



TOWARDS EFFECTIVE DIGITALIZATION OF SECONDARY ED EDUCATION IN ANAMBRA STATE

Dr. Emegwa Tina Uzoamaka

Department of Educational Management and Policy,
Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
emegwauzuamaka@gmail.com

ABSTRACT

Teachers and school administrators in various countries especially in the Western World are seriously adopting and utilizing the numerous opportunities provided by the new innovation (ICT) for greater efficiency, better quality, faster production and delivery of more reliable and cost-effective service. It is imperative that traditional mode of school management will in no time be replaced with a new mode of management which involves digitalization of educational management. For this purpose, Nigeria needs to rise to the challenges militating against digitalization of her educational system. Digital technologies have to be deployed in our educational system especially at secondary level of education which serves as the base for other levels of education. This is the only way Nigeria could raise graduates who will be able to meet up with the competitive digital-driven world. The paper examines the concept of digitalization of education, role/importance of digitalization, state of Nigeria in digitalization of education especially secondary education, the challenges militating against digitalization of school management and the way forward.

Keywords: Strategies, Digitalization, Management, Secondary Education

Introduction

The secondary education remains the bedrock of all levels of education. Therefore, there is need to equip pupils at this level for higher studies by grooming them to key in to the trend of digital-driven world. Over few years now, a profound shift has taken place in the concept of education. Online teaching and learning have completely revolutionized the manner in which students acquire knowledge. Since the emergence of the term digitalization, the effects of digitalization on society have been at the heart of the discussion. Before pandemic, there was already substantial development and acceptance in education technology. But since after Covid-19 pandemic, there has been an increase in the use of digital learning platforms and supporting technologies in schools. Digitalization of education system is an opportunity to develop a cognitive resource-based mechanism in learners and improve the skills, lifelong learning and continuous education. This is in line with the goals of Basic Education as specified in National Policy on Education. According to the federal government of Nigeria National Policy on Education (NPE, 2013), the goals of Basic Education are to:

- a. provide the child with diverse basic knowledge and skills for entrepreneurship, wealth generation and educational advancement;
- b. develop patriotic young people equipped to contribute to social development and in the performance of their civic responsibilities;



- c. inculcate values and raise morally upright individuals capable of independent thinking, and who appreciate the dignity of labour;
- d. inspire national consciousness and harmonious co-existence, irrespective of differences in endowment, religion, colour, ethnic and socio—economic background; and
- e. provide opportunities for the child to develop manipulative skills that will enable the child function effectively in the society within the limits of the child's capability.

The policy went on and noted that human and material resources shall be deployed to achieve the set goals. Such resources included technological and digital resources. To bridge the access to quality learning opportunities, UNICEF and the Federal Ministry of Education launched the Nigeria Learning Passport (NLP) in 2023, an online, mobile, and offline digital learning platform powered by Microsoft that enables continuous access to 15,000 curriculum aligned learning and training materials in local languages for learners, teachers, and parents.

It is highly flexible and adaptable, allowing states, schools, teachers, parents, and other users to adapt it easily and quickly as their learning management system in school, for homework support and to ensure continuity of learning when schools are closed in emergency contexts. However, the reality is that with the increase in technological devices in this era, most secondary schools in Nigeria are yet to revolutionize to new technologies. This has limited the access to vast opportunities that abound in this sector to our pupils. Damkor et al, (2015) noted that most educational institutions in Nigeria are yet to implement and take advantage of its numerous benefits to the acquisition, processing, storing and dissemination of audio, video, textual, pictorial and numerical information necessary in the teaching and learning process.

Concepts of Digitalization

The terms digitization and digitalization have been widely used interchangeably by some people, hence the need for explanation on the two concepts for the purpose of clarity. Digitization refers to converting something non-digital into a digital representation or artifact while refers to enabling or improving processes by leveraging digital technologies and digitized data (Gupta, 2020). Brennen and Kreiss (2016) defined digitization as the material process of converting individual analog streams of information into digital bits and digitalization as the process of digital transformation through which many domains of social life are restructured around digital communication and media infrastructure. From the above, one can deduce that digitization is a process in digitalization.

