DIGITALIZING SCIENCE EDUCATION: THE PANACEA FOR APATHY OF THE PRESENT NIGERIA YOUTH

Olugbuyi, P. O., Oginni O. I., Ayeni M. F. & Fatoba J. O
Science Education Department, Ekiti State University, Ado Ekiti
olubunmi.olugbuyi@eksu.edu.ng +234-803-485-3567

Abstract

The paper sought to examine various digital techniques for teaching science education with a bid to making the subject more interesting, practical and research oriented with the attendant innovations. The paper also sought to explore the learning support materials necessary to implement the digital teaching of the sciences. Not only these, the paper also highlighted digitalization as a good construct to equip learners with knowledge and skills to convert innovations from science researches to marketable products for commercial gain. It was the view of the paper that lesson delivered using ICT materials would be faster and more fascinating. Also, learners and Nigerian youths would be eager to put what they learned into practice independently. This paper also highlighted the importance of digitalization, which will strengthen the confidence of science teaches and learners. In view of the above, the paper recommended the teaching of digital science in both secondary and post – secondary institutions, especially in Nigeria, as this would promote science innovations necessary for tackling the state of apathy of Nigerian youth and unemployment.

Key words: Digitalization, Science Education, Apathy, Nigerian youths.

Introduction

The word digital which originates from the word digit, means involving or using numerical digits expressed in a scale of notation, commonly in the binary system, to characterize discretely all variables occurring in a problem. It also means pertaining to, noting, or making use of computers and computerized technologies, including the internet (dictionary.com). Digitalization, simply put, means the act or process of converting to digital.

Quality education is a major key to any national development and advancement. The role of education in building the economy, technological advancement and lifestyle of any nation cannot be overemphasized. A progressing nation is one that focuses on the quality of education received by her citizens and creates platform for her citizens to express and apply their knowledge. The advanced countries are characterized by citizens enriched with quality education and apply their knowledge towards the progress of the nation. Science education is concerned with the sharing of science concepts and application processes with individuals that are not considered to be part of a scientific community.

Nigerian education system is governed by the Ministry of Education which includes the management of federal tertiary institutions and schools. The State public schools and tertiary institutions are governed by the Ministry at state level (Olawale 2018). This suggests that the quality of education across states will vary subject on the standard each state can provide. Nigeria has been faced with a lot of criticisms and setbacks in the quality of education recently. The government had been heavily criticized for overlooking the challenges facing the education of her citizens and focusing on other problems. Efforts have been made to develop education in Nigeria, various policies in the interest of education have been formulated, unfortunately, these efforts have not produced the desired result. The state of education in Nigeria is still appalling. It is so bad that some resourceful Nigerians prefer to send their children to Europe, America and

even nearby African countries such as Ghana that has fewer universities as against universities in Nigeria that lack adequate learning facilities (Okoroma, 2006). Okoroma 2006 also highlighted problems facing the educational sector that;

- the implementation of educational policies is also often hindered by the interplay of politics, which may sometimes relegate reality to obscurity
- facilities such as classrooms, offices, laboratories, workshops, libraries, power, water et cetera are basic requirements in every school system. These have been found to be grossly inadequate in most Nigerian educational institutions. The Academic Staff Union of Universities (ASUU) has confirmed this in its numerous publications.
- insufficiency of funds for implementing educational policies in Nigeria is a problem that has recurred in almost every
- implementation study that has been carried out. The importance of funds for carrying out any activity need not be over-emphasised.
- government lacks the political will for effective implementation.
- corruption at all levels hinders the implementation of educational policies and programs.

Nigerian youths are faced with a lot of challenges where education is one of them. An average Nigerian student will have to go through a lot of pressure viz: financial, transportation, emotional and educational, before he/she can succeed in academics. The exponential growth in population has raised apprehensions and pressure mounts on the country's overstretched educational system. The rate of drop – outs among Nigerian students, especially in the northern part of the country is high. At present, Nigeria has the highest number of out – of – school children in the world and about 60 percent of its uneducated population are girls born and raised in the northern part of the country (Jumia Travels 2015). This dropout rate is a great concern as the Nigerian youth is wasting away and becoming inconsequential to the development of the country. The youths are now being engaged with a lot of redundant activities which does not benefit the nation in anyway. Most of them turned criminal in the wake of trying to make ends meet. The criminal rate is also a major concern in the country, as many Nigerian youths fall in this category. Engaging in diabolical means to make money, fraudsters home and abroad, prostitution, terrorism and kidnapping has become the order of the day. The list is endless and at the middle of these evil and backward acts is where the youths of this country are found. All these is because the education of the Nigerian youth has depreciated rapidly and the quality of education is nothing to write home about. This research has been birthed from the perceived failure of Nigerian youths in the development of the country.

