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THE IMPORTANCE OF INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) INTO INSTITUTIONS OF HIGHER LEARNING (IMPLICATION FOR EFFECTIVE SERVICE DELIVERY)

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Abstract

The importance of integrating information and communication technology into higher institutions of learning cannot be overemphasized considering the need to enhance efficiency and effectiveness to capture new ways of knowledge, actualization of power to every individual in the school, community, society and Nigeria at large. Changes in the economic and social fundamentals calls for transformation in the skills, attitudes and capabilities of the masses in the country. Today, more than ever before in history, the wealth and poverty of nations depend on the quality of higher institutions. Higher institution is the driving force for economic and social development of any nation. Considering this, it is important to find ways to make higher institutions of learning good quality, accessible and affordable to all, using the latest information and communication technologies. It is against this background the paper identified and explained four main rationales for the introduction of information and communication technology into higher institutions of learning, explained e-learning through information and communication technologies, benefits of information and communication technologies in higher institutions of learning, and above all explained possible drawbacks of information and communication technology in higher institution of learning. Conclusions and recommendations were made which include that government at all level should provide adequate funds for information and communication technologies in higher institutions of learning and that care should be taken to influence the attitude and beliefs of stakeholders in the country.

Introduction

Information and communication technology (ICT) is a term that involves all types of technologies for manipulating and communicating information. The knowledge and approaches has a lot of positive impact on individuals, communities, societies and countries at large and if there must be effective development in the country, there should be a new technological innovation that will promote information to every individual, societies and country at large.

In the country today, the wealth or poverty of nations depends on the quality of higher institutions of learning. Those with a larger repertoire of skills and a greater capacity for learning can look forward to life times of unprecedented economic fulfilment, while in the coming decades the poorly education face little better than the already prospects of lives of quiet desperation Solomon (2010). Quality as the name implies is an integrated feature of higher institution system all over the world. According to Doncard (2011), the nation at large is continually faced with quality initiatives and controls not only from central governments but also from awarding institutions. He went further to say that defining quality in higher institution of learning has proved to be challenging task. Some scholars believe that quality of education is rather vague and controversial concept and quality is a notoriously ambiguous term. In the widest view, quality of higher institutions can be seen as a set of elements that constitute the inputs process and output of the education system, which provides services that completely satisfy both internal and external strategic constituencies by meeting their explicit and implicit expectations Johnson (2011).

Dancard (2012) stated that the effective learning and quality of any higher institution can be broken down into five different but related dimensions:

i. Effective learning and quality of high institutions (e.g. high standards).

ii. Effective learning and quality of higher institution as quality consistency (zero defects)

iii. Quality as fitness for purpose (fitting customer specifications)

iv. Quality as value for money and lastly

v. Quality as transformational (an ongoing process that includes empowerment and enhancement of the customer satisfaction).

Economic and social development of any country depends largely on the driving force of education. In view of this, it is important to find ways of improving quality of education especially higher institution by making it accessible, available and affordable to every citizen in the country. The rapid development of information and communication technologies (ICTs) has witnessed a revolution in the last two decades. This in turn has changed the dynamics of various industries, also influenced the way people interact and work in the society Isable (2011). Information and communication technology (ICTs) have the potentials to remove the barriers that are causing the problems of low rate of higher institution in any country and this can be achieve through the use of internet . It can be used as a tool to overcome the issues of costs, less numbers of teachers as well as poor quality of higher institution in terms of time and distance barriers Ugwu (2010).

Four main rationales for the introduction of information and communication technology into higher institution of learning

In this recent time, people access knowledge through information and communication technologies (ICTs) such as teleconferencing, e-mail, audio conferencing, television, radio broadcasts, to keep pace with the latest developments interactive radio counselling, interactive voice response system, audiocassettes and CD-ROMs. Information and communication technology always plays a critical role in the country's economic and social growth and development. Higher institution of learning does not only increase the productivity of skills of the individual but also his earning power Donald (2012). Donald maintained that information and communication technology in the higher institutions of learning gives a sense of wellbeing as well as capacity to absorb new ideas, increase in the social interaction, give access to improve health and provides several more intangible benefits.

Tale 1: four rationales of information and communication technology in the higher institution of learning according to Sharlon (2012).