According to Oxford English Dictionary, digitalization is the acceptance of increase of the use of digital technology by organizations, industries, countries etc. Digitalization is the generic term or digital transformation of society and the economy. It describes the transformation from industrial age characterized by analogue technologies to an age of knowledge and creativity characterized by digital technologies. According to Borisenkov, Gukalenko and Pustovoitov, (2021), digitalization in education is a variety of approaches for transitioning conventional modes of teaching and learning into the virtual world, such as online courses, online assessments, and web seminars/conferences and workshops, using electronic platforms. Daniel (2020) averred that digitalization involves electronic platforms which include among others;



zoom, WhatsApp, Google meets, Google Hangouts, Skype, Microsoft Teams, or FaceTime where learning may be done synchronously or asynchronously online. Digitalization in other words can be called e-education. And (McKenzie, 2021) opined that e-learning is set to become the future of education. According to Mittal et al (2018) digitalization provides unprecedented access to knowledge, reduce cost, and greater inter-disciplinarily, which is also a necessity, as trends indicate that younger generations will, on average, perform far more different occupations than generations in the 20th century. In their view, Akarika, Kerian and Iwok (2021) observed that advancements in information and communication technologies are offering a promising new means in the educational sector to meet the needs and demands of information age learners.

Digitalization in education implies school management using information technology support in providing services to the public. Some aspects of digitalization that can be employed in school services include:

1. **School Management Software (SMS):** School Management Software helps in fulfilling day to day tasks in school management. It makes work easier and convenient for teachers and school leaders. Tasks such as attendance management, time – table creation, parent-teacher communication, payroll, employee admission, pay slip generation, student/teacher data and others are easily carried out through School Management Software. Fee collection and even result computation in school is simplified and digitized with School Management Software.
2. **Students Information System (SIS):** Students Information System serves as a digital drop-box for school-related information. It is a vital tool for educational system as it helps students and parents gain access to students' information, making of payments and communication with school functionaries. The communication industry has witnessed remarkable change. The New media including 2go, LinkedIn, Whatsapp, Facebook, Youtube, Twitter, Instagram, Foursquare, Google+, Blogs, Live chats and Pinterest to mention a few, have not only widened the spectrum and method of communication but have brought new possibilities and opportunities in their wake (Willie and Akarika, 2023).
3. **Digital Learning Platforms:** Digital Learning Platforms are platforms/models that use online infrastructure to facilitate teaching and learning. Such include WhatsApp, Facebook, Instagram, Google classroom search, video conferencing, Recording, Blackbaud, Cerego. Bouclurika (2024) viewed that digital learning platforms allow educators to reach learners without the limitations of locations.
4. **Classroom Management Software: (CMS)** enables teachers to view, monitor, and control student device activity. It provides teachers with centralized view of the students' device screens and the ability to close unrelated tabs, lock device and screens and others. Example of CMS is Google Classroom.
5. **Library Management System:** This is software designed to manage all functions in the Library. This helps to control the loss of books in the library as the Librarian maintains a database of new and borrowed books with dates. Another name for LMS is Integrated Library System.



Roles/Importance of Digitalization in Education

Accessibility to education and educational materials: In the traditional era, pupils and teachers needed to be physically present in the same location for learning to take place. But recently with the introduction of technology in education, it allows for instant and convenient communication over great distances at the click of a button. In secondary and secondary schools, this same technology allows for cyber-schooling, where children can complete their work from the comfort and convenience of home. This really helped to facilitate teaching and learning during Covid-19 pandemic where teachers were teaching their pupils via WhatsApp, MicroSoft Team and other digital means. Digitalization has improved access to educational materials and lessons by pupils. Today children at secondary schools can join online classes by other schools in televisions, YouTube and others. And this has in turn contributed significantly in the general advancement of education in Nigeria.

Easy interactions between Teachers and Students: With the development of online educational programs, the interactions between teachers and students have undergone a fundamental shift. For example, because this interaction is online, class time is no longer students' only opportunity to ask their teachers questions and request information. Instead, they can take advantage of emails, instant messaging, and texting to ask their teachers questions anytime, rather than having to wait for the next class, when the question is no longer fresh in their mind.

Online Assessment: Along with online education comes the advent of online testing, which is hugely beneficial for a whole host of reasons. Foremost among those reasons is the fact that online testing is impartial and entirely fair. If a machine is grading the test and automatically correcting wrong answers, it's impossible to show any signs of bias. Additionally, online testing can be an excellent solution for those who suffer from test anxiety and are distressed by taking tests in a room with a group of other people. Finally, it's also much better for those with busy schedules, who may struggle to be at a testing center at a particular time.

