

## **Employing The Use of ICT for the Teaching of Gifted Girl-Children in Primary Schools in Sub-Saharan Africa for Sustainable Development by the Year 2030.**

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### **Abstract**

*The significance of Information and Communication Technology (ICT) in shaping and changing the world socially, educationally and economically cannot be over emphasized. In an attempt to tackle extreme poverty and hunger, in September 2000, 189 United Nations member states and some international organizations adopted what was termed the 'Millennium Development Goals' (MDGs). Three of the eight MDGs are related to education of girl-child. These include: promotion of gender equality and gender empowerment, reduction of child mortality and improvement of maternal health. This represents a shared commitment in creating a world that is just, equitable and sustainable global community by year 2030. This paper looked at ICT Education for the girl-*

*child and narrowed its focus further to the use of ICT in teaching the gifted girl-child in public funded primary schools in sub-Saharan Africa to achieve MDGs/SDGs. The paper looked: the importance of Sustainable Development, ICT Education, Primary education and gifted girl-child. It made recommendations like: sub-Saharan African's relevance in the league of nations, and why teachers should be trained and retrained often to avoid disseminating obsolete knowledge.*

**Keywords:** ICT Education, Gifted girl-child, Public funded, Primary Education and Sustainable development.

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## **Introduction**

As a wise saying goes, the only permanent thing about change is 'change' itself. Man is known to be ever evolving. This is one of the reasons why one will see that the use of technology is now the trend of times. Technology has suddenly made the world a global village. Any society that does not key into the trend gets left behind. For developing economies to try to measure up to developed economies, sustainable development is very vital. The effective use of Information and Communication Technologies (ICTs), which include radio and television, as well as newer digital technologies such as computers and the internet have powerful tools for enabling sustainable development. This paper looked at how Sub-Saharan Africa can use ICT teaching to enhance girl-child education with particular reference to the gifted girl-child in public funded primary schools, for sustainable development.

## **Sustainable Development Goals (SDGs)**

There are many definitions of sustainable development. The World Bank has adopted this landmark one which first appeared in 1987: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development the Brundtland Commission 2015). Sustainable

development means a lot of different things to different people at different times. It commonly refers to the use of renewable energy. It entails the use of sustainable mineral along with many other things. It creates a system that is "sustainable", meaning one that can keep going indefinitely into the future. These SDGs as adopted by United Nations member nations are: No Poverty, Zero Hunger, Good Health and Well-being, Quality Education, Gender Equality, Clean Water and Sanitation, Affordable and Clean Energy, Decent Work and Economic Growth, Industry, Innovation and Infrastructure, Reduced Inequalities, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water, Life on Land, Peace, Justice & Strong Institutions and finally, Partnerships for the Goals.

Now that the meaning of sustainable development has been explained and an extensive list of the goals provided, the question is, is sustainable development important to our country? The next section answers this all important question.

### **Why is Sustainable Development important?**

A United Nation's project states that there will be ten (10) billion people living on planet earth by year 2100 (twenty-one hundred). This fact makes sustainable development very important. Below are some other importance of SDGs.

**Protect Technological Resources:** The world wakes up to new technology almost on daily bases. Our lives now revolve around technology for almost every aspect of living. With sustainable development goals set as our priority, more people will be exposed to the use of these technologies which will further translate to the conscious effort of protecting the technological resources one relies on for livelihood. This will take care of goals number nine and eleven on the SDGs 2030 Agenda for Sustainable Development (UN SDGs 2015).

**Agricultural Necessity:** Every human needs food to survive. By the same token, plants need humans to survive too. The animals we rear are not also left out of this equation. That means plants, people and animals interdepend on one another. For any society to catch up with its growing population,

sustainable agricultural practices like mixed cropping, crop rotation and the knowledge of effective use of high yielding crops while protecting the integrity of the soil is of great importance. These practices if employed effectively, will promote large food production for an ever growing population. This will take care of goals number two, twelve and fifteen on the SDGs 2030 Agenda for Sustainable Development (UN SDGs 2015).