Rationale	Concepts
1. Social Rationale	In this social rationale of information and communication technology, students accept the concept and roles that technology now plays in the community, society and country at large and the need for familiarising with such technologies.
2. Vocational Rationale	Information and communication technology in the vocational rationale prepares students for jobs that require skills, technological know-how in the field of technology.
3. Catalytic Rationale	In the catalytic rationale, it performs utility of technology to improve performance and effectiveness of teaching and learning, management and social activities of the students.
4. Pedagogical Rationale	Pedagogical rationale emphasis on the utilization of technology in enhancing teaching and learning flexibility and efficiency in curriculum delivery.

In the above rationales, it can be rightly pointed out that information and communication technology including laptops, wireless connected to the internet, personal digital assistants, low cost video cameras, and cell phones have also become affordable, accessible and also integrated in large sections of the community, society and the world at large. It has restructured organizations, promote collaboration, increase democratic participation of citizens, improve the transparency and responsiveness of governmental agencies, make education and healthcare more widely available, foster cultural creativity, and enhance the development in social integration.

In the higher institutions of learning, a teacher can only teach students to participate in the growth process through information and technology especially in this era of rapid change. Information and communication technologies can be used as tools in the process in the higher institutions of learning. For instance, informative tool such as audio, video provides vast amount of data in various formats. To manipulate the data and generate analysis, constructive tool of information and communication can be applied. In the higher institutions of learning, communication tool can be used to remove communication barriers such as space and time. Information and communication technologies in the higher institutions of learning allow for the creation of digital libraries where the students, lecturers, and professionals can access research materials and course material from the networking of academics and researchers and hence sharing of scholarly materials Akinloye (2009). Akinloye maintained that the use of ICTs in the higher institutions of learning develops higher order skills such as collaborating across time and space and solving complex real world problems.

E-learning through information and communication technologies

The extent through which information and communication technologies have promoted e-learning cannot be overemphasized. Information and communication technologies lead to e-learning which allows higher and greater integration. According to Ceeda (2011), information and communication technologies challenge the concept of face-face traditional education which has been regarded as being superior method of education. The web and the internet are core tools of ICTs to spread education through e-learning. He went further to say that, e-portfolios, cyber infrastructures, digital libraries as well as online learning object repositories are all components that creates a digital identity of the student and also connect all the stakeholders in higher education. He went further to say that, the above components facilitates inter-disciplinary research and the experiences of many teachers who are early innovators in the use of ICT motivate students and teachers to be ICT compliance. Umeh (2012) maintained that the use of ICT can improve performance, develop relevant skills especially in the disadvantage communities, improve teaching as well as administration. Umeh went further to say that ICT also improve the quality of education especially in the higher institutions of learning by facilitating learning by doing real life conversation, delayed time conversation, direct instruction, self-learning, problem solving, information seeking and analysis, also critical thinking.

Information and communication technologies provide a platform for sharing knowledge and skills which can be used for the betterment of programme delivery in terms of replication of best practices. This will in turn help researchers by providing information, networking, online journals, libraries and data as well. Interaction in all the different aspects of the education system such as teaching, collaboration, debates makes it possible to hold great promise for the future Kudu (2010).

E-learning allows delivery of dialogue and feedback over the internet. It also allows mass customization in terms of content and examinations. E-learning especially in the higher institutions learning provides access to the best gurus and the best practices of knowledge available. The possibility of leveraging the online environment to facilitate teaching methods like role-play across time and distance is easy. It can also facilitate the development of scenarios, which can be rarely witnessed in practice. Evidence through practical experience in the world indicates that investing in ICTs contributes mainly to increasing human and knowledge capital which benefits the industry as well. Investment in production of information and communication technology (ICTs) is a more effective tool for development of the whole communities, societies and nation at large. The research findings of Sybil (2012) revealed that technology can support pedagogical, curricular and assess reforms, which intend to support the process of knowledge creation. In education, students and teachers plan their learning activities and build on each other's ideas to create new skills and knowledge. This will in turn facilitate monitoring of their progress in understanding and also in preparation for lifelong learning as well as participation in the information society. The research of Akor (2011) has proven that apart from the cost effectiveness, ICTs are most effective to tackle problems like increasing number of students in each class especially in the higher institutions of learning. He went further to say that information and communication technologies (ICTs) enable distance learning to provide technological knowledge and benefits. The cost of providing distance learning also depends on several factors. The factor which includes geography and communities targeted breadth of course and class size.