Education for All: In the past, a rigid classroom structure defined the world of academia. Each student had the same experience, no matter their differing needs or abilities. While some students could function well in this environment, others had unmet needs. Technology improves a school's abilities to meet the needs of all types of students. Now, students with hearing, speaking or seeing impairments, or those who are largely housebound, can still receive a quality education. Technological advancements can also meet the needs of students with intellectual, social, or developmental disabilities. No matter what a student's unique needs may be, technology affects education for the better by improving our ability to create learning environments that work for all.

Availability of Online Learning Content: Learning used to take place exclusively in a classroom setting. Educational tools were either books or officially produced videos. One of the ways the Internet has changed education is by allowing anyone to share their knowledge with the world by publishing an educational blog post, e-book, or YouTube video. The far-reaching benefit that comes out of this is that it makes it easier for anyone to learn.



Individualized Learning: Educational spaces are becoming increasingly aware of the fact that what helps one student learn may be virtually useless to someone else, and what makes no sense to one student may be the only thing that clicks with another. Everyone’s brain works differently, and everyone has a unique learning style — yet, for many years, all those students read from the same textbook. With the introduction of technology in education, students can benefit from having a range of tools and learning technologies at their fingertips.

Overview of the Current State of Digitalization of Secondary in Anambra State

Realizing the importance of digital technologies, most countries have fashioned out a robust educational policy in their educational system prioritizing digital technologies. Garret et al (2021) noted that by the end of 2021, that up to 81 percent of learners were using video conferencing, recording, and distribution and accessibility technology. Nigeria is not an exception to this. It is realized by stakeholders or educational policymakers that digital technologies must be incorporated fully into the educational system. This is reflected in the policy on ICT by the federal government of Nigeria in their 9- 3- 4 educational policy which is entitled National Implementation Guidelines for ICT in Education henceforth called (NIGICTIE, 2019). It has vision and mission. The vision is “to make education universally accessible, empowering, inclusive and enriching”. And the mission is “to meet the human capital investment of the nation for attaining and enhancing sustainable socio-3 economic development, global competitiveness as well as the individual’s ability to survive in a contemporary environment” (NIGICTIE, 2019).

The objectives of ICT in education are spelled out in the educational policy on ICT.

These are:

- To facilitate the teaching and learning processes.
- To promote problem-solving, critical thinking, and innovative skills.
- To promote life-long learning and advance knowledge.
- To enhance the various teaching/learning strategies required to meet the needs of the population.
- To foster research and development.
- To support effective and efficient education administration.
- To enhance universal access to information.
- To widen access to education and the range of instructional options and opportunities for any-where, any-time, any-pace and any-path learning.
- To promote the commercialization of ICT in education.
- To develop and support technical infrastructure that maximizes digital creativity, sharing, and innovation.

Factors Militating Against Digitalization in Nigerian Schools

The following among others pose difficulties to digitalization of secondary schools in Nigeria.

Shortage of Facilities: The shortage of digital facilities to meet the global challenges in majority of our secondary schools poses a challenge to digitalization. Abubakar (2018) observed that digital facilities are lacking in most basic schools and few computer systems available are being infected with virus which makes them unfit for the digitalization project.



Electricity Supply: the epileptic nature of power supply in our country is no longer news. This is still a great challenge to digitalization as constant power supply is needed to maintain the effectiveness of this project.

Negative Attitude to New Technologies: some teachers, school administrators and parents are resistant to the use of technological equipment by the children especially at the secondary school age. This attitude constitutes a great challenge to the advancement of the use of ICT in our schools. Some of these people are still resistant to accepting the use of technology as they term them to be devilish.

High Cost of Digital Facilities: Digitalization is capital intensive. Equipment required for a standard digital environment for teaching and learning such as computers, laptops, iphones, ipads, projectors etc. are costly. So, shortage of funds is affecting the installation of digital infrastructure facilities in our secondary schools. Nigerian government has not sufficiently funded education generally not to talk of funding digital technologies in the educational system. Ogumode, Somadina and Yahaya (2021) noted that the allocation coming from each of the tiers of government for the administration of the schools are not adequate.

Poor Policy Formulation: Poor policy formulation or formulating is another issue responsible for the poor implementation of education policy in Nigeria; due to the low capacity of educational policymakers and lack of exposure to new policy formulation approaches and methodologies.

