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# ICT and Education of the Child in the 21st Century

**By**

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**Abstract**

*This topic is quite timely as ICT and Child education has received criticism overtime but today it has become imperative that the 21st century education cannot be devoid of it. Information and communication technologies (ICT) have become commonplace entities in all aspects of life. In the past twenty years, the use of ICT has basically changed the practices and procedures of nearly all forms of endeavour within the educational system. Education is a very socially oriented process and quality education has traditionally been associated with strong teachers that maintain high degrees of personal contact with learners. ICT supports this tradition by lending itself to more student-centred learning settings. As the world is moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. The writers enumerated reasons why ICT cannot be ignored and cannot be accepted by choice in education.*

ICT stands for 'Information and Communication Technology' and it refers to technologies that provide access to information through telecommunications. ICT can also be defined as 'anything which allows us to get information, to communicate with each other or to have an effect on the environment using electronic or digital

equipment' (Sharmaine, 2013). In relation to child education, the term ICT could include computers hardware and software, digital cameras and video cameras, the Internet, telecommunication tools, programmable toys and many other devices and resources.

One of the most common reasons for investing in information and communication technologies in education today is the desire to empower learners with 21st Century skills aligned with the needs of a knowledge economy (Organization for Economic Cooperation and Development OECD, 2012). Although there are different definitions of what 21st century skills are, one key principle is that ICT is so pervasive in today's global society that anyone who does not acquire basic familiarity with modern ICT is at a disadvantage. This is particularly true in developing countries where ICT skills are seen as one of the surest ways to ensure economic growth and a sustainable global economy (World Economic Forum, 2009).

ICT in education and fostering 21st Century skills involves more than just computer literacy, which was much of the focus of ICT in classrooms in the 1980's and early 1990's (Newhouse, 2002). School-level expectations driving the adoption of ICT in education include: increased quality of learning through access to more and more effective learning resources; more student-centered, active and constructivist learning environments (Newhouse, Trinidad and Clarkson, 2002; Jonassen, Peck, and Wilson, 1999); improved critical thinking and analytical skills (Jonassen et al., 1999 in One Laptop Per Child OLPC report), enhanced productivity through classroom and system management tools (Hepp, Hinostroza, Laval, Rehbein,, 2004; Jhurree, 2005), and increasing student motivation, student productivity and learner independence (Newhouse et al., 2002; Passey, Rogers, Machell and McHugh, 2004). At a broader level, national ICT in education policies and strategic plans are often linked to such ambitious development goals as: supporting economic growth, promoting social development, advancing education reforms (including promotion of "21st century skills"), and supporting education management (Kozma, 2005; Jhurree, 2005).

It is important to realize that 21st century schools must recognize the critical need for developing 21st century skills. However, it is believed that authentic education addresses the "whole child", the "whole person", and does not limit our professional development and curriculum design to workplace readiness. 21st century skills intends to skew the curriculum into interdisciplinary, integrated, project-based, and more. As project–based curriculum Tony Wagner in his book, *The Global Achievement Gap* advocated by enumerating seven survival skills which it will utilize. These skills are:

a. Critical Thinking and Problem Solving
b. Collaboration across Networks and Leading by Influence
c. Agility and Adaptability

d. Initiative and Entrepreneurialism
e. Effective Oral and Written Communication
f. Accessing and Analyzing Information
g. Curiosity and Imagination

**Debate on ICT Use in Early Childhood Education**

ICT use in early childhood education used to be a controversial topic. Some authors viewed ICT as a threat to playful learning and children's development (Cordes and Miller 2000, Healy2003). They argued that ICT use leads to lack of exercise, isolated lives, poor concentration, impaired language development, etc. On the contrary, other authors promote the use of technology and argue that technology is a useful tool for learning (Bolstad 2004, Hatzigianni andMargetts 2012).They pointed to a growing body of evidence which underlines the positive effects of ICT in early childhood. According to Hatzigianni and Margetts,(2012) ICT presents a new space for exploration and discovery to young children, offers challenging activities and responds to children's curiosity.

Bolstad, (2004) indicated that ICT already has an effect on the people and environments surrounding young children's learning and, as such, these technologies offer new opportunities to strengthen many aspects of early childhood education practice. For example, it can stimulate creativity and play, cognitive development, social interaction, etc.

**Reasons for Embracing ICT**

Students are facing many emerging issues such as global warming, famine, poverty, health issues, global population explosion and other environmental and social issues. These issues lead to a need for students to be able to communicate, function and create change personally, socially, economically and politically on local, national and global levels.

Even kindergarten children can make a difference in the world by participating in real-life, real-world service learning projects. Therefore, in this era no one is too young, or too old, to be heard and create change that makes the world a better place.
Emerging technologies like ICT and resulting globalization also provide unlimited possibilities for exciting new discoveries and developments such as new forms of energy, medical advances and restoration of environmentally ravaged areas, communications, and exploration into space and into the depths of the oceans. The possibilities are unlimited.

