



**International Journal of Economics,
Environmental Development and Society
(IJEEDS)**

DIGITALISATION OF THE MANAGEMENT AND ADMINISTRATION OF NIGERIAN EDUCATIONAL SYSTEM FOR EFFECTIVENESS AND PRODUCTIVITY

Nancy Nnnebuihe NWOSU

Department of Educational Management

Faculty of Arts and Education

University of Africa, Toru-Orua, Nigeria.

nnebuihenwosu75@gmail.com, nancynwosu2@gmail.com

Torupere KOROYE

Department of Educational Management

Faculty of Arts and Education

University of Africa, Toru-Orua, Nigeria.

ABSTRACT

Digitalisation has been adjudged the ultimate tool in the facilitation of educational activities for achievement of goals; as such this paper examined the digitalisation of the management and administration of Nigerian educational system for effectiveness and productivity. The purpose was to determine the impact of digitalisation on teaching and learning process as well as the administrative perspective of educational institutions. Exploration of other scholarly works unveiled the importance, benefits and myriad of challenges of digitalisation in education, which include lack of laptop or computers for staff and students, inadequate funding, inadequate supply of power and manpower, high cost of access to information, limited proficiency in information literacy skills, restricted access to relevant materials, complexity of search techniques and interfaces. The paper proffered some solutions as; effective funding of the programme, training adequate manpower, developing in the citizenry a strong consciousness and commitment to the acquisition of computer literacy and internet compliance, and concluded that improving on digital education in Nigeria would contribute immensely to the achievement of high quality in education.

Keywords: Administration, Digitalisation, Education, Effectiveness, Management, Productivity.

Reference to this paper should be made as follows:

Nwosu, N. N., & Koroye, T. (2024). Digitalisation of the management and administration of Nigerian educational system for effectiveness and productivity. *International Journal of Economics, Environmental Development and Society*, 5(3), 347-359.

INTRODUCTION

The state of educational system in Nigeria requires proper overhauling and digitalisation to meet the standard of education globally. It has been observed that the system has been struggling over the years in the midst of a host of challenges, which has left it far behind in the attainment of the level of quality that the citizenry can boldly be proud of anywhere. Even in the full realisation and acknowledgement of strategies, ideas and innovations to adopt, and channelling things the proper way is still posing serious challenges. Nigerian system of education is highly in need of urgent attention in the harmonisation of teaching and learning activities to whip lines in to tracks for the achievement of her expectations. In the global space, teaching and learning process is no longer limited to the four walls of the classroom, but the case of Nigeria is different, from the basic to the tertiary level of education, there is no formidable digitalisation. The importance of digitalisation of education cannot be overemphasised as it opens up wide variety of learning. In this era of Information Communication Technology (ICT), interest ought to be and should widely grow in digitalising the management of teaching and learning process as well as administration for high productivity. According to Akinyemi et al. (2022), there is virtually nothing in people's lives that do not include some type of digitalisation as evidenced by the COVID-19 pandemic era, which demonstrated that more can be done online. In modern world, digitalisation is very imperative for swift management and smooth running of education for effectiveness and better productivity, as Nigerian educational systems are expected to live up to this call.

The Concept of Digitalisation

Digitalisation is the adaptation of a system, process, etc. to be operated with the use of computers and the internet (Dictionary of Oxford languages). Accordingly, digitalisation involves the use of digital technologies and data in order to create revenue, improve business, replace and transform societies. This means that digitalisation integrates digital tools and system into various aspects of a business operation, from management and communication to production and customer service. It has been identified as the most significant technological trend that is changing both society and business. Hence, it could be declared an integrator of all in all information.

Management of Education through Digitalisation

Management is a process of getting things completed effectively and efficiently through people. It involves strategy, innovation, initiative, ideas, creativity, problem solving and decision making (Nwosu, 2015). From the foregoing, management/administration is the coordination and utilisation of material and human resources for the achievement of goals in organisation (Nwosu & Maduiké, 2015). Every organisation including education is founded on the principles of goal achievement and that is why a group of people are saddled with the responsibility to pilot the affairs of the organisations. The objectives and importance of management in any organisation stems from the quest for maximum results with minimum efforts and resources, increasing the efficiency of factors of production, maximum prosperity for employer and employees, human betterment and social justice (Nwosu, 2021).

