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ICT AND KNOWLEDGE INTEGRATION FOR SOCIAL DEVELOPMENT IN NIGERIA

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ABSTRACT: *This paper examines the means through which Information and communication technologies and knowledge integration could be used to achieve national integration in Nigeria. The paper establishes that the 21st century is the most advanced and sophisticated era in human history. This is the period of rapid explosion in knowledge information across the globe. In this information age, knowledge is the global currency while ICT is conceived as the driver. Therefore integrating the large pool of knowledge is task that requires apt. the presence of ICT is considered a veritable tool to enhance integration of knowledge. Social development could be achieved by the collaboration of these two factors. This can be done using education as the background. We submitted that if the challenges bedevilling the use of ICT and knowledge integration in Nigeria are surmounted then social development in Nigeria will be achieved.*

KEYWORDS: ICT, Social Development, Communication Technology, Knowledge Integration.

INTRODUCTION

The school is the microcosm of the larger society. That is why the school reflects the needs, aspirations and dynamics that prevail in a society at a particular time. The quality of an educational system is measured by its output. National development is the direct result of qualitative educational endeavour as no nation can grow beyond its educational giving. Knowledge – its creation, sharing, transfer and integration – is the core duty of the school. As the school breeds varied kinds of knowledge in response to societal needs, there is an equal need to manage the same to achieve societal goals. This is where the idea of integrating knowledge gains credence. Knowledge integration is predicated upon the concept of knowing, which Maaninen-Olssom, Wismen & Carlsson (2006) described as a process of acquiring knowledge. However, knowledge on its own is useless except it has a real life, practical value. In other words, knowing will be baseless, and of no essence if there is no aim directing the process. In the midst of a vast ocean of available knowledge, there is need for the knowledge seeker or user to extract and integrate what meets his desire. This is what **Stehr (2001)** imply when he stated that knowledge entails the capacity to act.

In the education sector, knowledge integration should be geared towards achieving the national goals of Nigeria and the national education objectives as contained in the National Policy on Education. Federal Government of Nigeria (2013) maintains that education is tool par excellence for the actualisation of national ideals. Spender (2003) argues that an organisation such as the school is an instrument for integrating knowledge and activities towards sustainable

development. Education is of vital importance in the knowledge society, as a source of basic skills, as a foundation for development of new knowledge and innovation, and as an engine for socio-economic development. Education is a critical requirement in creating knowledge societies that can stimulate development, economic growth, and prosperity (Punie & Cabrera, 2005). Therefore, discussing ICT and knowledge integration with respect to social development without recourse to education, schooling or training is an inconclusive task.

The 21st century is the most advanced, sophisticated and complex era in human history. This period is characterised by high explosion in knowledge, which is most aided by the introduction of the information and communication technology (ICT). In the current knowledge economy, while knowledge is the global currency, ICT is the driver (Davies, 2003). The emergence of ICT and its rapid spread over the last one and a half decade has made it easy for one to acquire any kind of knowledge for national transformation. Awe (2015) noted that ICT has become a major tool for learning, work, recreation and innovation. Information has become the key enabler and currency of this era and ICT is the driver. Information age, knowledge society – it's about using knowledge to make a difference. The global knowledge economy depends on the purposeful and sustainable exploitation of knowledge by all sectors. Therefore, the illiterate of the 21st century is not the one who cannot read and write, but the one who cannot learn, unlearn and relearn (Olubamise, 2004). And, this is the load of knowledge integration process, which ICT is the fulcrum.

There is no gain saying the fact that ICT has permeated all sectors of the national life – educational, economic, political, social and religious. In view of the myriads of the importance of ICT in national life, this paper seeks to x-ray the way Nigerian educators can utilise ICT for the integration of the vast wealth of knowledge available for the social development of Nigeria. In an attempt to achieve this objective, we will take a cursory look at the concepts and significance of ICT and knowledge integration, their application and challenges in their application for social development in Nigeria.

Clarification of concepts

For the purpose of comprehension, the key words in this study need a brief operational conceptualisation.

Information and Communication Technology or Technologies (ICT)

ICT is defined as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." (Blurton, 2004). ICT is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICT technologies are used by skilled professionals to create, operate, design, maintain, programme and deploy information. In a nutshell, ICT connotes technologies (or application of scientific knowledge) in the communication of information. These technologies are both hardware and software.

Knowledge Integration

Knowledge integration is a knowledge management process, which involves the harmonisation of new knowledge or different categories of knowledge to form a unified body of knowledge. It is the process of synthesising many bodies of knowledge to form a single body of knowledge.

Organisations, especially educational organisations, create, share, transfer and use varied kinds of knowledge – be it explicit or implicit. The process whereby the different kinds of knowledge at the disposal of the organisation are specifically selected and incoporated for a particular purpose in the organisation is what we conceive as knowledge integration.

