



DIGITALIZATION OF EDUCATION IN THE 21ST CENTURY: IMPLICATION FOR TEACHERS RE-ORIENTATION FOR NATIONAL UNITY

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Abstract:

This study examined the digitalization of education relating it with its implication for the 21st-century teachers. This work aimed at establishing the connection between digitalization of education and the preparedness of teachers towards ensuring its actualization in several educational institutions in the economy. This aim was made possible through the review of six (6) concepts and one (1) theoretical backing to support the purpose of this study. The concepts reviewed brought about the interconnection between several intervening variables that help to understand the relationship between the main variables of the topic to ascertain the relationship as well as necessary requirements and impediments towards achieving it fully. It was found out that digitalization of education is necessary for our modern world of today. It was concluded that digitalization of education industry in the 21st century has proven to be a boon to our society. It was then recommended that teachers should seek for more ways to boost their 21st-century skills to enable them to digitalize their instructional process properly. It was also recommended that curriculum planners should devise means by which the digitalization of education can be fully and effectively implemented in all educational institutions of the economy.

Keywords: digitalization of education, 21st Century, teachers' re-orientation

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1. Introduction

Education has been defined in various ways by scholars. In a broad sense, education is defined as a process of developing the individual physically, mentally spiritually, morally and socially for his welfare and the welfare of the society (Ukeje, 1986), while some scholars looked at education as a process, others see it as a discipline or as a product. In this regard, Olu Osokoya (2014) maintains that the concept of education is very elusive and very difficult to be narrowed down to a single definition. However, he maintains that the concept of education originated from two Latin words “educere” and “educare” which mean to “lead out” and to “nourish” respectively. From the two Latin words of education, it connotes that the business of education is concerned with leading the individual to acquire the values and norms of his society to enable him to live a fulfilled life. This is what Nduka (1975) considers as the process of cultural transmission. In this process, the art, music, literature, philosophy, religion, world view, science and technology and other capabilities that enable an individual of a society to be a responsible adult of his society are transferred. For clarity of purpose, education is discussed in this paper as a process of cultural transmission. The peoples’ way of life is transmitted, the cultural heritage is transmitted and in the process the individual gains knowledge and ideas that produce a change in behaviour.

Hanson and Bremback (1966) maintain that the civilization of the past is acquired to enable an individual to take part in the civilization of the present and contribute to the civilization of the future. In this regard, it means that education is a continuous process as no culture, or no society is constant.

Onwuejeogwu (2007) maintains that culture is dynamic, as the society is changing what constitutes the culture of the society, be it material and non-material aspect of the culture, also changes. To be relevant in any society, the need to constantly readjust and adapt to new ways of life to be relevant in that society is imperative, since there is no end to learning. Over the years, in the traditional African society in the indigenous education, the teacher was “the uncle”, “the aunt”, “the master carver”, “the priest” etc. while the learner, the students who are the apprentice faithfully learns as a servant – learner to acquire the relevant skills needed to enable him live a responsible fulfilled adult life in the society. The students learned through observation, story-telling, proverbs, folktales, riddles, imitation and participating in the process of whatever skill that was been transferred.

During the Medieval era before the intervention of the printing press, the teacher was the custodian of knowledge. Boyd and King (1983), maintains that the students sat before the teacher who read from his lecture notebook to deliver any branch of knowledge sought by the students while the students copy same to their notebook. The teaching and learning process at this period was a very cumbersome task, and very costly. With the invention of the printing press around 1440 by Johannes Gutenberg in Germany, the teaching and learning process received a boost that led to the florescence of learning to a very great dimension as a result, reading materials were made available and accessible

to many scholars as compared with the previous era of dictation and copying of lecture texts by the teacher and students respectively. Teaching was made easy for the teacher as the students were able to access reading materials on their own without necessarily waiting for the teacher's dictation of his lecture note, though not ruled out anyway. The chalkboard method has persisted over the years until the invention of computers snowballing into the digital age in the 21st century. The shrinkage of the globe, and a digitalized world and the digitalization of education have placed a high and serious demand on the teacher and his method delivery to be relevant in this 21st century. In a dynamic global digitalized village, for the teacher to be relevant and very productive, it is imperative that his method of delivery must be responsive to the new digitalized method of the teaching and learning process.