Information and communication technology (ICT) is the medium that can conveniently offer education as a service. It can also increase and contribute to mass education substantially and creates competition among the higher institutions of learning, hence providing and improving the quality and quantity of education output (Jossy 2011).

Benefits of information and communication technologies in higher institutions of learning
It is obvious that the backbone of information and communication technology is computer. The benefits of information and communication technologies can be seen in all sectors. Be it the education sector, banking sector, post office, large and small scale industries, medical sector, research department and so on. In the education sector especially in the institutions of higher learning, the benefits of information and communication technologies can be seen among the following categories, The include;

i. Students.

ii. Teachers.

iii. Government.

Students – information and communication technologies especially internet, commonly known as "world wide web" has some very useful applications in our day to day life, more especially in the life of students. Internet has helped student especially in the area of admission in a local or foreign institutions, collection of geographical information of any region, check the results of examinations, transfer money from one bank account to another, send e-mail, have instant chat with anybody in any corner of the world and so on.

According to Nansel (2011), information and communication technologies have potentials to improve students' access to better education. Many schools and vocational training centres in develop societies are taking advantages of ICTs to provide distance learning especially that of higher education and to train teachers in new instructions methods. Information and communication technologies have actually change the way classrooms operate through integrating multimedia textbooks, online research and students presentations that made the learning process more interactive and participatory. Information and communication technologies in the life of students have increased access to information, skills, knowledge and technical know-how of students. It has also increase flexibility of content and delivery, combination of work and education, learning-centred approach as well as high quality of education and new way of interaction on students.

Teachers – there is a worldwide need for integrating information and communication technology (ICTs) into higher institution of learning in order to improve the quality of teaching and learning especially on the part of teachers. Teachers need support in using and integrating information and communication technologies (ICTs) into the curriculum and teaching methods. Teachers who perceive greater ICT related support being available to them use technologies in their teaching much better (Adams 2010). Information and communication technologies especially audio and, audio-visual materials have improve the quality and methods of teaching students.

According to Ubong (2010), information and communication technologies have promoted teachers' high quality, cost effective professional development in the workplace, upgrading teachers skills, increased teachers productivity, development of a new teachers teaching culture, sharing of cost and of training time with the teachers and finally, increased portability of training of students.

Government – the effective use of information and communication technologies (ICTs) to seek life building skills, business opportunities, good governance, commerce, communication is essential to both human and national development. Life building skills are special competencies government require to correctly perform a task or deal with specific situation (Porter 2012). These skills include communication skills, negotiation skills, goal-getting skills and so on. The skills mentioned will bring about economic development of a nation and promotion of good governance. Information and communication technologies (ICTs) will increase the capacity and cost effectiveness of education and training system, provide target groups with limited access to conventional education training through government initiatives, support and enhance the quality and relevance existing government policies, ensure the connection link of education and government policies and finally, promote innovations and opportunities lifelong policy (Baron 2012).

Possible drawbacks of information and communication technology in higher institution of learning
Information and communication technology offer a lot of benefits but there are some risks of using it in higher institutions of learning which have mitigated through proper mechanism. Internet causes distractions, students most times divert to other bad sites which expose them to a lot of bad things such; pornography, online fraud, online dating e.t.c. Many female students have been misled, some of them lost their focus on their mission in school due to this online dating while the male students will abandon their academic assignments and involve in viewing naked pictures of women online. Information and communication technology may lead to the creation of a digital division within class as students who are more familiar with ICT will reap more benefits and learn faster than those who are not technological savvy (Greg 2009). He maintained that information and communication technology may shift the attention from the primary goal of the learning process to develop ICT skills, which is the secondary goal. It can affect the bonding process between the teacher and the student as ICT becomes a communication tool rather than face to face conversation thus the transactional distance is increased.

Since not all teachers are experts with ICT, there may be tax in updating the course content online which can slow down learning among students.

The potential of plagiarism is high as students can copy information instead of learning and developing their own skills.