Syed, (2008) in his write up "ICT as a change agent for education" made a very strong assertion; ICT helps in providing a catalyst for rethinking teaching practice

developing the kind of graduates and citizens required in an information society; improving educational outcomes (especially pass rates) and enhancing and improving the quality of teaching and learning. ICT can help deepen students' content knowledge, engage them in constructing their own knowledge and support the development of complex thinking skills (Kozma, 2005; Kulik, 2003; Webb and Cox, 2004).Studies have identified a variety of constructivist learning strategies for instance, students work in collaborative groups or students create products that represent what they are learning that can change the way students interact with the content (Windschitl, 2002). Fister,and McCarthy,(2008) also depict the power of tablet PCs to improve mathematics instruction. ICTs have the potential for increasing access to and improving the relevance and quality of education. The use of ICT in educational settings, by itself acts as a catalyst for change in this domain. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Reeves and Jonassen, 1996), the fundamental truth is that the influence of technology on supporting how students learn will continue to increase.

**Present Challenges**

"Your assignment, should you choose to accept it" is to take education truly into the 21st century. It is not enough to say that schools are already living there. Technically it is the 21st century, but schools are not there, and major challenge now is to reinvent schools for the 21st century - for the sake of the children, students and the welfare of the world. Making such a paradigm shift is not easy. After all, when anyone thinks of education, is usual to think of what was known as school - the way it has always been. That is how parents, policy makers, politicians and many students think of school. Is true that there are beclouded challenges ranging from finances, poor infrastructural development and poor governance in Nigeria system but there has to be a paradigm shift to 21st century education.

In Nigeria, study has shown that the rate at which youths are engaging in ICT related activities is sky rocketing. Federal government has significantly tried in various ways to see that Nigeria is not left behind in ICT. This has been achieved by establishing the federal ministry of communication technology which some states have followed suit. The establishment of Nigeria Communication Commission (NCC) saddled with the responsibility of regulating the activities of all mobile communication bodies popularly known as GSM is a clear manifestation of government achievement.
Today Nigeria has upgraded in satellite communication strength from old 2G to 3G and now almost embracing 3.5 – 4G. This is a huge achievement even though not perfected. Hence Nigerians must compliment this effort by taking advantage of it to enrich the educational system. Students can now improve their academic activities, access current academic resource materials with just a click. With ICT at everybody's

disposal, 21st century education in Nigeria is a possibility, it is no longer Europe or USA only but right here in Nigeria and right here.

So what is 21st century education? It is bold. It breaks the mold. It is flexible, creative, challenging, and complex. It addresses a rapidly changing world filled with fantastic new problems as well as exciting new possibilities. Fortunately, there is a growing body of research supporting an increasing number of 21st century schools.

ICT is uppermost motivator for 21st century school and children are filled with growing curiosity every day. They come home with questions which only modern technology hold the answer; is either these answers are provided at home or they look for it themselves. Remember that ICT provides knowledge in all aspects (good and bad). Therefore, desire and ability to embrace it is the only solution to these curious questions and the choice to give them the good becomes possible.

The fact still remains that for teachers and school children to be successful in the 21st century classroom, they need a larger school culture in which there is forward thinking and a culture which supports effective technology integration. Administrators must provide the resources and training needed for effective teaching and learning with technology and must seek to continue to improve how technology is used in the educational environment.

**Summary and Conclusion**

Despites the challenges that have besieged us, the adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access education regardless of time and geographical barriers. It can influence the way children are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement.

In conclusion, it is evidently clear that the complexity of 21st century school and 21st century child requires the use of ICT. A wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of children. The entire paper strongly suggests successful ICT integration in education.

**Recommendations**

Now that it is proven beyond doubt that ICT cannot be a matter of neglect but of urgency, it is recommended as follows;

1. Parents, stakeholders and Proprietors must see this as a clarion call which does not require further consideration than putting hands on deck to support the establishment of ICT centers in schools.
2. Support should be sought from development partners, international donors and philanthropists as it is now clear that the future of the children is at stake if ICT is not immediately made available for them.
3. Government should as matter of urgency come to the rescue of child education by providing ICT equipment in schools. This should be done without discriminating between public and private schools, knowing that educating a child means educating a nation.
4. Proprietors should insist on seeing that school curriculum fully reflect ICT as a subject and not just an application. It should be taught with some apt of deliberateness.
5. Teachers must be encouraged to embrace ICT and be computer-literate. This will go a long way in helping them cope with teaching their subjects; bearing in mind those children could ask them anything at any time now that every fabric of school relates to ICT.

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