In the past, Nigerian youths enjoy many privileges and education then was perceived easy. The undergraduates enjoyed sumptuous meals (breakfast, lunch and dinner) freely. They also had access to free laundry services. Job opportunities were very high for an undergraduate. Nowadays, all these privileges are not there and to access any of these privileges, it involves lots of processes to go through. Due to the academic pressure, most youths look for option to make fast money. Hence engage in lots of criminal and evil acts. With the recent progress in advanced nations, where computer and its technology has been employed in almost all aspects of life, it is therefore expedient to look into areas where computer and science will meet to serve as an remedy to the apathy of the youths in Nigeria.

Digitalizing Science Teaching

Information Technology has transformed every sector. It has grasped and currently modifying academia. Digital growth is altering the orientation of industries, churches, companies, schools and the government today. Digitalization in education industry has totally changed the teaching and learning process to a very large extent. It has made impartation of education stress – free for both students and educators. Schools are gradually employing digital teaching solutions to embrace generation of learners familiar with the likes of PlayStations and iPads and trying to make the classroom atmosphere more extensive and participatory. Currently, students live in a world that is constantly connected and alive outside the classroom, so traditional methods does not apply nowadays (Johari, 2013). The digitalization of science education is imperative so

that learners can learn at their own speed within and outside the walls of the classroom.

Science teachers need to be abreast of the digital equipment in the present dispensation. It is a fact that teaching method can either motivate or discourage a learner in the classroom. Therefore, science teachers need to be vast with the ways science teaching can be digitalized to embrace learners and make the classroom accommodating.

Creating a Digital Classroom

A digital classroom is one that employ the use of modern technology and communication tools in order to provide learners with information. A digital classroom is an avenue or platform for presenting information to learners via text messaging, email, audio conference call, video conference call, social media and computing (Jegede, Olatunbosun, Ajayi and Olugbuyi, 2018). It is more than a geographical location, it is a global platform. A digital classroom can either be virtual classroom or a real classroom.

A real digital classroom is one that is geographically bound, where the teacher and learners converge to teach and learn. Digital teaching tools are used instead of the traditional teaching aids. The use of interactive board or projector instead of the chalkboard or whiteboard. Science concepts can be prepared in a CD/DVD and be projected. Also class attendance can be digitalized, where students names had been entered in an excel format and marks allotted for each column instead of the traditional attendance register. The real classroom makes the teacher and learner to be familiar with technological tools like Class Dojo, Cacoo, Pixton, Voice Thread Kahoot etc. This type of classroom is geographically and time bound.

A virtual digital classroom is one where teaching and learning can take place online. The participants may see themselves and may not see themselves. A virtual classroom can be closed or open. A closed platform is one where the learners and teachers are limited to a group and a class. This is one where teaching and learning takes place within that group and a class. The number of participants are restricted and information shared are within the group. For example Group Chats, Online group(s), etc. An open platform is one where information and ideas shared is open for all. There is no restriction to number of participants. Here anyone can assess ideas and information online. This type of classroom is neither time bound nor geographically bound.

A physics teacher can make presentations of physical concepts such as motion, force of gravity, Archimedes principles and other physical concepts in a CD or DVD and show the class with use of overhead projector or interactive board. Concepts like geometry, statistics probability and other mathematical concepts can be prepared likewise. Also chemical concepts like electrolysis, chemical bonding, state of matter and biological concepts like cells, respiration, and reproduction can be prepared and delivered in the classroom or online. Science teachers need to embrace digitalization as to become a global science teacher and not just a local one.

Digitalization: a Panacea for Redundancy of Nigerian Youth

An average Nigerian likes to get things easily and fast. It is unfortunate that education is not one of those things a Nigerian youth can get so easily and fast. The educational system is so unpredictable in that an undergraduate studying for a four year programme may eventually spend extra years due to many exigencies. These exigencies can be closure of school due to ethnical clash, strike action of staff, political clash, among others. Several Nigerian youths are on the streets trying to make ends meet and engaging in various activities. The widespread of entertainment industries in the country has become another option for the education of the youths. Entertainment industries have witnessed a mass exodus of the youths into sports, music, acting, reality shows, comedy and beauty pageant to mention a few, rather than going to the classroom. This is because it is easier to access these activities than education in Nigeria.

One of the major problems facing Nigerian students is that the processes of getting admitted into a tertiary institution in Nigeria is discouraging. Every year millions of Nigerian students, which apply to get admission into tertiary institutions, are disappointed. It is not because they did not study hard for entrance examinations, there isn't enough room for them all (WES, 2017). Data from Nigeria's National Bureau of Statistics and

the Joint Admissions and Matriculation Beard (JAMB) shows that between 2010 and 2015, of the 10million applicants that sought entry into Nigerian tertiary institutions, only 26% gained admission. As shown in figure 1.