2. Theoretical Framework

2.1 Marx Webber's Modernity Theory (1915)

Modern theorist believes that it is possible to find out the objective truth about society. Theorists such as Emile Durkheim, Marx Webber, and Karl Marx in Henslin (2004), are seen by some people as epitomizing modern theorists. Modern theorist claimed to be able to provide a comprehensive and definitive theory of society. The modern theorists share a common intellectual interest in the social changes associated with industrialization, which is believed to have shaped the modern world. For example, Auguste Comte and Max Webber, affirm that the change associated with industrialization has brought scientific progress to the human society which was once dominated by religion and superstition. As a result of this victory of science over superstition and philosophy, modern society will now be dominated and governed by positive science (Haralambus & Holborn, 2008).

For Webber in Henslin (2004), the modern age would be increasingly shaped by rationalization and bureaucracy as effective and traditional actions become less important. On the other hand, modernist like Karl Marx and Emile Durkheim do not totally believe that the society will be governed by scientific and rational thinking; rather they strongly believe that the society is developing progressively towards a utopia complex in nature and based upon organic solidarity (Durkheim in Stark, 2007). They believe that scientific rationalization could help to outline the future direction of social change; a concept propounded by the pre-modernists during the eighteen-century enlightenment era. Education, according to the modernists, is to help spread the rational and scientific beliefs that would free people from the grip of tradition and superstition. The argument is that individuals have the potential to think for themselves and to make rational decisions, but are prevented from doing this by the influence of superstition and tradition.

According to Robin Usher and Richard Edward in Haralambus and Holborn (2008) Education-modernist, the task of education under modernity is to bring out and help to realize this rational potential, so that subjects become fully autonomous and

capable of exercising their individual rational and international capacities. It is believed by both scholars that education is the key to developing the individual and in doing so, makes social progress possible.

This theory is relevant to this paper because secular education liberates people from ignorance, superstition and the control of religion. This, in turn, will enable them to embrace the progressive scientific principle that will bring development to the society. In this 21st century, with the shrinkage of the globe in a digitalized world, high demand is placed on the teacher to innovate, improve and acquire the contemporary technology of the new world order if he must be relevant in his profession. Innovation will also enable the teacher to disseminate information to learners at a high-speed saving time and space. The Nigerian society that is sharply divided by religion, ethnicity, sectionalism, illiteracy and other ethnocultural factors that are inimical to national unity can be galvanized to a single Nation-state through the dissemination of relevant information that is geared towards national unity and integration.

3. The Concept of Digitalization of Education

The concept of digitalization of education can simply be seen as the rebranding of the educational system from the old traditional style to the newly globalized modernized style of education with the aid of information and communication tools via their integration into the educational process. In the wordings of Stuart (2014), digitalization of education is a powerful trend in terms of reformation and modernization of the global education environment. Digitalization means the transformation of all information types (texts, sounds, visuals, video and other data from various sources) into the digital language and that while discussing the phenomenon of digitalization, it should be noted that various analysts and forecast experts (mostly British, including Tim Berners-Lee - one of the inventors of the World Wide Web, consider the transition of education process into the digital stage as the turning point in the history of education. It is the innovative use of digital tools and technologies during teaching and learning and is often referred to as Technology Enhanced Learning (TEL) or e-learning. Digitalization is simply integrating technology in the classroom to make teaching and learning more effective and this will, in turn, encouraged disciplined, promote higher-order thinking, creativity, collaboration and feedback.

There are several forms by which education can be digitalized by which some of them are popularly noted and in some cases employed in several educational institutions at both national and international level, in the likes of blended learning, online learning, electronic learning (e-learning), and the likes of it and each of these variations has their own characteristics as well as how well the educational system has been improved by them. In the case of blended learning, which involves the combination of multiple methods towards the enhancement of the delivery rate of instructions of the educational process in educational institutions, of which an example of this is the flipped classroom, where online activities are completed outside the classroom, thereby providing an

opportunity for more in-depth discussion during the face-to-face time spent in the class. These classrooms in which ICT facilities are available are being termed digital classrooms. Roberts (2007) defined digital classroom as an authentic environment equipped with digital technologies in which students have active participation and take responsibility for their own learning. These digital classrooms play a vital role in preparing new generations of teachers as well as upgrading their competencies teaching force to use 21st-century tools and pedagogies for teaching and learning. Digitalization when properly implemented goes a long way to equip the 21st-century teacher to better handle the digital native students.