Poor Policy Implementation: Nigeria is good at policy making and sometimes implementing and managing the execution of these policies has become a challenge for higher institutions and the education system. Most educators and other stakeholders recognize that Nigeria's politics and education are a masterpiece, but implementation has been the biggest problem.

Inadequate Funding for Education: For over thirty years, the country has been unable to successfully implement national education policies. This is despite the fact that funding is a central factor in achieving educational goals. Inadequate funding in education has been a major challenge in the of the implementation of most education policies and programs.

Lack of Political Will: After several reviews of national education policy, none of the editions of national education policy has addressed the issue of adequate implementation in education. Ironically, some policies, such as universal primary education, formulated during the Year of Prosperity were implemented during the economic downturn, making it difficult to implement such policies.

Inconsistency in Education Policies and Programs: Nigeria has undergone several appraisals, reforms and innovations in education policies and programs. Many inconsistencies have led to a poor level in the education system. Frequent changes in politics and government tend to have a negative effect on education policies and programs.



Poor Conditions of Service for Teachers: The expedition to provide working conditions desirable to the teachers in Nigeria has been a herculean task. Comparative of the conditions of service of teachers do not commensurate with their statuses educationally vis-a-vis others with similar qualifications or even less in other sectors of the economy. Salaries are inadequate and poor housing if any, lack of facilities to carry out their jobs among others. This situation led to dissatisfaction with jobs and thereafter, brain drain syndrome.

Inadequate Infrastructural Facilities: Inadequate infrastructural facilities are another problem facing the management of policy implementation in Nigeria. Secondary schools in Nigeria and Anambra State in particular need a lot of infrastructure to manage the policy implementation of the national academic benchmark of teachers-student ratios across the country. The existing infrastructures are not sufficient to fully implement the digitalization policy. Inadequate infrastructure such as desks, chairs, desks, electricity, water, dormitories, science labs, workshops, libraries and internet services will hamper the digitalization of schools in Nigeria. In many secondary schools in Anambra State, there is shortage of infrastructural facilities such as classrooms, Libraries, computer Labs, ICT centres, tables, desks, chairs, white board and the likes. On the other hand, the digital facilities to meet the global challenges are lacking in most of secondary schools. Ogunode and Dahir (2021) observed that e-library is still not adequate to meet the needs of the growing population of the basic communication.

Institutional Corruption: Institutional corruption is another problem that impedes the full implementation of education policies in Nigeria. The funds allocated for the implementation of education policies and programs are diverted into private pockets by some officials of the ministries of education. It is worthy of note that some heads of schools receive a 10% reward for carrying out a project in their establishment. Some parents even bribe the school principal to get their children into school. The owners of schools also give bribes to the officials of the Education Commission so that they can approve their private schools. There is even sexual harassment among students and teachers in schools. This endangers the implementation of digitalization policy.

Insecurity: The challenges of insecurity are another major challenge to the implementation of digitalization policy in Nigeria. Many educational policies designed and formulated to improve access to education and improve the quality of education have been frustrated due to the problem of insecurity in the country. Many educational programs, such as Safe School Initiatives, Girls' Education, Women's Education, and Universal Basic Program, have been delayed by the various forms of insecurity issues the country faces. Most of the gadgets needed for the digitalization of the schools are not safe in the schools due to the problem of insecurity. They are, sometimes kept in the homes of Traditional Rulers or the Town President General for safety.

Inadequate Number of Teachers: The inadequate teacher is one of the main problems hindering the implementation in Nigeria. The number and quality of teachers in Nigerian schools are not sufficient to implement the digitalization policy.



Poor Digital Skills and Knowledge: For effective and effective digitalization to be achieved in secondary schools, administrators must be shrewd in the use of digital devices and tools such as smart phones, computers, email, social media (facebook, twitter, whatsapp, instagram) google document, Microsoft package (word, excel and power point). Unfortunately, in Nigeria, many teachers are not acquainted with these e-equipment. Willie and Akarika (2023) argued that to perform optimally in this digital age, one has to be a digital literate and up to date in the skillful use of modern technology.

The question then becomes, what should be done adopted to improve this project in our schools?

