



Information and Communication Technology Enriched Curriculum as A Tool for Revamping Secondary Education to Meet Global Needs and Challenges in Post Pandemic Era

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Abstract

The paper centred on the need to enrich the secondary education curriculum in Nigeria with Information and Communication Technology (ICT) for the purpose of meeting global needs and challenges in the post-pandemic era. It was necessitated by the experiences of the COVID-19 pandemic era in the country which revealed that the learners at that level of education lacked the necessary knowledge, skills, values and attitudes to adapt and thrive in a global society despite the fact that there were available ICT tools that could be infused into their curriculum to transform them into globally relevant and competitive products. The paper discussed, ICT-enriched curriculum, secondary education, global needs and challenges, and then progressed to explore the relationships that exist among them. The exploration of the relationships showed that ICT-enriched curriculum could engineer the necessary diversity and innovation for revamping the Nigerian secondary education to meet global needs and challenges in post COVID-19 era. It was recommended, among others, that the state ministries of education should intensify efforts to make the national information technology policy a reality in their schools in order to optimally harness the potential of ICT in revamping secondary education in Nigeria to meet global needs and challenges in the post-pandemic era.

Keywords: ICT-Enriched Curriculum, Secondary Education, COVID-19, Global needs and challenges.

Introduction

Curriculum is an educational programme with enormous potentials for addressing global needs and challenges in the post-pandemic era. This is reflected in the opinion of Ominyi and Odoemenam (2011) that it is the duty of educational systems of the countries of the world to train their citizens to contribute in the solution of the problems that effect them, and in the process, contribute to their national development through the instrumentality of the curriculum. So the curriculum could be tailored to proffer solutions to a number of economic and social problems that Nigeria and the wider world are facing today in the post-pandemic era. These problems include increasing youth unemployment, poverty, climate change and their accompanying vices such as armed robbery, kidnapping, terrorism, insurgency and so on. This is predicated on the reports of an earlier study by Azi (2007) which show that every single problem that one could think of could be solved with education. Curriculum is the vehicle through which education operates (Arigbabu, 2016). It is not surprising, therefore, that we may need to fall back on the curriculum in the aftermath of the COVID-19 pandemic with its political, educational, economic, social and health implications and challenges to the way we do things.

For the Nigerian secondary school system to be of help in addressing the global disequilibrium and disorientation which was triggered by the COVID-19 pandemic requires an enriched curriculum, preferably an information and communication technology (ICT) enriched curriculum. This may be the case because despite the fact that every other social, economic and political issue suffers in the face of serious security problems, the ICT world keeps on booming, even during the COVID-19 era. According to Arigbabu (2016), ICT has brought significant improvement in different human endeavours across the globe, including education where it is making life easier, better and more enjoyable. Besides that, United Nations' Educational, Scientific and Cultural Organization (UNESCO, 2015) emphasises that school is no longer the only place where students learn as ICT-inspired globalization has made education borderless, making it possible for learning to be taking place anywhere and anytime whether the students intend or even realize it. It is hoped that these benefits of ICTs in education will be better harnessed and maximized in the Nigerian secondary education system in this period of uncertainty caused by the COVID-19 pandemic. The purpose of this paper, therefore, is to explore the possibility of using ICT-

enriched curriculum as a tool for revamping secondary education in Nigeria to meet global needs and challenges in post pandemic era. To do that, the work is organized under the following headings:

- a. ICT-Enriched Curriculum
- b. Secondary Education
- c. Global Needs and Challenges
- d. ICT-Enriched Curriculum and Global Needs and Challenges in Post COVID-19 Pandemic Era
- e. Conclusions and Recommendations.