The major reasons that can be attached to the digitalization of education are listed below:

- bringing about flexibility in the instructional process;
- increment of enthusiasm of the students through exposure to the vast world of educational resources;
- promoting the effectiveness and competencies of teachers in handling their respective teaching responsibilities;
- creating an enabling instructional environment for not only the teachers but as well as the students.

According to Pearce, Weller, Scanlon and Kinsley (2011), digitalization of education helps to bring about the attainment of the best results if information technology (IT) tools are used at certain intervals, approximately three times a week since frequent use of innovative and primarily digital methods can gradually decrease the students' information processing efficiency.

4. Education in the Globalized Village

A globalized village can be said to be a community or society that has been completely engulfed with the presence of modern technologies, by which these technologies are being implemented for each of the day-to-day life activities within the said community or society. In the words of Marsh (1996), contemporary society has been rightly described as a global village in which there is increasing interconnection between nations, people and societies. Even with globalization, one obvious reality of today's world is the disparities between and within societies in terms of development. This, therefore, implies that these modern technologies do have in one way or the other influenced the development rate of each sector of the society, with which the educational sector is not left behind, and that can be said to be the case in our current economy of today. Ott (2000) is of the view that Learning environments enriched with technology are shifting from simple computer laboratories to highly technological environments equipped with computers, projectors, internet connection and communication technology.

Education is the process of imparting and acquiring knowledge and skills about ideas, values and concepts, borne out of learning practice and experience. The latter can be imparted to or shared with others, particularly the younger generations, through

formal and informal institutional arrangements, such as schools. Knowledge so acquired whether, in humanities, liberal arts, science and technology are subsequently applied to sustain present and subsequent generations in their everyday life. Therefore, every human endeavour requires one form of knowledge or another. According to Abiodun (2002), it is the proper nurturing, transmission and application of such knowledge that guarantees the development and sustenance of every society from day to day. The pattern with which this knowledge is being nurtured, transmitted and applied in a globalized village can as well be said to vary when compared to a non-globalized one, which therefore influences the rate with which development is being accrued to the communities or societies in these categories, which is evident in the developed, developing and underdeveloped countries of the world today.

Education is regarded as the instrument of social change which could transform the society in significant ways. However, to bring this idea into reality, educational opportunity must be made available to a large proportion of people in the society, thereby helping to bridge the gap in the differential status of different regions of the economy (Federal Ministry of Education, 2003). Every society must therefore generously invest in the development, building and nurturing of the minds of its youth to ensure that when the current generation passes on, subsequent ones are adequately equipped with the requisite knowledge that will keep the society vibrant and continuously progressive.

4.1 Teacher Education in the 21st Century

This concept aims to initialize the rudiments of teacher education programmes in the 21st century, putting into consideration the various technological advancements of the modern world today with regards to the way and manner that technology has deepened into our educational system, thereby enabling the teachers with the needed capacitance to handle the whole processes involved in the educational process in the 21st century. With this, there is bound to be high attainment of educational objectives of the economy. Teacher-preparation programs provide educators with the tools, mentors, hands-on experience which they need to begin their career. These programs lay stress on subject-matter mastery and under the guidance of an experienced mentor. This can be otherwise said to be teacher education. Professional development is training provided to teachers for some time to promote development in all aspects. Professional development for teachers is more than training or classes as it is an agent to change classroom practice. It is important and beneficial for experienced teachers to go through continuous and regular chances to learn from one another. Teachers remain up-to-date on new research on how children learn, new tools & resources, emerging technology and so on by continuous professional development. The professional development, which is continuous, practical, collaborative, derived from working with learners and understanding their culture.

Research has proved that teaching quality is the important and powerful school-related agent which improves learning and achievement of the learner. The schools are important to develop high-quality teaching.

The systematic process by which this program is being run towards ensuring the enhancement of the professional development of these teachers has to be outlined in such a way that it matches with the rudiments of the educational pattern for our modern world today. The most important way to promote learning and educational opportunity in schools is constructing systems which to assist a teacher in continuing professional learning and improvement of teaching practice. All these practices are engaged in towards equipping the teachers with the required skills to function properly and efficiently in the 21st century. Some of these skills are:

- ability to think globally;
- ability to develop sensitivity towards cross-cultural differences and diversity;
- ability to be technologically knowledgeable;
- ability to build partnerships and alliances beyond classrooms;
- ability to share learning inside the four walls.