According to Putnam & Borko (2000), knowledge integration in the school setting is concerned about the way that a learner's poor or less useful ideas are straightforwardly replaced with better ones. More explanatory ideas become cued in more contexts, as learners gain knowledge and experiences and make new links. Other ideas with more limited explanatory success gradually become cued less often. In the socio-cognitive view of knowledge integration, learners are said to hold a repertoire of ideas, some of which are intuitive and others that are instructed. Learners identify weaknesses in their knowledge and add new ideas to their repertoire, linking some and distinguishing between others; they also reconcile ideas that appear contradictory (Linn & Hsi, 2000).

Furthermore, in executing their instructional responsibilities, teachers observe that some aspects of their knowledge are interconnected, though others find that ideas from university courses and programmes may remain unconnected to their foundational ideas developed through their experiences in schools or with phenomena. In the process of harmonising or putting together these categories of knowledge into a unified, codified body of knowledge, knowledge integration has taken place. Davis (2003) maintains that knowledge integration involves applying certain knowledge integration processes to ideas such as scientific principles, real-world experiences, and classroom-based experiences to develop robust and usable understandings for social development of the students and the society. Knowledge integration is basically all about an individual's ability to learn, unlearn and relearn.

Social Development

Social development, from the word 'social', has to do with people. It refers to the process of improving the well-being of the people in the society so that they can reach their full potential and contribute to the development of the same society. Davis (2004) opined that social development is about putting people at the centre of development. This means a commitment that development processes need to benefit people, particularly by not only the poor, but also a recognition that people – and the way they interact in groups and society, and the norms that facilitates such interaction – shape development process. Social development of a country is measured by the social progress of the people. Social development focuses on people, and it means investing in people to bring out the best in them. It entails a drive towards propelling citizens of a nation towards their individual and collective dreams. To this end, governments the world over formulate polices and develop programmes aimed at eradicating poverty, illiteracy, unemployment, crime, insecurity, hardship, maternal and infant mortality and containment of environmental hazards. Social development and social progress is used interchangeably.

Slideshare.net (2014), in explaining the Social Progress Index of Nigeria in 2014, defined social progress as the capacity of a society to meet the basic human needs of its citizens, establish the building blocks that allow citizens and communities to enhance and sustain the quality of their lives, and create the conditions for all individuals to reach their full potential. The three basic components of social development are basic human needs, foundations of wellbeing and opportunity. Each of these dimensions is further broken down into certain underlying components: nutrition and basic medical care, access to basic knowledge, personal

rights, water and sanitation, access to information & communication, personal freedom and choice, shelter, health and wellness, tolerance and inclusion, personal safety, ecosystem sustainability and access to advanced education. This Index focuses on three distinct questions:

1. Does a country provide for its people's most essential needs? (Basic human needs)
2. Are the building blocks in place for individuals and communities to enhance and sustain wellbeing? (Foundations of wellbeing)
3. Is there opportunity for all individuals to reach their full potential? (Opportunity)

The necessity of ICT in Contemporary Society

We are in the digital era, the age of information. Information, knowledge and opportunity epitomize the digital era. ICT is considered a critical tool in preparing and educating individuals with the required skills in the global system. It educates people so that they can continually adapt to a work world of continuous technological innovations, and makes it easier for them to access knowledge. ICT is regarded as an engine for growth and tool for empowerment, with profound implications for education change and socio-economic development (Davis, 2003). ICT enables utilization of information in the workplace, in the provision of public services and in the performance of the private sector.

Noting that ICT is an essential requirement for survival and progress in the 21st century, Davis (2003) suggested that ICTs should be exploited by developing countries to participate meaningfully in the global digital-enabled economy. Information and knowledge are critical for social and economic growth. In particular ICT advances enable Nigeria to drive inclusive national development and growth by tapping into the benefits derivable from the exploitation and deployment of ICTs. Not only should ICT be used to improve global competitiveness, effective and strategic deployment, development and exploitation of ICTs will lead to the development of a knowledge based economy. ICT drives development in all sectors by addressing needs that include poverty eradication, improved healthcare, wealth creation, job creation and education. As a matter of fact growth and development cannot be sustained in today's knowledge society without the effective utilization of ICTs in all sectors. Without ICT people are unable to participate meaningfully and fulfil their potentials. Globalization enabled by ICT however emphasizes the concept of market forces. But should developing nations rely solely on market forces to drive the ICT for development process, or to sustain the status quo?

Awe (2006) opines that the use of ICT is the major difference between the developing and developed worlds. In a globalized world, weak or inadequate ICT utilization widens the digital divide and promotes underdevelopment. Advances in technology, as well as the widespread deployment and exploitation created the global village that makes globalization possible. The implications are that there are no real national boundaries again.