Information and Communication Technology (ICT)-Enriched Curriculum

Information and communication technology (ICT)-enriched curriculum is a school programme that is well supported with modern technology and innovation to facilitate instruction and make learning more exciting, captivating and meaningful. It is recognized by the Federal Republic of Nigeria (FRN, 2014) in emphasizing the provision and utilization of ICTs in education because of the prominent roles they play in advancing knowledge and skills necessary for effective functioning in the modern world and the urgent need to integrate them into education in the country. This idea of ICT-enriched curriculum inspired the introduction of ICT as a policy in Nigeria in 2001 to facilitate the development of IT capability among learners and ensure its usage in supporting teaching and learning across the curriculum (FMST, 2001). According to Lopez (2008), ICT-enriched curriculum has the potential to contribute to substantial improvement in the educational system as it provides for innovative teaching and learning and engenders advances in research about how people learn, leading to issues such as the rethinking of the structure of education.

Ordinarily, an ICT-enriched curriculum offers teachers the chance to inject new passion into their subjects, to adopt fresh approaches to familiar materials and develop new skills to expand their career potential. This rubs off on the students, as it is actually a shift to a pedagogical rationale that focuses on students' competencies, by emphasizing the integrated use of ICTs in the teaching and learning process. It is in this regard that Attaochu and Odiagbe (2017) commend the government's attempt at broadening the scope of education by the administration of formal and compulsory ICT curricula in schools. It is the researcher's belief that enriching the curriculum with ICTs will promote increased learner engagement and

make learning less abstract and more relevant to students' life situations. This is made possible by the potential of ICT-enriched curriculum to assist learners to seek explanation, compare experiences, investigate problems, reason and learn many concepts in the school curriculum. Through these, they would learn how to learn and think about what they learn and so develop the spirit of self-reliance and confidence.

With the above qualities, it is imperative to explore the potential of ICT-enriched curriculum in the efforts to revamp education in Nigeria to meet global needs and challenges in post-pandemic era. So, as Nigeria and the world keep on struggling to tackle the challenges of worsening crime rate, climate change, cost of living crisis, the exponential rate of information-creation, looming planetary crises and so on, it is an ICT-enriched curriculum that will be able to engender an educational system in Nigeria that is revolutionary both in content and instructional strategies for teachers to prepare students to cope with the challenges of globalisation and knowledge economy which currently shape what happens in the world and how individuals respond to them. The adequate preparation of the Nigerian child for this should be the basic concern at all levels of education, especially the secondary education level which one of its aims, according to FRN (2014), is to inspire students with a desire for self-improvement and achievement of excellence.

Secondary Education

The secondary education in Nigeria is divided into two, namely: junior secondary education and senior secondary education. The former is the education which a child receives immediately after primary education while the latter is the education children receive after a successful completion of ten years of basic Education and passing the Basic Education Certificate Examination (BECE) (FRN, 2014). Each of them lasts for three years. One common thread in both parts of secondary education in Nigeria is the emphasis on ICTs in the teaching and learning process. For instance, concerning the junior secondary education, FRN (2014:15) states that "In recognition of the prominent role of Information Technology (IT) in advancing knowledge and skills necessary for effective functioning in a knowledge driven world, the Government shall provide adequate infrastructure and develop capacity for effective utilization of Information Technology (IT) to enhance the delivery of Basic Education in Nigeria." With regards to senior secondary education, the same FRN (2014:17) states

that one of its objectives is to “provide trained manpower in the applied sciences, technology and commerce at sub-professional grades”.

From the above statements, the secondary education in Nigeria seems to be intended to provide students with a broad perspective on the nature and application of ICTs in order for them to be properly equipped with the dynamism of recent technological advancements. So, it is expected that the Nigerian education at that level will engender the development of the basic human capital, that is required to meet the present and future challenges of globalization and knowledge economy. This lofty idea of adapting secondary education to the changing workplace of the 21st century means that teachers are supposed to be familiar with current trends of technological advancements in their various subjects. Unfortunately, available studies seem to suggest that this ideal remains utopian in the present Nigeria context. For instance, academic activities in schools in Nigeria were brought to an abrupt halt with the outbreak of the COVID-19 pandemic despite the possibility of ICT-enabled continuation of teaching and learning irrespective of teachers’/students’ locations (Chukwuma-Nosike and Offorma, 2022). So, the present study is advocating for ICT-enriched curriculum for secondary education in Nigeria in the effort to meet global needs and challenges in the post-pandemic era.