4.2 Teacher Education and Digitalization Innovation for Relevance

A teacher is termed as competent in a digitalized world of education if he/she can fully implement the rudiments of a digitalized education system as well as be creative towards several means by which this system of education can be successfully implemented or utilized appropriately. This process is what can be hugely termed as innovation, which can indirectly be seen as the innate desire to bring about a change in an existing system to bring about the improvement of its functionality.

Innovation in education is a highly contentious issue. Talking to education ministers one quickly gets the impression that education systems, in general, are very reluctant to innovate, and that there is strong resistance to change among teachers. Education is sometimes perceived as one of the most conservative social systems and public policy fields. But talking to teachers gives one the opposite idea - that there are too many changes imposed on them without much consultation or the necessary preconditions for successfully implementing change. In some countries, innovative change has been implemented without the care and diligence needed or the appropriate prior testing, experimentation and evaluation. The problem education is facing is mainly one of productivity and efficiency. Here, efficiency means the balance between resources invested and the outcomes in terms of students' performance and equity. Over the past decades, even more, resources have been invested in education. Looking just at school education, the average expenditure per student across OECD countries increased by no less than 17% between 2005 and 2013 in constant prices (OECD, 2016).

4.3 The Challenge of Digitalization Teachers Innovation or Challenge to Teacher Education in the 21st Century

As per every innovative idea presented in any retrospect of life, there is bound to be some challenging factors that can hinder the rate at which whatever is being innovated is being successfully implemented as well as the rate of its effectiveness. This can as well be the

case when we are talking about the innovation of teachers towards the digitalization of education towards attaining a higher developmental goal in the economy at large.

In the last few decades, innovation, in general, has been increasingly regarded as a crucial factor in maintaining competitiveness in a globalised economy. Innovation can breathe new life into slowing stagnant markets, and act as a mechanism to enhance any organisation's ability to adapt to changing environments (Damanpour & Gopalakrishnan, 1998; Hargadon & Sutton, 2000). Both policies and theories on innovation have mainly focused on the business sector (Lekhi, 2007). Businesses need to innovate in order to keep up with their competition by introducing new products or services, improving the efficiency of their production processes and organisational arrangements, or enhancing the marketing of their activities to guarantee their survival, and the same can be said to be in occurrence in teacher education programmes towards the digitalization of education.

Challenges can be said to be problems that are involved or associated with the innovative skills of teachers towards the digitalization of education, which is what is to be expected of teacher education programmes in the economy. The following are realizable challenges that can be accrued to this:

- unavailability of sophisticated technologies to enhance the implementation of the digitalization of education by teachers.
- less zeal to be innovative or creative towards the digitalization of education by the teachers.
- the conduciveness of the environment to aid the implementation of digitalization of education.
- the success of digitalization calls for a thorough creation of awareness for the institutions, there is no awareness, orientation, training and packaged motivational programmes to promote technology in the system to help digitalization.
- practical ability of the teachers to handle the pre-requisites of implementation a digitalized form of education.

5. Recommendations

From the conclusion drawn so far, the following recommendations were made:

- teachers should seek for more ways to boost their 21st-century skills to enable them to digitalize their instructional process properly.
- principals or heads of schools should ensure the direct and effective implementation of a digitalized educational system in their respective institutions.
- the combination of new technologies with conventional classroom instruction is a way of introducing new technology that can enhance the learning experience and create new opportunities.

- curriculum planners should devise means by which the digitalization of education can be fully and effectively implemented in all educational institutions of the economy.
- the government should also make available several means by which the digitalization process of education can be fully attained.

6. Conclusion

Digitalization has no doubt changed our education system, but we cannot say it has diminished the value of the old-time classroom learning; neither do we want something so priceless to turn into dust. The best part about the digitalization of education in the 21st century is that it is combined with the aspects of both classroom learning and online learning methods. Walking hand-in-hand, both act as a support system for each other, which gives a stronghold for our modern students. Digitalization in education has also proved to be the right method for saving resources. Online examination platforms have restricted the frivolous usage of paper, directly confining the cutting down of trees. This way, the digitalization of education industry in the 21st century proves to be a boon to the society.

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