Education on the other hand, is the process of imparting knowledge on an individual or group of individuals in a formal or informal setting. Parankimalil (2012) described it as a process

through which a child or an adult acquires knowledge, experience, skills and attribute which makes him or her civilised, refined, cultured and educated. In line with Parankimalil's notion, Keziah (2017) concurred that education is an activity which involves the grooming of a child and equipping him with required knowledge and attitude that will mould him into a better citizenry.

The above reveals that education seeks to develop an individual's innate ability, make him constructive, objective, confident and rational in thinking. Educating an individual is giving him some desirable knowledge, understanding, skills, interests, attitudes and critical thinking. Education comprises all the series of instructions and disciplines which are intended to enlighten the understanding, correct the temper, and form the manners and habits of youths, and fit them for total usefulness in their future station. It describes the total process of human learning by which knowledge is imparted, faculties trained and skills developed (Duru, 2011). From Ayeni (2009) point of view, education is a vital instrument in the process of nation building.

From all indications, education occupies a vital position in the development of humans and any nation. In the real sense, the society depends on education for developments and training of her citizens, and also for the achievements of its needs, values and aspirations. As a matter of fact, education is the harmonious development of the physical, mental, moral (spiritual) and social faculties, the four dimensions of life, for a life dedicated service. It is the process of awakening in another human being a thirst for knowledge, desire to develop all of one's capacities, create the desire to be whole and meaningful person. Education is ultimately the door of economic, social and personal advancement and the wellbeing of a nation and the society at large (Nwosu & Oputa, 2018).

Apart from these, it is the bedrock of national capacity building, national integration and sustainability. Haven identified education as the host, developer and sustainer of all aspects of life, the need to facilitate its activities becomes imperative. It is on this note that digitalisation is emphasised. When technology takes over traditional and analogy methods of a process, it becomes scientific, better, effective, efficient and more productive. Therefore digitalisation of education cannot be downplayed as it possesses a powerful feature in the activation of speedy and smooth running of the system. When information is stored into a technological system, its accessibility is promoted, and physical contact is drastically reduced. According to Otamiri and Odu (2022), there are emerging evidences that digitalisation can help to improve the attainment and raise standards of education in primary and secondary schools. The following among others are benefits of managing education in a digital world: empowering administrators, teachers and learners, enhancing creative and innovative teaching and learning, promoting flexibility, promoting better values, generating a professional workforce and fulfilled citizens and prompt dissemination of information (Otamiri & Odu, 2022).

Basically, management and administration of education consist of planning, organising, staffing, coordinating, controlling, reporting, budgeting, division of labour, supervision evaluation etc. which require the application of digitalisation for easy coordination. Many researchers have revealed that digitalisation helps to reduce complexity and enhance the overall administration of education (Krishnaveni & Maenakumari, 2020). In accomplishing this feat, Ben-Zion (1995) in Nwosu (2015), asserted that computers can be used for effective educational administration by fulfilling the following:

- General administration;
- Payroll and financial accounting;
- Administration of students' data;

- Inventory management;
- Personal record maintenance;
- Library system.

Digitalisation fosters the dissemination of information and knowledge by separating contents from its physical location. This flow of information is largely imperious to geographic boundaries allowing remote communities to become integrated with global networks and making information, knowledge and culture accessible in theory to anyone. Similarly, digitalisation enhances the day to day management of educational institutions and various functional areas in which it can be used as thus:

- Timetabling;
- Students' admission and tracking;
- Financial management;
- Medical services;
- Procurement and store management;
- Data distribution and management (Mugende, 2006 in Nwosu, 2015).

Digitalisation improves effective management of education to operate efficiently and proactively in terms of adequate supervision of learners and regular assessment of students' activities in the classroom (Abe et al., 2023). The following digital facilities to enhance the management and administration of education have been identified by (Loredana, 2016; Falana, 2015): desktop computer system, laptop computer, printers, photocopying machines, single user modems, routers and MIFIS for internet connectivity, micro-soft office suite, web browsers, official e-mailing platforms, school website and school dataset management system.

Digitalisation of Education for Effectiveness Efficiency and Productivity

Effectiveness is the degree to which something is successful in producing a desired result or success. As stated by Nwosu (2019), it means having power to produce a required or desired effect. Effectiveness yields to productivity. It entails making sure that all organisations' objectives serve their goals, which in turn serve the purpose. Whereas efficiency refers to the act of performing activities with minimum wastage of time and optimum usage of resources, so that the work done is faster and in an error free manner. Efficiency focuses on the following: doing the assigned task correctly, inputs and outputs, effort oriented, operation oriented and time oriented. It is also worthy to note that effectiveness and efficiency give credence to productivity, which is the ultimate desire of every organisation.