**Provide Financial Stability:** SDGs can produce better skills in the management of money, services and resources. Throughout the world, jobs built around the "old" model of unsustainable development are no longer getting place in economies of the future. Financial sustainability development support will take care of goal number eight and nine on the SDGs 2030 Agenda for Sustainable Development (UN SDGs 2015).

Gradually, sustainable development will no longer be an option for communities. It will be the only option for a meaningful way of life. The question now is whether humans will develop the will to make transition toward sustainability on their own accord or if they will have to be forced to make a rapid transition when all of the other options finally run out. ICT education for the girl-child in general and gifted girl-child in particular in public funded primary schools in sub-Saharan Africa is one of the areas sustainable development can be advocated. The next sections give brief explanation on ICT, Primary education and giftedness.

### **The Need for Primary Education**

Primary education is the foundation on which other educational levels are built. This is the beginning and very essential step in achieving the goals of Education-for-All in particular and human skills formation in general (Cunha, Heckman, Lochner & Masterov 2006).

Primary education may be the singular most effective intervention for helping poor children, families, communities, disabled children and nations to break the inter-generational cycle of poverty (Camfield, Crivello, & Woodhead 2009).

Access to formal education is fundamental to man the world over that the Universal Declaration of Human Rights (UDHR) declares that every human has the right to be educated. It further insists that education should be free and compulsory at the basic stages (UDHR 1948).

Some other key conventions that support and lend their strong voice to equal access to education for all children are:

- UNESCO Convention against Discrimination in Education (1960).
- International Convention on the Elimination of All Forms of Racial Discrimination (1965).
- UN Convention on the Elimination of All Forms of Discrimination against Women (1979).
- UN Child Right Convention (1990).
- UN Convention on the Rights of Persons with Disabilities (2006).

The list is endless. However, despite these conventions and declarations, a girl-child education is being paid lip service, talk more of education of the gifted girl-child. Also, despite the value a girl-child may attach to education, in sub-Saharan African for instance, cultural and traditional demands make education of the girl-child as well as that of the gifted girl-child especially, a very difficult task. If education of the girl-child appears so unattainable, is it possible that our society has stopped to rethink the education of the gifted girl-child? The next question is how Information and Communication Technology (ICT) can be used to develop the gifted girl-child to the extent that even after the odds do not allow her to continue with formalized education she can still use ICT education to contribute her quota to her community which will eventually lead to sustainable development.

For proper understanding, the writers will take time out to define what is meant by ICT education and the term 'Giftedness'. Most people in sub-Saharan African interact with ICT almost every day of their live, but most do not even know it. Most people in this region have smart phones, radios and

televisions but do not really stop to explore how these devices can be used as a means of enhancing education, especially in educating the girl-child in general and the gifted girl-children in particular.

### **Why ICT Education?**

*“Information Technology and Communication is society’s efforts to teach its current and emerging citizens valuable knowledge and skills around computing and communication devices, software that operates them, applications that run on them and systems that are built with them” (Mid-Pacific ICT Center).*

This means that basic schools can as well in-cooperate ICT methods in their day-to-day teaching for its gifted girl-children so they can in turn use the knowledge to develop themselves to a level of self-reliance which will further translate to sustainable development of the nation.

Like many other methodologies, ICT methodology in the classroom has its advantages and disadvantages. Below are some advantages of ICT education method for gifted girl-children in particular and all pupils in general.

### **Advantages of ICT Education**

1. ICT education if properly used allows teachers use images which translate to easy teaching and learning that improves retentive memory. Renowned psychologists like Jean Piaget, and Jerome Bruner were known for their work on cognition. They advocated that mental processing in human involves acquiring, storing information, imagination and language development (Piaget 1985). PowerPoint presentation employs software along with projector to present pictures and words that can be used to make teaching and learning an interesting interactive process.
2. With the use of ICT devices like computers, music from radios, television programs etc. to teach, teachers can

easily explain complex instructions and ensure students' comprehension (Ojedokun & Owolabi 2003; Nwokedi 2007). An example of this is a situation in which a Social Studies teacher is teaching about airports or sea ports. The unavailability of these facilities can leave the pupils at a disadvantage. However, with the use of ICT devices, pictures or film clips of these places can be shown to the pupils for better comprehension.