Finally, the cost of hardware and software can be very high which hinders students from making use of them.

Conclusion
In this era of rapid growth in the area of information and communication technology, changes in curriculum do support fundamental economic and social transformation in the society. Such transformation requires new kind of skill, capabilities and attitudes, which can be developed by integrating information and communication technology (ICT) in the higher institutions of learning. Information and communication technology can affect the service delivery of higher institution and enable wider access to skill acquisitions. It can also increase flexibility so that learners can acquire

education regardless of time and geographical barriers. The use of these technologies in teaching influences the way students are taught and how they learn. This shows that the methods would prepare the learners for lifelong learning also improve the quality of learning and thus contribute to the growth and development of the nation.

Successful implementation of ICT in the higher institutions of learning will lead to change, influencing and empowering teachers and supporting them in their engagement with students rather than acquiring computer skills, software and equipment.

More importantly, proper control and licensing should be ensured so that accountability, quality assurance, accreditation and consumer protection are taken care of ICTs which may lead to promotion of quality education especially in the higher institutions of learning.

Recommendations .

> Information and communication technology (ICT)requires a network of governing system to keep it from devouring societies.
> There is need for shared vision among the various stakeholders and a collaboration approach should be adopted.
> Care should be taken to influence the attitudes and beliefs of the entire stakeholder in the implementation of ICT.
> Government should provide funds for ICT education especially in the higher institutions of learning as well as other essential services.
> There should be a creation of libraries to provide information centres whereby students can retrieve information as required, multimedia system facilitate the searching and they can be updated just as the hard copies on shelves.
> Finally, the federal ministry of education should mandate the NUC, NCCE and NBTE to establish information centre to enable both the teachers and students exchange ideas with their counter parts all over the world.

References

Adams, M.H. (2012). Level of acquisition of science process skills among year two senior secondary school students. *Journal of the science Teachers Association of Nigeria. 28(2), 45-52.*

Akinloye, J. (2009). ICT, a tool for teaching and learning of geography education. A paper presented at the 2nd annual conference at Ibrahim Babangida University Lapai, Niger State.

Akor, P.A. (2011). Instructional Video Tape Recorder as a means of classroom communication for National and ethical orientation. *African journal Education and information Management. 9(3) 86-74.*

Baron, C. (2012). Aspect of distance education in Maritime Education and Training. London: National Institute & wwu publishers.

Ceeda, P.O. (2011). Computer education and special needs reaching Massachusetts: Addison Wesley.

Dancard C.P. (2011). Internet tutorials. Retrieved 18th March, 2011 from www.internettutorials.com

Dancard, C.P. (2012). Helping teachers use computer. Retrieved May 15th 2012. From www.helpingteaching.com

Donald, M. (2012). Effective instructional tools: Creating interest in classroom. Retrieved March.

Greg, P. (2009). Freedom to learning. Columbus, OH: Merrill.

Isable, C.J. (2011). An instructional technology present and future. A survey of Teacher's usage. State University of West Georgia.

Johnson, F. (2011). The mass media in Distance Education in Nigeria in the 21st century. Journal of Distance Education. P. 68.

Kudu, M.H. (2012). Workshops and seminars on Education media and technology. Vol. 3, p. 8.

Nansel, D.A. (2011). Educational Technology: innovative Techniques, Owerri: Onil publishing House.

Poster, S.O. (2012). A Hand book on Educational Technology second Edition. New York: Kogan page London Nichols publishing company.

Sharlon, B.A.(2012). Curriculum resources and educational technology Asaba: View point publishing company 3rd Adarza Street West End.

Solomon. J. (2010). Educational technology: Theory and practice for tertiary institution, Awka Nigeria: Marpat Education Research and publisher.

Sybil, H. (2012). Gender and Computer use in an academic institution. Report from a longitudinal study. *Journal of Education computing Research 21(2), 56-66.*

Ubong, J.A. (2010). ICT and attainment of Educational technology in Nigeria. *Journal of Educational Technology and instruction (JETI). 2(2), 84-76.*

Ugwu, C.O. (2010). Innovative instructional strategies in Teaching and learning process (ICT in focus). *Nigeria journal of Teacher Education and Teaching vol. 11(1) 13-147*