The significance of ICT can be visible in all spheres of human life ranging from healthcare, agriculture, banking and finance and commerce and industry to education. Punie & Cabrera (2005) stated that the potential impact of ICT on learning is the vision that it enables learning 'anywhere, anytime, and anyhow'. With ICT, knowledge is not constrained by geographic proximity, and offers more possibilities for sharing, archiving, and retrieving knowledge.

Significance of knowledge integration in the teaching industry and other areas of human endeavours

The school is a beehive of knowledge activities, which is actively involved in knowledge management. Both the teacher and the student manage knowledge by integrating different kinds of knowledge for their instructional objectives of general educational aims and goals. Knowledge needs to be integrated to form a united body of facts relating to national development, bearing in mind that the school is a tool of the society for the transmission of its values, ideals and aspirations from one generation to another (Butcher, 2011).

Smithey (2003) observed that a teacher can integrate knowledge by adding new ideas, making links among ideas, distinguishing between ideas, and so forth. This enhances her mastery of the subject matter because knowledge from different sources and authorities have been incorporated into an existing knowledge thereby making the new-breed knowledge much richer and dependable than the former. Moreover, an analysis of two existing knowledge could be integrated to give a better understanding a phenomenon. For example, topics in Government such as "Functions of government" and "Why we study government" as well as the prevailing failure of governments to deliver on their mandates to the people could be synthesised to inculcate on the student the spirit of good governance even as a child. Moreover, knowledge integration in the teaching industry could be used in filling knowledge gaps and resolve knowledge crises.

Application of ICT and Knowledge Integration for Social Development in Nigeria

Standards of living are difficult to measure, but indicators of social development are available. The Human Development Index (HDI) considers life expectancy, education, and GDP. The three highest HDI-ranked countries in the world are Norway, Australia, and Switzerland (UNDP, 2014). Acceding to International Labour Organization (2011), top employers in developing countries such as Nigeria are agriculture (64%), services (26%), and industry (10%); 60% of these jobs pay $1.25 USD/day or less.

These indices indicate that Nigeria is quite far in the social development measure. Education or information is at the centre of HDI. The world today is regulated towards knowledge and information to create a knowledge society. It implies that any country that could get it right with education could likely attain high social development. From the 2014 HDI, the most socially-advance nations of the world have between 98 – 100 per cent literacy rates. Against this backdrop, we consider that the application of ICT and knowledge integration in social development in Nigeria would be best, and most effective from the education stand point.

As the status of information and knowledge are different in a knowledge-based society, the vision of what knowledge people need to acquire, and how they can acquire it, also needs to change. Knowing where knowledge is located and who has access to what kind of knowledge and why are becoming increasingly important. Social skills and 'relationship capital' become key skills for employment in the knowledge economy. Such skills are increasingly exercised using ICT. There is thus a need to skill both the workforce and the unemployed to increase their ICT literacy. These efforts need to be an ongoing part of lifelong learning, since a dynamic and fast-changing knowledge-based society requires continuous skills updating (UNESCO, 2005)

If societies are to harness ICT effectively to build knowledge societies, the implications are that there will be changing skills requirements for students and employees, as well as changing roles for educators and employers. For example, the growing importance of ICT has placed increasing emphasis on the need to ensure that learners and workers are information literate (including having higher order skills). Likewise, universities and employers are faced with a need to provide formal instruction in information, visual, and technological literacy, as well as in how to create meaningful content with today's tools. This requires education institutions to develop and establish methods for teaching and evaluating these critical literacies at all levels of education. It also requires employers to continue to engage in training, mentoring, and professional development practices that achieve similar aims, but within the workplace.

According to Patnayakuni, Ruppel & Rai (2006), knowledge is the single most important source of advantage in an individual's socio-economic progress and it resides within the individual member of the society. To harness this knowledge and direct it towards the achievement of social development, knowledge should be integrated in a systematic manner. There should be proper mechanism in place to integrate knowledge to facilitate learning as well as to create capabilities and competencies within the country. ICT is one way through which this could be achieved. Information should be disseminated through the internet or through the mobile devices. This is the surest way it could get the target audience even at the comfort of their bedroom. Such information could include ways through which people could access government opportunities, improving their skills and develop themselves.

In order to achieve social advancement in the education sector, Nigerian educational system should be learner-centred. Learner-centred education derives from the theory of learning constructivism, which views learning as a process in which individuals "construct" meaning based on prior knowledge and experience. Experience enables individuals to build mental models or schemas, which in turn provide meaning and organization to subsequent experience. Thus knowledge is not "out there", independent of the learner and which the learner passively receives; rather, knowledge is created through an active process in which the learner transforms information, constructs hypothesis, and makes decisions using his/her mental models. A form of constructivism called social constructivism also emphasizes the role of the teacher, parents, peers and other community members in helping learners to master concepts that they would not be able to understand on their own. For social constructivists, learning must be active, contextual and social (Jung, 2002). ICT and knowledge integration could be very instrumental in achieving this. In the process of 'constructing' knowledge gained from diverse sources, the student would need skills to be able to integrate same for his personal advancement. Considering the fact that the internet and more specifically the social media is the most preoccupation of young Nigerians today, these facilities are the most potent means of transmitting right information to the people.