Productivity as the name implies is the efficiency of production of goods or services expressed by some measures. From Nwosu (2021) perspective, it means using the highest level of performance with low expenditure of resources. Productivity is a crucial factor in production performance of firm and nations. It is also a measure of quantity and quality of work done, considering the cost of resources it took to do the work.

$$\text{i.e: Productivity} = \frac{\text{Quantity of work} + \text{Quality of work}}{\text{Cost of resources needed to do the work.}}$$

Many activities undertaken by organisations deal with individual or organisation productivity ranging from training, pay and appraisal systems, selection, job designs, incentives and motivation.

In education, productivity will imply using the inputs and processes of schooling in ways that increase desired outcomes (National Academic Press, Washington, DC). This will consist of effective utilisation of human and material resources for high productivity which is the essence of every organisation. Therefore, the ultimate concern and interest of digitalisation of education is to harness the available resources using total quality management to ensure success, which will obviously impact positively on its effectiveness, efficiency and the productivity. Educational activities revolve mainly around individuals (students & personnel), which when digitalised, huge transformation in teaching and learning will emerge. Bldr (2021) strongly supports this view by stating that the application of digital transformation to learning in developed countries has resulted in the following outcomes: increased student and teacher collaboration, provision of distant communication, increased student participation and engagement facilitating authentic learning and reflective practice, as well as fostering learning communities and a change in the lecturing approaches to teaching also occurred.

The above highlights the need for total acceptance and adoption of the application of technology in to education in Nigeria for our own transformation in knowledge acquisition. Digitalisation of education is an opportunity to develop a cognitive resource-based mechanism in learners and improve skills, lifelong learning and continuous education. The Nigerian educational system was one of the sectors that was badly hit during the eruption of the COVID-19 pandemic in 2020, as precautionary measures were taken by the Federal Government to minimise physical contact by individuals, to limit the spread of the virus. The minister of education as directed by Federal Government announced the immediate suspension of all educational activities, which forced over 46 million students across all levels of education to stay at home (Education in Emergency Working Group: EIEWG, 2020). This was contrary to educational sectors in other countries. The close of schools in Nigeria had no back-up policy to address the learning disruptions for students (Oyeniran & Alamu, 2020). This posed a serious challenge for educational institutions, parents and students as there were no other modalities put in place for learning.

This scenario exposes the big gap that exists between the traditional method of education and digitalised form. During the shutdown of the educational institutions as a result of the pandemic, effectiveness, efficiency and productivity expected from the system crumbled. But if the nation operated digital form of education, the system would not have been closed as people would have accessed learning from any point or position they found themselves. The system would have operated seamlessly without the interruption of the achievement of the educational objectives.

Digitalised Teaching and Learning: Classroom Perspective

Digital teaching and learning is any type of innovative learning that is accompanied by technology or by instructional practice that makes effective use of technology which encompasses the application of a wide spectrum of practices such as blended and virtual learning. Corroborating the above definition, Ryle (n.d) affirmed that the digital learning is any instructional practice that effectively uses technology to strengthen a student's learning opportunities for teachers, and to provide personalised learning experiences for students. To him,

if teaching is utilised correctly there are a number of opportunities that will be available to both students and teachers.

According to Ryle, there are several ways digital teaching and learning impact on learning outcome:

- Students will become more involved in learning process due to the variety of new instructional strategies teachers will be implementing in the classroom;
- It will allow students direct correlations between theories and their application which will provide direct feedback to enhance learning and comprehension;
- It will provide immediate feedback to the teacher to allow him make adjustments on their instructions to meet the needs of the students;
- The students will no longer be restricted to the classroom;
- It will also enhance creativity on the part of the students;
- It will allow students to learn at their own pace.

Judging from the antecedence of technology, one can categorically acclaim digital teaching and learning the turning point of education. Perhaps, this is why AtZ Technology, declared it the future of students. Digital learning creates access to unlimited knowledge. It is a great revolutionary exercise for students and teacher compared to traditional learning as it creates room for flexibility and continuity. AtZ Teaching (n.d), pointed out the importance of digital learning as:

- Recorded lectures;
- Anytime access;
- Flexibility;
- Being familiar with technology;
- Personalised learning;
- Better engaging;
- 24/7 Resource availability;
- Track the students' progress;
- Thrive the writing skill.
- Sharing information faster than before.