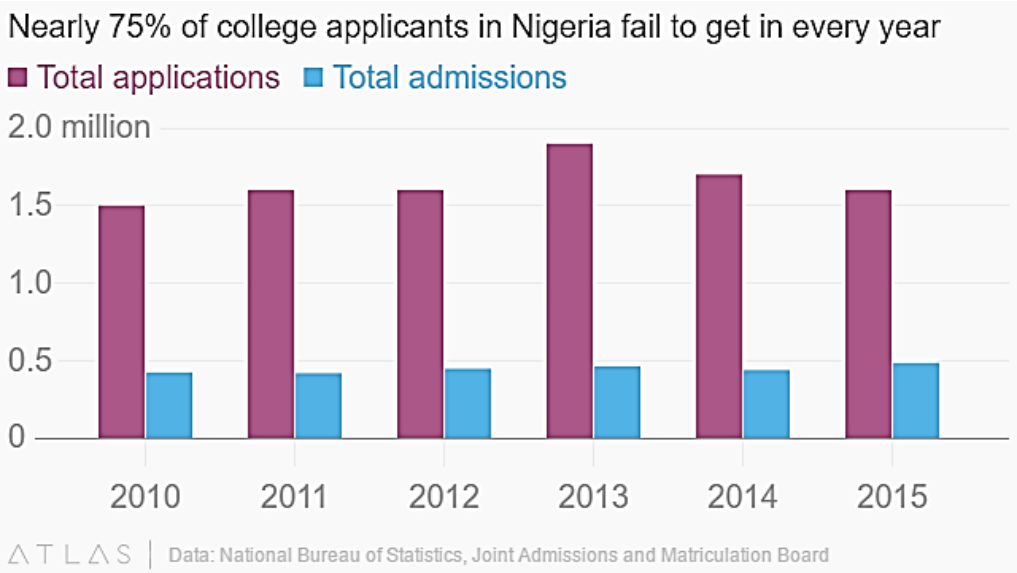

Figure 1. Statistics on admission into tertiary institutions in Nigeria. Kazeem (2017)

The disappointments and heartbreaks from not being admitted into a Nigerian University has prompted many youths to find their way abroad for better life and education. The better education programme had been possible with the implementation of digital education. Many universities abroad do utilize digital tools and resources to express their ideology into the learner, which attracts learners from Nigeria. According to data from the UNESCO Institute of Statistics (UIS), the number of Nigerian students abroad increased by 164percent in the decade between 2005 and 2015, i.e. from 26,997 to 71,351 (WES, 2017) as shown in Figure 2

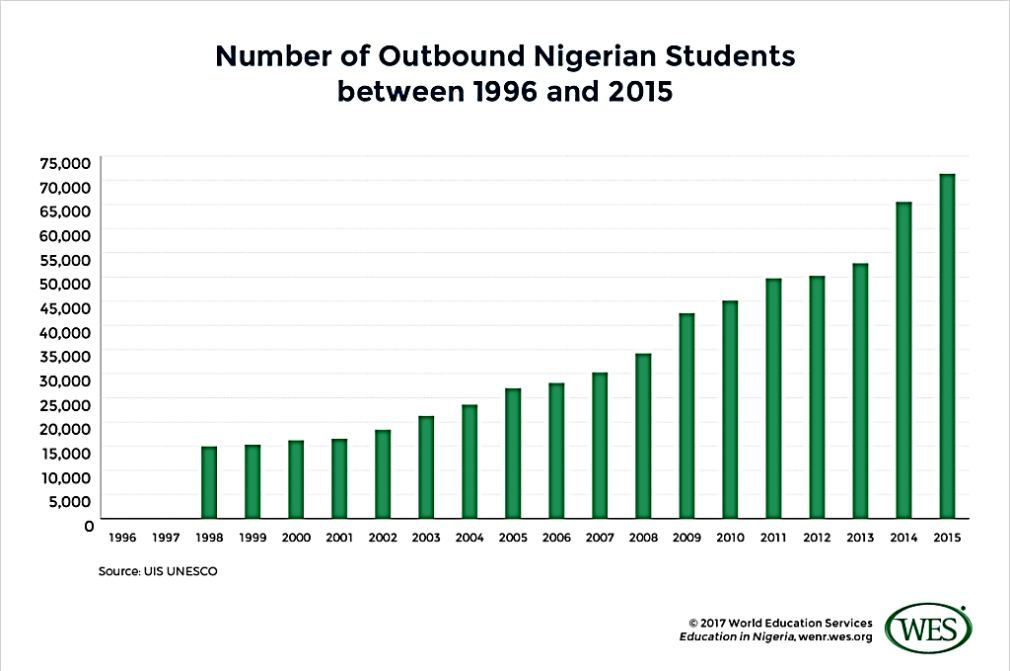

Figure 2. Number of Outbound Nigerian Students (WES, 2017)