Challenges in the Application of ICT and Knowledge Integration for Social Development in Nigeria

A number of challenges have been identified as factors impeding the application of ICT and knowledge integration for social development in Nigeria. Some of them include:

a. **Inadequate facilities:** The use of ICT facilities in integrating knowledge for social development in Nigeria require sufficient funding to keeping running. However, most educational institutions in Nigeria don't have ICT facilities. Most of them do not even have

e-library. Those that have do not have them running. In cases where they are running, their availability in small measure; inadequate for use (Haliso, 2011).

b. Lack of funds: Hooker (2010) describes lack of funds to acquisition, maintenance and training/ retraining of ICT staff of university librarians as the most fundamental challenge confronting the digitisation of African universities. Government has continued to pay deft ears to funding of the educational system generally. This has resulted in the unabated petering of the system of education in Nigeria.

c. Lack of technical know-how: Haliso (2011) points out that human resources, vendor, maintenance culture, education and training are key factors affecting the use of ICT facilities especially for education purpose in Nigeria. According to him, unskilled and untrained human resources lead to the employment of expatriates, whose remuneration poses another challenge to government, thereby making the programme unsustainable? Moreover, vendors' main interest profit. They don't give much attention to maintenance and training. Due to lack of proper training on how to use software and other applications, users of the facilities may be handicapped in integrating knowledge based on the ICT facilities.

d. Culture: Culture becomes a challenge when a device manufactured in the developed country is transferred to a developing country like Nigeria. The application may be very relevant to the culture and environment of the producer-country but may not fit in the consumer-country. As a result, the machine would be under-utilised. The challenge also goes to system planners and programmers to consider the local way of thinking, cultural setting, level of education and awareness.

Other challenges listed by Butcher (2011). include:

Policy development challenges:

- Lack of strong government support in advancing ICT availability and usage in education as a broad social and economic development enterprise.
- Lack of financing and prioritization of ICT investments as a means for development is serious barrier to effective ICT use.

Infrastructure challenges:

- Lack of affordable and accessible telecommunication backbone and a stable electrical supply Inadequate access to bandwidth.

Challenges relating to professional development / human capital:

- Lack of leadership capacity and vision of how ICT can be leveraged for education and socioeconomic development.
- Shortage of IT professionals and lack of educators with ICT skills.

The way forward

In the light of the foregoing, we consider that if social development must be achieved, certain steps must be taken to utilise ICT and knowledge integration in that direction. Basically,

surmounting the aforementioned challenges will automatically eliminate virtually all hindrances on the way of Nigeria's march towards sustainable social development as far as ICT and knowledge integration is concerned. On that note, we recommend:

1. That governments, corporate organisations and private individuals should make it a priority to fund education in Nigeria. Special attention should be given to ICT training and provision of ICT facilities in adequate number.

2. The use of ICT in education cannot be over-emphasised. Vigorous efforts should be committed to the teaching of ICT beginning from the primary school up to the tertiary levels. Certain things that are done manually in the school today could be done using ICT facilities. For example, students should be encouraged to own and email account through more of the assignments could be submitted and the teacher marks and publish results through the same medium. Moreover, in response to the diminishing reading culture, and a corresponding inclination to mobile gadgets; textbooks and other academic materials could be digitised either in written or audio-visual forms. With this learning will be fun. Students would find it easy to integrate new knowledge with personal experience and understanding.

3. Nigerian people should be trained on how to develop ICT software and hardware to meet our environmental and cultural requirements. Phones and computers that are adaptable to Nigerian social life could be produced. Other applications especially of educational relevance to Nigeria could also be digitised.

CONCLUSION

The 21st century world has been with such terms as global village or globalisation, digital age or information era while the 21st century society has become a knowledge society in which knowledge is the currency and ICT is the driver of knowledge or information. With the advent of information and communication technology, the stream of knowledge was rapidly made and ocean of unlimited information circulating round the globe. There is so much knowledge being generated on daily basis that one requires appropriate skills to be able to incorporate the right one for a particular purpose; hence the need for knowledge integration.

This paper considered ICT and knowledge integration as potent tool for the actualisation of social development in Nigeria. However, owing to the challenges confronting the application of ICT and knowledge integration in Nigeria, it feared that if nothing is done to abate the trend, the march towards social development may be delayed. In response to this, we are conclude that if the issues of funding, manpower and custom-made facilities are made for Nigerian cultural environment, social development is very feasible.

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