EDUCATION IN THE AGE OF UNCERTAINTY: DISRUPTIONS AND TRANSFORMATIONS

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Introduction

Education is a very important industry. It is so important that society relies on it to provide direction, knowledge, and an opportunity to explore. Education is an enlightening instrument utilized in examining experiences and social processes in society. Education does not act in isolation, particularly amid social and political complexities that characterize life and living. In order to make sense of the confounding challenges in the society, countries turn to education utilizing it as a tool for empowerment, creation of equal opportunities, sharpening of skills and realizing the true potential of individuals and the country. The Federal Republic of Nigeria (FRN, 2014) in realization of this fact, stated in the National Policy on Education that one of the goals in the philosophy of education in Nigeria is based on the fact that education maximizes the creative potentials and skills of the individual for self-fulfilment and general development of the society.

In the context of this broad objective of education, can we say with certainty that Nigeria is the right trajectory? The proper place to start this discourse is to interrogate this question. John F. Kennedy struck at the heart of the matter when in 1963 he asked three basic questions. "First, does every American child today have a fair educational opportunity? Does our system effectively educate our boys and girls to meet the needs and problems of our contemporary society?" Pointing to the future, he then asked.: "Is our educational system adequate to meet the needs of an expanding population, an expanding technology and an expanding culture?" Even in developed societies like America where these questions were posed a long time ago, the questions remain ever relevant. Paradoxically, the questions are more relevant to us in Nigeria where the economic direction is not very clear, good governance is in dire straits, security is elusive, and poverty is ravaging the population. Education should have been certain and more guaranteed in times of peace and prosperity but with the situation in our country today, how easy is it to provide answers to these urgent questions? To make matters worse, we are reminded by Katherine Elizabeth Pullerton Gerould that educational legislation (which is germane to a flourishing education system) nowadays is largely in the hands of illiterate people, and illiterate will take good care that their illiteracy is not made a reproach to them. Legislation is at the heart of governance and no matter how good policies may seem; implementation requires good legislation to back it up. The question remains whether we can rely on the lawmakers to make bold laws especially as they affect the allocation of resources to the education sector that will see a very much needed breakthrough.

First, let us examine budgetary allocations to the education sector for the past eight years and try to provide an answer to the question of whether our education system is meeting the needs of an expanding population, and expanding technology and expanding culture.
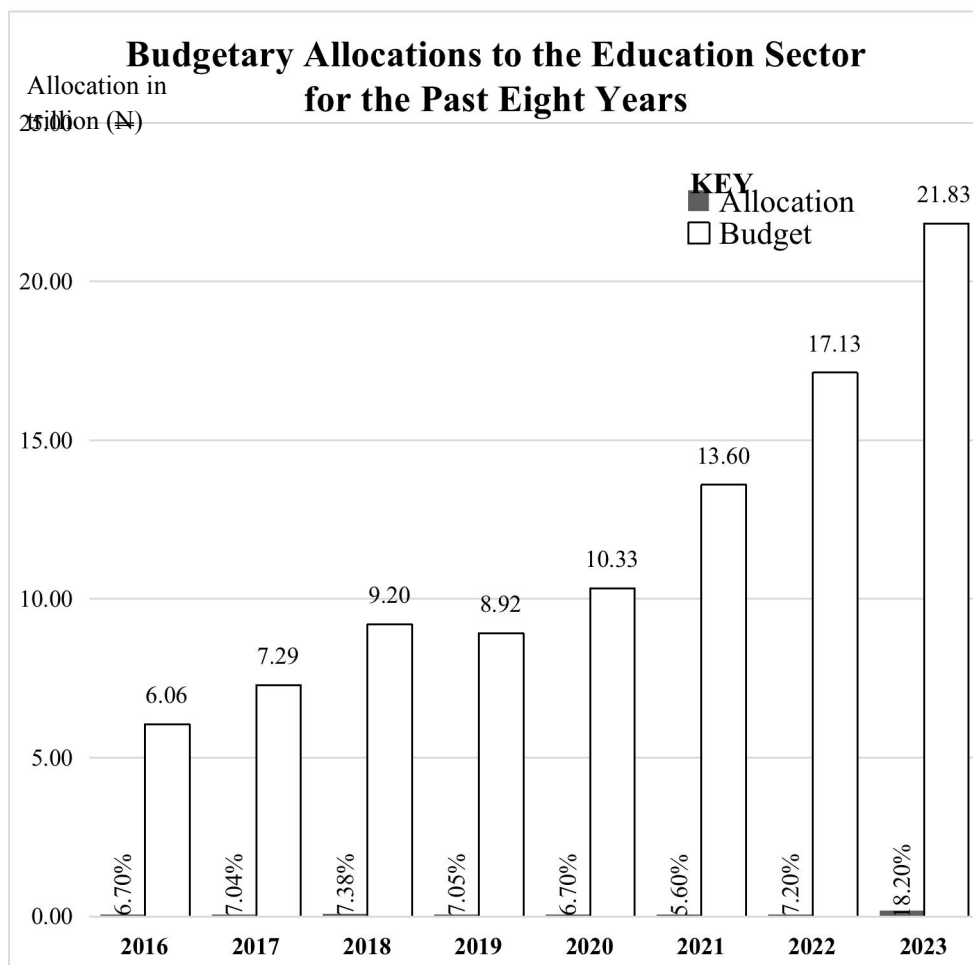
Fig. 1: Official Data from the Budget Office

According to official data obtained from the Budget Office of the federation, in 2016, 6.7% (N369.6 billion) of the total budget of N6.06 trillion was allocated to education. Education received N550 billion in 2017 which was 7.04% of a total budget of N7.29 trillion. In 2018, N605.8 billion was allocated to education representing 7.38% out of a total budget of N9.21 trillion. By 2019, N620 billion representing a slight rise of 7.05% was allocated to education from a reduced total budget of N8.92 trillion. In 2020, N671.07 billion representing 6.7% was allocated to education from a total budget of N10.33 trillion total budget. In 2021, N742.5 billion representing 5.6% of a total budget of N13.6 trillion was allocated to education. In 2022, a paltry 7.2% out of N17.13 trillion was allocated to education. This year, a budget of N1.79 trillion representing 8.2% of a substantially increased budget of N21.83 trillion was allocated to education. Unfortunately, N6.32 trillion alone was for debt servicing while N5.02 trillion was for personnel costs and N1.11 trillion for overhead costs. This pretty much explains the hollowness of the entire appropriation bill for 2023.