3. Teachers are able to create a lively interactive classroom that makes lessons enjoyable (Rodriguez 2007). Once the pupils can enjoy a teacher's lesson their attendance and concentration will improve. Discussion method has widely been advocated as one of the best teaching method that should be used for teaching (Parker & Hess 2001; Brookfield & Preskill 2012). With the use of ICT, pupils will be encouraged to easily be guided to participate in class discussions.

Though the use of ICT has the above and many more advantages, the writers are not unaware of the fact that it has its disadvantages too. Below are some of the disadvantages:

### **Disadvantages of ICT Use**

Switching teaching/learning process from the traditional lecture-method to an ICT compliant classroom can present opportunities as well as challenges to the teaching/learning. Some of the challenges are:

1. Setting up the devices can be very expensive (Mid-Pacific ICT Center; Ojedokun & Owolabi 2003; Rodriguez 2007). Sub-Saharan Africa has many setbacks like over-population, inadequate social amenities, and insecurity are the order of the day (Osoba 1996; Alao, Atere & Alao 2012). These issues are not only in our day to day affairs but also in our classrooms (Ozaji 1995). These issues and many more like them make it almost impossible for the teachers in this region to make a switch to ICT teaching methods.

2. Lack of experience on the teachers' part can make the use of ICT difficult (Abbott 2001; Fu 2013). For effective use of ICT in education, the classroom teacher needs to go for constant training and retraining. If these teachers are not trained constantly, no matter how sophisticated the ICT devices they may have at their disposal, the gadgets will only be left to gather dust while pupils will be taught with the usual traditional methods. Training and re-training will serve to keep teachers abreast of how ICT can help enhance his/her classroom teaching. It will keep them connected to the world which will further help them plan their lessons in such a way that their products will be self-reliant in any society they may find themselves.

In the long run, the advantages of ICT education in basic schools for the girl-child, especially, the gifted girl-child far outweigh the disadvantages. The next section looks at some specific ways that a girl-child particularly a gifted girl-child can use ICT education for sustainable development for herself, her family and the nation at large.

### **Giftedness**

The term giftedness is a relative and multi-dimensional concept that derives its meaning from various fields. One popular definition of giftedness is...

*"children and youths with outstanding performance or show potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience or environment..."* (Ross 1993 in Reis, 2010, pp xii).



## **Advantages of ICT Teaching method for the Girl-child particularly the Gifted girl-child**

### *ICT literacy and avoidance of child marriage Help Gifted Women Avoid Child Marriages*

**Education and ICT literacy help women avoid child marriages.** As viewed by Oshotimenin (2007), “Child marriage is an appalling violation of human rights and robs girls of their education, health and long-term prospects”. He went further to say “...a girl who is married as a child is one whose potential will not be fulfilled.” Most females including gifted ones usually are not able to use computer and internet facilities except they are educated and well-off (Lewis 2016). The average person in sub-Saharan Africa usually finds it difficult to access ICT. With a little encouragement, even the so called poor girls and gifted girl-children can be encouraged to make effort in the use of ICT. This will enable them keep abreast with information about issues like child brides and how it affects her. Access to ICT facilities will also provide the girl child with information about girls in same situation and she is able to use the information available to her to tackle issues as they affect her.

### **ICT literacy and survival during pregnancy/child birth**

*Education and ICT literacy increase the likelihood of women surviving pregnancy and birth complications:* Female/gifted girl-child education is not only integral to the health of the unborn child; it is also important for the health of the mother (Lewis 2016). In sub-Saharan Africa in particular, pregnancy and birth poses extreme health risks for not only gifted girls but for all women of the region. Education helps play an important role in helping mothers survive this phase of life. With ICT and high levels of education, women are more likely to adopt simple and low cost hygienic practices throughout pregnancy (Lewis 2016). With the enlightenment they see and hear on mass media, women will react more responsibility to health issues. According to a UNESCO report, maternal deaths can fall to 66% if all girls including gifted girls were to have just the basic

primary school education. One can only imagine the percentage raise that will be recorded if basic education is combined with ICT education for the girl child.