Global Needs and Challenges

Global needs and challenges may be divided into three broad categories, namely: the challenge of climate change and the need for sustainable development, the challenge of poverty and the need for equity in wealth creation and distribution and then the challenge of insecurity and the need for peace (Mkpa, 2013, Okonkwo and Agwu, 2014 and Oxfarm, 2023). Concerning the challenge of climate change and the need for sustainable development, one has to recall that the campaign to strike a balance between environmental protection and economic development has been the major concern of conservationists and climate scientists for some time now. This is because, according to Weyant (2017), the World Health Organization (WHO) calls climate change the greatest threat to global health in the 21st century. Enwere and Ani (2011) define it as the increase in average global temperature as a result of increases in greenhouse gases. It is a major issue of global concern because, according to Eze (2021), recent weather extremes such

as wildfires, frequent hurricanes, floods, droughts, desert encroachment, drying up of streams, intense rainfalls, extreme heat and so on have been attributed to it. To combat the increased food and water scarcity, more diseases, economic loss and the attendant human migration and conflicts that it may engender in this post COVID-19 pandemic era, there is the need to evolve a development pattern that is aimed at laying a firm foundation for fostering a peaceful scenario for sustainable development. This would save the world from many of its adverse effects, including poverty.

Poverty, on its own, is also one of the major contemporary global challenges. It is a condition in which a person lacks the financial resources and essentials to meet their basic needs. That is why Famade (2017) describes it as a term which is used to denote a serious lack of the means for proper existence. So many people are coming face to face with this social and economic malaise that the United Nations Organization (UNO) had to establish an international policy framework for poverty alleviation in 2015 (United Nations, 2015). This is summarized in Sustainable Development Goal number one: No Poverty. Even with that, wealth is still being accumulated by very few people. Oxfam (2023) reports that one percent of the world’s population had captured 63 percent of new global wealth in the past two years. This calls for an urgent need for equity in wealth generation and distribution in order to reduce the indices and outcomes of poverty in the post COVID-19 pandemic era such as unemployment, lack of material possessions, stealing, kidnapping, intolerance, and so on. These incubate and breed insecurity. From the foregoing, it is obvious that both climate change and poverty form parts of the global challenge of insecurity. Insecurity refers to a state in which people or things are exposed to the danger of physical or moral aggression, accident and theft. Agwu (2022) states that it comes in different colourations and magnitudes among which include insurgency, human trafficking, hunger, militancy, assassination, hunger, cultism and other untoward acts that are being experienced in the world today. The author draws a nexus between insecurity and climate change and poverty by asserting that it is usually one of the devastating consequences of internal upheavals such as unemployment, hunger, starvation, disease, ignorance, homelessness, environmental degradation and pollution. To tackle this, and set the stage for a secure, peaceful, stable and prosperous world requires recourse to Okonkwo and Agwu (2014)’s assertion

that education is a fertile ground on which worthwhile ventures such as the culture of lasting peace and care for our planet, earth, could be achieved. The exploration of the possibility of engendering this, in this post COVID-19 era through ICT-enriched curriculum, is the focus of this work.

ICT-Enriched Curriculum and Global Needs and Challenges in Post COVID-19 Pandemic Era

The global needs and challenges in post COVID-19 pandemic era in this work include the challenge of climate change and the need for sustainable development, the challenge of poverty and the need for equity in wealth creation and distribution and the challenge of insecurity and the need for peace. Thus, this section seeks to explore the possibility of using ICT-enriched curriculum to tackle each of the identified challenges and needs. With regard to the challenge of climate change and the need for sustainable development, it is very likely that an ICT-enriched curriculum would provide an avenue through which heightened awareness, sensitization and clear understanding of the problems that are associated with climate change could be achieved. To aim at achieving this becomes imperative in the light of the report by Mkpa (2013) that a review of the curricula of schools shows that the current curricula do not provide the knowledge and skills to students on climate change. ICT-enriched curriculum could be used to bridge and address these gaps and constraints by helping in the diversification of the current curriculum of our schools to provide adequate knowledge and skills to students on climate change issues from both qualitative and quantitative perspectives. This would enhance their relevance and capacity for innovative contributions to the ongoing discussion about the effects of climate change and the possible adaptation and mitigation strategies, especially in this post COVID-19 pandemic era. If through this the school succeeds in integrating adaptation and mitigation thinking into the students' routine plans and practices, it would have provided them with the best opportunity to be empowered to be able to sustain their livelihoods and that of the future generation.

