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ICT and its Effect on Education

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Abstract: During the last decades, considerable resources have been invested in hardware, software, connections, training and support actions under the scope of improving the quality of teaching and learning. A major tenet of the policies that supported the introduction of information and communication technologies (ICT) in education was that they can become catalysts for change. Undoubtedly, some countries have made considerable progress in bringing networked ICT into education and made it possible for teachers and learners to use them on a daily basis. In many other cases, however, implementation policies have not been a consequence of systematic analysis and reflection. As a consequence, we still know little about the impact and effectiveness of ICT in education. To close this gap, this paper will be examining the positive and negative impact of ICT on education. Keywords: Information and Communication Technology (ICT), education, performance.

I. INTRODUCTION

Information and communication technology (ICT) is one of the most important driving forces promoting economic growth in the economy. However, there is less of a consensus among economists on whether the impact of ICT also stems from higher total factor productivity (TFP) growth and improved efficiency of production (due to a better educated population). During the last two decades countries have invested heavily in ICT. Indeed, the use of ICT in education and training has been a key priority in Nigeria in the last decade, although progress has been uneven. ICT has had a major impact on the education sector, on organisation and on teaching and learning methods. Yet there are considerably different ICT expenditure levels between institutions within the country. Some schools have embedded ICT into the curriculum, and demonstrate high levels of effective and appropriate ICT use to support teaching and learning across a wide range of subject areas. However, some other schools are in the early phase of adopting ICT, characterised by important enhancements of the learning process, some developments of e-learning (ICT-enabled learning), but without any profound improvements in learning and teaching

One puzzling question concerns the effective impact of these technologies on educational outputs and outcomes. As ICTs are being increasingly used in education, indicators to monitor their impact and demonstrate accountability to funding sources and the public are ever more needed. Indicators are required to show the relationships between technology use and educational performance. ICT can be defined as computer based tools and techniques for gathering and using information. It encompasses the hardware and software, the network and several other devices (video, audio, photographic camera, etc) that can convert information, images, and sound into common digital form. It includes electronic information in processing technologies such as computer and internet, as well as fixed-line telecommunication networks. ICT is an eclectic application of computing, communication, telecommunication and satellite technology (Yusuf, 2000). The information accessed through digital technologies can promote innovation, increase productivity and enrich the quality of lives. ICT in education is broad, deep and rapidly growing field of study (Moursund, 2005). ICT utilizes a broad range of technologies that are applied in the process of collecting, storing, editing, retrieving and transfer of information in various forms. One of the major factors or agencies of national development and global competitiveness is Education.

II. POSITIVE IMPACT OF ICT ON EDUCATION ICT

Has increasingly played a critical role in all fields of human endeavours. It is being used globally to translate ideas into realizable goals and develop same into concrete achievement. ICT is readily useful in the areas of agriculture, engineering, medicine, law, architecture, aviation, commerce, insurance, banking and finance as well as maritime activities. ICT has the potential to contribute to substantial improvements in the educational system. However to date, relatively little of this potential has been achieved in spite of ICT having significant impact on traditional school system. They have provided innovation for teaching and learning, and have engendered advances in research about how people learn, thereby bringing about rethinking the structure of education (Lopez, 2003). It is also widely acknowledged that ICT can be used to improve the quality of teaching and learning in the school system.

The prevalence and rapid development of ICT have transformed human society from the information age to the knowledge age. In fact, ICT is becoming a natural part of man's daily life. Thus its use in education is becoming a necessity. Moreover, the pace of change of ICT field currently exceeds the pace of progress of making effective use of ICT in education. There is a lot of transformation through ICT. There is an international consensus on the importance of intellectual input in creating value, underlining the need for investment in education and skills in general with a special focus on ICT skills and research development. ICT has changed the face of modern researches, requiring research organizations to be linked to each other through advanced network that is connected to the rest of the world.

ICT provides resources and services to support the education, research and public services missions to universities. ICT also enhances the development and implementation of policies and procedures necessary to ensure the effective, secured and appropriate use of universities information resources and services. ICT provides a lot of services for students including distance education programmes, inexpensive printing, cell phone plans, internet connection, free dial-up, technology equipment, rentals classroom media stations, etc. Lecturers and students get relevant materials needed through the Internet. Such quality materials are used in equipping the students and upgrading their knowledge in their field of study.

ICT brings some very powerful aids to translating theory into practice. Two of these aids are computer-assisted learning and distance education. These days, computers with Internet connectivity have become common household items. Students often have access to: pure educational, designed specifically to provide instruction to help the user learn; communication tools and reference materials including e-mail, web, encyclopedia, books, and other reference materials; pure entertainment, that is, games that are not designed to be educational; tools such as word processor, graphics software, e.t.c. Cellular phones, household computer games and toys, television, CD players and recorders, video tape players and recorders, are now commonplace. When students grow up in an ICT environment, they may gain many hours of experience using ICT facilities. ICT is an example of a technology that is a powerful change agent. In the view of ICT is a mind tool. ICT as electronic technology for collecting, storing, processing (editing) and communicating (passing on of) information in various forms. It is an applied technology of Science and Technology for effective and efficient generation, storage, organization, protection and dissemination of information.