Digital teaching and learning strategies have been seen as ways of facilitating teaching excellence, promoting research-based teaching, supporting interdisciplinary education, and bringing practical innovations to classrooms. When the process of teaching and learning is digitalised, it becomes more exciting, satisfactory, fulfilling, motivating, effective and productive. It can be done both in and outside the classroom without restriction to time frame. Even in the classroom, it becomes easier with the use of gadgets. Digital education will benefit teachers in the following ways:

- Easy access to factual information;
- Deliver more engaging lesson;
- Greater flexibility;
- Better quality resources;

- Understanding students (<https://www.serviceforeeducation.co.uk>).

In conclusion, McNulty (2021) averred that curricula that are delivered in digitalised environment improve learning and innovation skills. Whereas, curricula taught in non-digitalised contexts cover cognitive skills such as critical thinking, problem solving and creativity, because it is possible to teach and learn these skills without having access to digital tools and environment.

Impact of Digitalisation of Education on Students and Teachers

There have been different assertions by different authorities as regards the impact of digitalisation on students and teachers in the institutions of learning. Today digitalisation has affected virtually all industries or sectors, like banking, architecture, medicine, engineering, law, environment etc. Delivery of education has transcended from analogy to digital. Education as the most important key to good life and the propeller of knowledge deserves development and publicity for its accessibility by the citizenry. The National Policy on Education (FRN, 2014) stressed on mass literacy of the people, and for the actualisation of this hope and aspiration of the nation, digitalisation of education becomes important since is a major medium of disseminating knowledge and information to all. This assertion is confirmed in the work of Nwankwo et al. (2016) that everything has gone digital and research is making serious inroad into and assuming greater dimensions in the application of electronic technology in modern education, resulting in series of innovations. Digital learning as part and parcel of our daily living and the trending of its application in education has become widespread. This basically means that digital education has become a vital phenomenon to be cherished in the educational system as everything about learning is computerised and can be accessed anytime, anywhere including in the classroom.

Digital education as a matter of fact, has been adjudged the most important functional area in the educational system, hence its use could improve the overall environment and efficiency of educational institutions and lead to improving the following functional areas and not limited to inventory control, allocating pupil/personnel services, student record, employee productivity, etc. (Roblyer, 2005). The essence of education is for acquisition of knowledge which is the backbone for accelerated development needed for the country. In line with the above assertion, Obi (2010) maintained that effective education is the key to ensuring the success of our educational system. Therefore, the need for teachers and learners to have up to date knowledge and skills, initiative, creativity and ideas to develop pedagogy that will meet the demands of the time in a positive way. With the adoption of digital education, the stress and hazels of analogy system of learning will be over, as well as the contact between the teacher and overpopulated students in an un-conducive environment, with inadequate teaching and learning facilities will be minimised (Nwosu, 2019).

To this effect, Idongesit and Kanu (2015) asserted that technology has ushered in new era of mass media, bringing with it great promises and great concerns about the effect on students' development and wellbeing. This is to say, that there is enormous fruition of digitalisation in delivering and disseminating qualitative education. Through digitalisation, teachers and students can seek explanation, compare experience, investigate problems, reflect reason and learn many concepts in the school curriculum. On the side of the students, digitalisation impacts specifically on them in the following ways:

- It enables them to engage in self-directed learning by providing individualised content and overcoming some limitations of traditional teaching methods;
- Appropriate use of digital learning has positive impact on their study habit and helps to improve on their academic performance since it facilitates access of information; enhance study/reading habits; accelerate academic success by making information easily available; and improve managerial and professional skills (Tah, 2010).

Digitalisation on Teachers' Performance

- Increase in the time learners devote to learning;
- Enhance the speed of availability of data and information;
- Provision of immediate feedback;
- Assist less qualified teachers;
- Increase teachers' efficiency and effectiveness (Nwosu, 2015).

Benefits of Digitalisation of Education in Nigeria

Ab-initio, the traditional method of teaching and learning process has been in practice, where teachers teach with chalkboards and learners take notes. In recent times technology has made the process active. With the advent of digital techniques, classroom instruction has taken a new dimension and has become more engaging (Akinyem et al., 2022). As noted by Eziaghighala et al. (2016), digitalisation creates room for flexibility, diversity, measurement and opening. Succinctly, digitalisation from the researcher's point of view is very effective, and encompasses consistency, cost effectiveness, less impact on environment, offers teaching repeatedly and ensures quick delivery. To this end, Duong (2016) reported the following benefits of digitalisation as:

- It makes for active learning;
- It employs diversified teaching methods;
- It makes for better attention and realisation;
- It ensures effective time management for teachers;
- It creates room for visual stimulation.