While it is evident that Nigerian students travel out for education and better life, it is therefore expedient to digitalize science education for Nigerian students to become an effective citizen. Digitalization of science education will not only reduce the exodus of students abroad, it will provide a better platform for projecting Nigerian education positively. Also, digitalization will help provide education to many Nigerian students, especially those denied the privilege of admission into her tertiary institution.

Advantages of Digitalization of Science Education

Science concepts taught in tertiary institutions will be archived online and be accessible to many, even those that do not have admission. Online libraries are incorruptible and can last longer. Teaching and learning of science education becomes global, promoting the educator as well as connecting him/her to other science educators across the globe. Also science learners can compete with other science learners across the globe, hence there will not be any inferiority complex. Digitalization also will help the educators and learners to become vast in dealing with modern resources, building their confidence in teaching and learning of science.

Discussion

The quality of Nigerian education has been perceived as poor and it obviously cannot accommodate the Nigerian students. There are more secondary schools than tertiary institutions, which has given rise to more students finishing WASSCE, NECO and NABTEB than student getting admitted. The total number of recognized universities in Nigeria as at 2017, is 152, 40 Federal universities, 44 State universities and 68 private universities as accredited degree – granting institutions while the National Board of Technical Education (NBTE) recognizes 107 Polytechnics, 27 monotechnics and 220 Colleges in the country (WES, 2017). This will not accommodate the students finishing WASCCE, NECO and NABTEB, coupled with the rigorous processes to gain admission yearly. One of the ways to motivate the students is to digitalize science teaching and learning, (Sunjun & Minying 2003), (Jegede et al. 2018)

Conclusion

There is a worldwide concern that the educational system in Nigeria is failing to promote the necessary skills that will adequately prepare our children for the future (Jegede et al. 2018). This in mind, science teachers need to be up to date in what to teach with the use of digital equipment to promote the educational system of the community.

Education in Nigeria at a time was free, this encouraged youths to study. It is a different story nowadays as students would have to go through rigorous processes to pay their fees. The focus of Nigerian education is now hinging more on getting money from the students than transferring knowledge to the learners. Science teaching takes place in situations and conditions that does not encourage the students to learn. Digitalization of science teaching will motivate these students and encourage them to contribute more to the growth and development of Nigeria. Digitalization will market Nigerian education and help the teachers to be marketable to other countries. It is high time science teachers embrace the modern technology and go digital.

Recommendations

The above discussions gave rise to the following recommendations. Nigerian science teachers should adapt to new technology and be flexible in teaching of sciences. A workshop on digitalization should be organized to educate pre – service and in – service science teachers on the use of modern resources for teaching. The Ministry of Education should encourage digitalization in Nigerian secondary schools.

References

Jegede, S. A., Olatunbosun, S. M., Ajayi, L. F. and Olugbuyi, P. O. (2018). Digital Chemistry and Innovation: A panacea for Global Economic Recession – The Nigerian experience. *EKSU Journal of Education, 7(2), 41 – 45.* Ado - Ekiti

Johnson Olawale (2018) Problems of Education in Nigeria and their solutions. https://www.naija.ng/1104678-problems-education-nigeria-solutions.html#1104678

Jumia Travel (2015) Nigeria struggles to raise quality of education as dropout rates increase. An online article. https://travel.jumia.com/blod/ng/nigeria-edeucation-quality-596

Johari M. (2013). Digitization of Education: Great Change in Teaching – Learning Trends. A Scholarship Positions Blog. https://www.google.com.ng/amp/scholarship-positions.com/blog/digitization-of-education-great-change-teaching-learning-trends/201307/amp/

Kazeem Y. (2017). Only one in four Nigerians applying to university will get a spot. https://www.google.com.ng/amp/s/qz.com/915618/only-one-in-four-nigerians-applying-to-university-will-get-a-spot/amp

Okoroma N. S. (2006) Educational Policies and Problems of Implementation in Nigeria. *Australian Journal of Adult Learning Vol. 46 (2), 243 – 263*. Australia.

World Education Services (WES). (2017). Education in Nigeria. An article in World Education News + Reviews. Education System Profiles. New York. https://wenr.wes.org/2017/03/education-in-nigeria