It is evident that ICT incorporates and extends some of the power of reading, writing and arithmetic. It facilitates the automation of many mental activities. ICT has proven to be a valuable aid to solve problems and accomplishing task in education, business, industry, science and many other human endeavours.

Other ways in which ICT can be used in education as stated include:

- i. Supporting conventional classroom work; the teacher could ask his/her students to use ICT approach;
- ii. Helping in the design and development of learning materials. A lot of materials can be downloaded from the Internet. Such materials must however be adapted to suit the specific instructional objectives;

- iii. Accessing electronic teaching materials such as books, journals. These can be accessed, stored and analyzed by the use of ICT;
- iv. Accessing virtual library “stocks” electronic versions of books’ journals;
- v. Giving or providing access to the world of resources especially in electronic form;
- vi. Playing a key role in educational administration. Students’ data, personnel administration, purchasing and supplies, advertisement, etc can be handled with ease using ICT;
- vii. Facilitating independent study and individual instruction especially on the open distance-learning programme;
- viii. Making learning more vivid and engaging;
- ix. Assisting the teacher in assessment and testing; and
- x. Bringing a permanent solution to brain drain problems as we now live in a global village.

ICT is now a global phenomenon. It has been embraced all over the world due to its importance. Governments all over the world are harnessing the rich potentials of ICT and are using ICT as a tool for educational developments, economic recovery and wealth creation. It is very useful in tackling the ills and problems facing the educational system. Today, no nation can attain its height educationally, economically and socially without ICT. ICT has also increased the ability to perform ‘impossible’ experiments’ by using simulations, as well as the possibility for students to have individual learning programs within a topic, rather than everybody having to do the same thing at the same time at the same pace. More able students can be given more challenging work; less able students can access remedial lessons.

III. THE NEGATIVE IMPACT OF ICT ON EDUCATION

There are large costs involved and poorer students and educational establishments may end up being disadvantaged. This is often referred to as being a factor in the digital divide. Students, and sometimes teachers, can get hooked on the technology aspect, rather than the subject content. Facebook, Twitter, Youtube, Instagram and other social media networking sites can be a distraction to living and learning in the real world. Advertisers take advantage of the big data that exists in the interface of users of these networking sites and market their various goods and services to the users. Educational institutions are not except from this marketing effort of the big data houses such as Google, Microsoft, Yahoo etc. There are services geared toward the institutions offering them free Internet hosting and data storage space in the cloud in exchange for access to their data availability for analysis and advertising.

IV. CONCLUSION

The advantages of ICT on education overweighs the disadvantages ICT, therefore it can be said that ICT has a positive impact on education but nevertheless the manner in which the subject is taught has a larger effect than the mere use of ICT. i.e. if the teacher does not adapt their methods in order to make best use of ICT, then the purpose of using ICT becomes defeated, also the attitude of the educational establishment also seems to have a greater effect, when the people running them do not have the knowledge and experience, or often the money, to enable widespread and effective use of ICT in their schools, it becomes a disadvantage. Finally, the attitude of society and government has a large impact of how ICT is perceived and thus how effectively it is used. Countries where the government encourages ICT usage and where the majority of the people use ICT on a daily basis are likely to make better use of ICT in education as well as in the larger society.

References

1. Bamigboye, O.B. Aderibigbe, N.A. & Buraimo, O.K., (2007). Information Communication and Dialogue in conflict management: A study of Olabisi Onabanjo University Students and Ago- Iwoye Community Conflict, *Journal of Library and Information Science (JOLIS)*, 4 (1 and 2), 23 – 38.
2. Butcher, N. (2003). *Technological Infrastructure and Use of Information and Communication Technology in Education in Africa: An Overview*, Paris: ADEA.
3. Galbreath, J. (2000). Knowledge management technology in education: An Overview, *Education Technology*, 40(5), 28 -33.
4. Lanser, K. & Vincent-Lancrin, S. (2005). The impact of Information and Communication Technology on tertiary education: advances and promises, A paper presented at the OECD/NSF/U, Michigan Conference Washington DC
5. Lopez, V. (2003). An exploration of the use of information technology in college classroom, *College Quarterly*, B(1) <http://www.Collegequarterly.Ca/2003-vol06-num01-fall/lopes.htm>. Retrieved November 1st 2014.
6. Magbagbeola, N. O. (2004). *Information and Communication Technology in Nigeria: A Critical Assessment*.
7. Moursund, D. G. (2005). *Introduction to Information and Communication Technology in Education*, University of Oregon, Eugene, [http://uoregon.edu/~7emoursund/Books/ICT/ ICTBook.pdf](http://uoregon.edu/~7emoursund/Books/ICT/ICTBook.pdf). Retrieved November 1, 2014.
8. Ofojebe, W. (2006). *The Place of Teacher Education in Manpower Development in Nigeria*, Onitsha: West and Solomon Publishing Co. Ltd.
9. Okeh O. D. & Opone, M. C. (2007). Information and Communication Technology (ICT): A veritable tool for national Educational Growth, *Journal of Academics*, 2(3), 234 – 246.
10. Yusuf, O. Y. (2000). Integrating Information and Communication Technologies (ICT) in Nigeria tertiary education, *The African Symposium, An on-line Journal of African Educational Research Networ.*