Subsequently, Jain International Residential Schools (JIRS, 2021) articulated the following benefits as:

- One-one learning (at their pace);
- Individualised learning experience;
- Endless information;
- Smart classrooms;
- Digitally updated;
- Develops smart learners;
- Promotes self- motivation;
- Expansive learning opportunities;
- High-engagement learning;

- Ease of sharing;
- Students' accountability.

It is also important to note that digitalisation can foster in the following areas:

- It encourages growth of academic skills when properly used;
- It can serve multiple teaching functions and diverse audience;
- It has the potential of delivering messages promptly;
- It enables students to study anywhere and anytime;
- It allows for creation of digital library where students and lecturers can access research materials from any place at any time;
- It offers the combination of education while balancing family and work life;
- It eliminates time and geographical barriers in education for learners as well as teachers.

However, digital learning improves teaching styles and makes for self- development.

Challenges of Digital Learning in Nigerian institutions:

Digital education which has been adopted to support collaborative learning among students and to facilitate and improve the efficiency of education is faced with numerous problems. Nwosu (2015, 2023) expressed that digitalisation is still at infancy level in developing countries, therefore it has not stabilised. According to Pal (2006) and Kizito and Bijan (2006) in Nwosu (2019), some digital learning studies conducted in developing countries including Nigeria, show lack of vision and framework in its implementation, due to the absence of technical and social skills required. Based on this, they identified the following problems:

- Limited connectivity in many educational institutions militates against access to digital learning;
- Equipment such as computers, digital technology and internet are not available for use;
- The soft-wares for designing content for facilitation of digital learning are not provided;
- The manpower required for the effective use of the digital learning are trained.

On the side of the students these challenges were revealed:

- Lack of experience and confidence in using computers;
- Lack of skill in the use of applications such as Microsoft word, excel and power point;
- Time management and self-motivation influence students' performances in digital learning (Judith, 2004 in Nwosu, 2019).

From this point of view, the challenges of digitalisation include:

- Need for self-discipline;
- Missing school interactions;
- Lack of teacher contact;
- Poor time management;

- Technological difficulties (<https://amberstudent.com>).

Apart from the aforementioned, there are other pressing challenges facing digitalisation of education in Nigeria:

- Lack of laptop or computers for staff and students;
- Inadequate funding;
- Inadequate supply of power and manpower;
- High cost of access;
- Information overload;
- Limited proficiency in information literacy skills;
- Restricted access to relevant materials;
- Complexity of search techniques and interfaces;
- Non-availability and accessibility of digital and printed information resources, to mention but a few;
- It reduces the institutional role and the role of the instructors as directors of the process of education;
- It may lead to failure and difficulty in regulation of bad activities like cheating.

Prospects of Digitalisation of Education in Nigeria

The possibility of achieving the aims and objectives of digital education in Nigeria is not in doubt if the proper steps are employed. Digitalisation of education will thrive if the following factors are considered:

- Effective funding of the programme;
- Training adequate manpower;
- Developing in the citizenry a strong consciousness and commitment to the acquisition of computer literacy and internet compliance;
- Improvement of information communication Technology (ICT);
- Sustaining private sector participation in computer education;
- Improvement on power (electricity).

CONCLUSION

The foregoing reveals that improving on digital education in Nigeria would contribute immensely to the achievement of high quality in education. Digitalisation is adjudged auspicious for functional education if the challenges are combated. From all round perspectives, it is considered an effective agent for designing, implementing, managing, supporting and expanding teaching and learning through effectiveness, efficiency and productivity. As a matter of fact, a programme of activity for knowledge which can be accessed at all times in different locations without restriction is a plus to Nigerian system of education and should not be neglected. As such, all hands must be on deck to achieve the success of the programme if our education has to compete with other educational systems in the world and mostly for easy access. No wonder why

Nwosu (2015) stressed on the use of computer for effective teaching and learning at all levels of education.

Suggestions

Haven revealed and reviewed the benefits, challenges and prospects of digitalisation of education, the researcher suggests that:

- Government as well as management of institutions of learning should train manpower for the operation of digital learning.
- There should be improvement on power supply.
- Electronic materials for use in the institutions should be provided.
- Interventionist agencies should help to make it a reality.
- Investment of more funds is encouraged.
- Stakeholders of education should also be involved.
- There should be building of learning pathways through apps and platforms.
- Government should collaborate with internet, digital and telecommunication service providers to ensure that ICT infrastructures are available and in good conditions.

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