child is always given a second priority after a boy because her upbringing subjects her to some "inferior" roles which disadvantages her socially. Her childhood roles only prepares her for an early marriage which is normally for the economical survival of parents because they will be given a herd of cattle. The result of this is denial of academic opportunity to a girl [12]. Similarly, to a boy child, the early childhood preparation is normally to make him a warrior, cattle rustler and a herd's man. Despite the fact that the boy is prepared early to take up such cultural responsibilities, he is well placed to attend school unlike a girl child who has a very narrow chance. With this culture, the literacy gap between a man and a woman is very evident because at least 50% of boys in the rural Kenya do attend classes while only 14% of the girls do manage to go to school [13]. The rest of these children get married at their tender age and others become cattle rustlers so as to fulfill the requirements of the tradition. To arrest such a culture, the communities affected need a sensitization model that will help them be in position to take their children to school. This sensitization can be in the form of civil education, where they can be talked to frequently using their local language by the officers like village elders, chiefs and sub chiefs assigned to them [8]. The Frequency of this sensitization will determine how people will embrace the idea. However, if this sensitization can be blended with ICT, it will produce better results. Look at the case where the facilitator comes with a laptop and a projector, he/ she has created the PowerPoint slides and has a few clips talking about the same. He/ she will easily win the hearts of people with the simple technology he/ she has gone with. This will be more effective if during sensitization everyone who has attended the meeting is provided with a mobile device, and he/ she is shown how to use it. Such that through the device everyone will be receiving a sensitization message either in form of text or voice [14].

5. DELIVERING EQUITABLE AND QUALITY EDUCATION USING ICT.

Equitable education can be attained in the nation by the aid of ICT. It is hard for the government to reach every part of the country and deliver competent and trained educational personnel but it is possible to put the appropriate ICT infrastructure in place. For example, a case of a Chepkitala Primary School inside Mount Elgon forest, a place where even educational officers could not reach so as to administer KCPE national examination in 2013. Candidates were forced to go and sit for their national exams at Kaboywo primary school. It is obvious that such a school does not have enough competent trained teachers because of its accessibility. No vehicle could manage to get to the school, moreover the season was rainy, and so with the kind of terrain and roads, the plane could be the only means which was unfortunately not available. Therefore, for such learners to attain equitable education, ICT can do it very well. Thus, if a better model of learning can be introduced, a model that creates an environment where a teacher and a student can meet either in a physical classroom or in a virtual classroom, and also a student can be able to access the learning materials like text books which are normally scarce in such areas. In the ICT environment, learners and

teachers should be provided with mobile devices that can withstand a challenge of power. By this I mean, most of these areas are not reached with electric power, therefore, if they can be provided with mobile devices that are capable of being charged using solar power and then be used for about 24 to 48 hours before they are recharged again, each learner will be able to attend classes in the same environment with those in the city and even be allowed to sit for the exam online. As a matter of fact, this will widen the scope of thinking of a learner because he/ she will be in the position of accessing any education materials he/ she wishes. A student can as well access pre-recorded videos teaching a certain topic and step by step the learner will grasp the concept [15]. Such a model will definitely bridge the gap of distance, inconvenience especially with the daily activities and the limitation that comes with few teaching personnel in the areas.

The ICT Education Enhancement Model



CONCLUSION

The best way of bringing development in the nation is by empowering citizens with education which fosters innovation. This is only possible if the teacher student ratio in Kenya is bridged this is because it is a real problem which needs urgent intervention. If there are not enough teaching personnel, then the ICT education Enhancement Model can solve the problem. This is because it will help in cutting down the cost of employing teachers to beat the recommended ratio of 1:15, thus 1 teacher for 15 students [16]. The initial cost can be high but the benefits there after are great because it will bring development in the nation. The issue of gender can be addressed very well using this model, because if a girl child is provided with the mobile device, she will be able to attend the lessons from wherever they are. Also, the parents can be sensitized about the same issue gender will not be an issue in the community again.

WAY FORWARD

With the emergence of technology where different technologies have been converged together on one mobile platform to work, it is an opportunity for the government to deliver equitable education to all its citizens despite of the distance. If the

education sector can think of adopting ICT and allow the learners to use it by meeting the first cost, the rest of the days will be okay. I therefore recommend that in these digital times, let the nation embrace the technology and even take it down to rural schools. Because it is out of this that the nation will realize the innovative mind that had never been tapped coming up to build the nation. Let the schools in all regions both primary and secondary schools be equipped with ICT facilities and infrastructure to make use of the technology. Let there be a main server that will contain all the information and required materials in the nation. All learners beginning from the lowest grade in primary to the highest grade in the secondary be provided with mobile devices like smart phones, tablets or laptops depending on the cost [17].

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