Research-Based Strategies for Actualising Digitalization in Secondary Schools

As stated in Onyia (2021), the strategies that should be adopted to achieve digitalization in our education system include the following:

1. Restructure the environment for teaching and learning as well as education administration to be ICT-enhanced.
2. Carry out and encourage the continuous and mandatory professional development of core ICT Teachers and Administrators.
3. Ensure appropriate ICT training including content development and delivery for all staff.
4. Review the curricula periodically to reflect emerging good practices in line with national goals.
5. Promote ICT proficiency in mass and non-formal education with a special focus on children, women, and people with special needs.
6. Develop and strengthen standards and guidelines for content and instructional materials in electronic media and the use of ICT tools in formal and non-formal education.
7. Strengthen and expand Open and Distance Learning as well as blended and e-learning.
8. Carry out a needs assessment to identify skill gaps and encourage the acquisition of appropriate ICT skills to mitigate the gaps.
9. Encourage private sector participation in Education and Training in ICT.
10. Encourage ICT education at all levels.
11. Ensure periodic quality assurance in the development, utilization, and sustenance of ICT in education.

All these wonderful policies notwithstanding, with its enormous potentials of information Communication Technology and digital literacy, yet not much seems to have been achieved. The ICT policies are comprehensive in scope and are mainly statements of intention; however, the implementation of such an ambitious intention has not been achieved. Most secondary schools in Nigeria are yet to take advantage and fully implement digitalization in their management. Several factors have militated against digitalization of education in Nigeria, secondary education inclusive.

Suggestions for Improvement

For digitalization of secondary education to be achieved in Nigeria, all hands must be on deck. The government, educational stakeholders, parents have great roles to play. The following are suggested to be the way forward:



1. The government should increase the funding of Basic education in Nigeria so as to make it possible for the schools to give to the development of digital education; Increased Fund Initiatives from the government and educational stakeholders is needed to sustain digitalization policies. Digitalization is capital-intensive. It requires huge investment/ financial commitment from Federal, state and local governments.
2. The government should collaborate with stakeholders to provide adequate digital infrastructure facilities in all the Basic schools to aid accessibility and usability. Innovation Hubs/clusters should be set up in areas where they do not exist to make room for the laps that occur in some areas in Nigeria, existing hubs should also partner with civil society groups to promote capacity building programs on digital education.
3. The government should address the problem of power generation and distribution across the country. The stakeholders can equally provide the schools with capable generators that can carry the digital equipment.
4. The government should invest more in the information communication technology to improve the connectivity level across the country.
5. The government should subsidize the price of digital facilities for teachers, school administrators and students to ensure that they will be able to acquire digital equipment such as computers, laptop, iphones and others
6. Government should provide tax incentives/ reliefs for telecoms to enable them to reduce the costs. Telecoms can also provide tech parks using intranet with available resource materials to allow for access to the internet.
7. Trainings should be organised for teachers and school administrators, including parents on digital skills. This will help to enhance the skills and knowledge of these ones on ICT so as to be effective and efficient in manipulating digital instruments.
8. The government should employ more digital experts and post them to schools. These experts will help to put other staff through to fit into the system.
9. The government should implement all policies in regard of digital education in all level of education especially the basic school education in Nigeria;
10. In order to ward off resistance to change, there should be more orientation programs on the need and importance of digital literacy using the bottom-top approach of reaching out to grass root individuals.
11. School administrators should involve stakeholders and alumni bodies to equip the school with digital equipment needed for this project.



12. The government should deploy all anti-corruption agencies in the country to monitor the funds released to all the basic schools across the federation.

13. Our children should be exposed to the use of phones, computers, iphones and social media platforms for educational purposes rather than for funfair.

14. Funding: Funding is essential to promote teaching and research. Only when it is available to policy implementers that they can engage in serious digitalization policy implementation. Theu, the implementation of the policy can be effectively managed when funds are available.

15. Provision of Adequate Infrastructure Facilities: The government should provide adequate infrastructure facilities for all schools in the country.

16. Provision of Adequate Security: The government must provide adequate security throughout the country to allow for the safety of life and property. For example, school boards can implement various policies in high schools without fear of being attacked by bandits and hoodlums.

Political Will: Political office holders must have the positive political will to implement education policies.

Conclusion

Digitalization of secondary education in Nigeria requires collaborative efforts from teachers, parents, school administrators, stakeholders and the government. Teachers and school administrators should be open and accept this new trend. Parents should change their mentality about technological equipment but rather encourage and monitor the use of them by their children. This will help to ensure that the children will not derail from the positive use of the digital tools and platforms. Government on their own should prioritize the funding of education and implementation of ICT policies in educational systems. With the aforementioned, Nigeria would be able to achieve this goal of digitalization of secondary education management in our country.

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