### **ICT literacy and family planning**

*Education and ICT literacy empowers women to plan their family:* The level of education a woman receives informs her choices and ability to plan her family (UNESCO). The knowledge of family planning allows women to have fewer children and they are informed on how to space their children in such a way that they are not at a disadvantage (The Education of Girls; The Ouagadougou Declaration 1993). The use of ICT plays a big role here. The female/gifted girl-child can be taught to eradicate poverty especially in sub-Saharan Africa. She can be taught how to use the internet and computer education for better health care; improved education and training; access to job opportunities; engagement with government services; contacts with family and friends; enterprise development opportunities; increased agricultural productivity, etc. According to a UNESCO report, “in sub-Saharan Africa, women with little or no education have an average of 6.7 births on average, compared to 3.9 for women within the region who have obtained a secondary education level”. This goes to demonstrate that female/gifted girl-child education is very necessary. Not only formal education but one accompanied with ICT literacy.

### **Benefits of ICT Teaching Methods for the female/gifted girl-child in Public Funded Primary Schools and Beyond**

- a) **Maintenance:** Youths can develop themselves in the area of maintaining some ICT facilities or equipment; hence, they can become self-reliance whereby they can establish their own firm which could also result to employment of other people. These youths will include girls (some gifted) as well as the boy-child. If properly motivated, the educated motivated gifted girl-children

will be able to strive better than she is imagined to achieve.

- b) **Social Sustainability:** ICTs equipment gives people access to listening and reading news as well as entertainment. It is possible to chat with a friend through internet both audio and visual. This is also applicable to GSM which allows teleconferencing (more than two people communicating at the same time). This can help the girl-child organize themselves into groups that help to educate other young girls/women on how to over-come marginalization, domestic abuse, unemployment, child rearing etc. The moment these anomalies are effectively dealt with the girl child will be able to contribute her quota to the nation.
- c) **Computer Training Centers:** Training centers can be established where girls particularly gifted girl-child and boys who are not computer or ICT literate can have basic knowledge and well train others to be able to work in ICT firms or even establish their own centers. With these, jobs are created for those training the people and as well as creating opportunity for the non-computer literate to have the knowledge.

### **Recommendations.**

1. ICT education is the way the world has embraced. If sub-Saharan African has to continue being relevant in the league of nations, then it needs to make deliberate efforts to follow the same trend.
2. Girl-child education needs to be taken seriously. Gone the days when the man works to sustain his family. All over the world, female children are attending schools, earning fantastic grades, working in jobs were thought were the exclusive reserve of males, African should not be left behind in this area. If Africa is not able to comply with this trend, it will continue to experience brain drain especially as it affects the girl-child.

3. Gifted pupils should not be left to waste time in the classroom. They can be engaged by being given mentoring roles in the classroom. This way, the teacher will be able to get them engaged and the mentoring position will also serve as avenues for these gifted children to develop other skills that will help them beyond the classrooms.
4. Primary education being the foundation of other levels of education should be given serious attention. Once the foundation is solid, children can find it easy to progress smoothly through other levels of education.
5. Parents should be informed on the advantages of educating their girl-children. If parents can see the education of the female/girl-child as being a long term solution to poverty alleviation, many may consider avoidance of sending them off to early marriages.
6. Education at the primary school level should be made free and compulsory. If parents are relieved the burden of having to pay school fees many may not look at education of girl-child as a 'waste'.
7. Above all, the teachers who will be engaged in the classroom with these children should be trained and retrained as often as possible. This way, they will be kept abreast of the constant changes happening in the world around us. That will prevent educators from disseminating obsolete knowledge.

### **Conclusion**

ICT has become a very vital aspect of our everyday life so it cannot be wished away. For any community to effectively use ICT to its advantage then the populace need to know how to employ the use of ICT especially for sustainable development. Educating people on the use of ICT education from the primary school brings about grounded education which other levels eventually build on.

ICT education for female/gifted girl-child will help a great deal for the classroom teacher to have a more functional classroom.

Education in such a classroom will easily be able to achieve the pupil centered teaching/learning methods of education. Success in the classroom will translate to success in the community. Success in the community will naturally lead to sustainability.

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