The above potential of ICT-enriched curriculum highlights its possibility of being a panacea to the global challenge of poverty and facilitate a process that promotes equity in wealth generation and distribution. This is because, as a process which builds in the learners the required manpower skills for development, its implementation in Nigerian

secondary schools would lead to the promotion of self-reliant and stable citizenry with the ability and zeal to mobilize local and national resources for both economic and social development of the country. Hence, that level of education would then become the source through which the Nigerian societies would be transforming their young ones into assets that would not only support productivity, but also competitive advantage. It would be the realization of UNESCO-IBE (2003)'s dream of educating and training active, flexible and creative persons that would be able to keep up with the rapid changes in the world of work in the service-based economy and the knowledge society. It is an educational programme with such potential that would produce people that could navigate Nigeria in particular and the world in general out of the economic and social conundrum that they find themselves in which millions of people are coming face to face with the sordid realities of poverty on daily basis in the era of the post COVID-19 pandemic. This possibility of promoting general prosperity is a pointer to the relevance of ICT-enriched curriculum in reducing poverty and all its related vices, including insecurity. So, the challenge of insecurity and the need for peace seems to be within the areas of influence of ICT-enriched curriculum. This may be possible through its capacity to broaden the knowledge base of the students through the injection of the requisite skills, values and attitudes that would lead to a productive life and effective coping with the challenges of today's world. These include the creation in the learners the awareness of threat to their personal and neighbourhood well-being and security and the appropriate behaviour in such circumstances. So, ICT-enriched curriculum could be used to fight against insecurity and to offer protection from it. According to Obinaju, Inyon and Madu (2017), the strategies for educating children amidst insecurity challenges include a positive mindset, being security conscious and provision of security tips and gadgets. More importantly, an ICT-enriched curriculum provides opportunities for the learners to be grounded in the tech world, and as a result, enhances their employability and improves their standard of living. These develop in them positive attitudes among themselves and towards their societies. Such positive mindset may be the balm that Nigeria and the world need to wriggle themselves out of the lamentable and maddening situations of insecurity in which they found themselves in this era of uncertainty occasioned by the COVID-19 pandemic.

Conclusions and Recommendations

Based on the foregoing expositions, it could be concluded that an ICT-enriched curriculum has the potential to be used to tackle the global challenge of climate change and attend to the need for sustainable development by helping in the diversification of the curriculum to boost the secondary school students' awareness of the phenomena. Also, the ICT-enriched curriculum could be of help in tackling the global challenge of poverty and assist in ensuring equity in wealth generation and distribution by equipping the learners with marketable and profitable skills. Lastly, ICT-enriched curriculum could be used in the fight against insecurity and in the search for peace by its possibility of enabling the students to live fulfilling lives and contribute meaningfully to the growth and development of their societies in the post-pandemic era. Following these conclusions, the author makes the following recommendations:

- i. State ministries of education should intensify efforts to make the national information technology policy a reality in their schools in order to optimally harness the potentials of ICT in revamping secondary education in Nigeria to meet global needs and challenges in post-pandemic era.
- ii. Nigerian Educational Research and Development Council (NERDC) should continue to enrich the Nigeria secondary school curricula with ICTs in order to keep pace with the ever-changing global needs and challenges in the post-pandemic era.
- iii. Parents should fully support the education of their children and wards by providing them with adequate resources for learning which would make them benefit maximally from ICT-enriched curriculum in the post-pandemic era.

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