In as much as we cannot be advocating for the acclaimed UNESCO 26 per cent recommendation, which is mythical by the way, education requires a consistent and substantial allocation for a consistent period of time if the quality of education in Nigeria must be increased to global levels. Let us not forget that the value of naira compounds the issue because were the naira to be strong, even 2022 allocation of N1.79 trillion would have

gone a long way. After all, Namibia which has the highest allocation to education in Africa could only boast of 9.64% of its total budget and the country did tremendously well for that year. As we decry poor allocation to the education sector, we should not pretend not to know that implementation of the budget is even more scary. If we say that corruption is responsible for the real collapse of the education sector, we are simply stating the obvious and I will not concern myself with the challenges posed by corruption in our quest for development not only in the education sector but in all sectors of our economy. But suffice it to say that implementation remains the bane of Nigeria's underachievement in every sphere of her national life.

Education and Uncertainty

According to the United Nations International Children's Emergency Fund (UNICEF), one in every five of the world's out-of-school children is in Nigeria. The reason for this is not far-fetched. With humanitarian crises in the north occasioned by violent conflict and socio-economic issues, access to education has been limited. As jihadist war ravaged the north, kidnapping of school-aged children many of whom have been forced either into early marriages or forced to join terrorist gangs and used as canon fodders, education has become scarce indeed. The displaced population found themselves in displacement camps. In other parts of the country, the story is not different as kidnapping has become the order of the day. As the sit-at-home order continues in the South-east, students stay away from school for fear of attacks. In the South-south, the menace of cultists and Niger Delta militants has curtailed schooling. No part of the country is immune to school disruptions. It should be noted that it is not only violent crimes such as religious wars, kidnapping and sit-at-home that prevent school children from accessing education. A situation where schools are closed for up to eight months in the year due to strikes is another damaging sore spot and an indication that the socio-economic well-being of the people is not good. As children are trapped in conflict–impact environments, education appears to be secondary in their minds. As I wrote this address on the 22nd of September 2023, my attention was drawn to a news broadcast being reported on national TV that armed bandits invaded three female hostels at Sabin Gida area of Zamfara State and abducted an unspecified number of female students at Federal University of Gasau. How can learning be possible in circumstances like this?

In time of peace, education in Nigeria is fraught with serious challenges not to imagine the case during so much socio-economic upheavals. In peaceful times obstacles existed. These challenges range from poor governance, inadequate funding and infrastructure, poor implementation of policies, instability of school calendar, corruption and so many others. It means that the government needs to provide educational services by addressing insecurity and humanitarian crises that limit access to education whether in times of peace or in times of conflict. There is no doubt that it is more difficult to address education deficits when the socio-political and economic environment is uncertain. The socio-political and economic challenges confronting the world are enormous. Nigeria is having its share of these challenges which require vice-like grip by political leaders to institute well-thought-out policies and strategies to surmount but good governance in Nigeria is still a far cry.

It is obvious that in Nigeria, Economic direction is not clear, the security of lives and property cannot be assured, and poverty is on the rise. These realities drive home the aptness of this conference, and it is hoped that clear direction will be charted by experts on the way forward in overcoming the challenges the conference is meant to address. Whether we are talking of funding; teaching, research and community development; public private

partnership; poverty reduction and empowerment; education for sustainable development and institutional reform; Information and Communication Technology; inclusive education; teacher preparation; and entrepreneurship; all will be impacted by global transformations currently shaping not only the future of education but also that of human existence. In my mind, the sub-themes of this conference will further be be impacted by factors that drive uncertainties and there are many of them. Such factors that foster uncertainties include but are not limited to change, new technologies, changing world of work, changing business environment, change in teaching and learning, democratization of education, internationalization of education and many others. On my part, I will dedicate the rest of my discourse to change, disruptions and transformations impacting the socio-political and economic uncertainties in the world today.

Education and Change

We normally play with the phrase "change is the only thing that is constant", but hardly do we understand or try to imagine the impact of change especially in a world driven by new technologies. What is change? Whether you look at change as making something or someone different or altering, modifying, or replacing, you are right but that is a simple assumption. Change is much more than that. We know that we can make things change and we even expect change, but the way change catches us unaware is profound. Change is natural, it accelerates and as well it is exponential. The nature of things is that everything is constantly in transition making everything ephemeral as well. What we consider a big change today can, in a matter of weeks or even hours, become obsolete. So, nothing is permanent except change. Think about the Agrarian age to the industrial age, you will discover about 8000 years in between. From the industrial revolution to the discovery of the light bulb, to landing on the moon to the World Wide Web, the time taken for change to occur has diminished. This means that change can happen so suddenly that preparations for them become impossible.

The computer is responsible for the enormous changes we are witnessing. From a computer with the processing power equivalent to the brain of a mouse to a one with the processing power of a human being, another is expected to have more processing power than all human beings combined. The computer processing power is growing at an exponential rate and there are other exponential change trends. This makes the change even compounding. As Loyd (2015) observed, from time to time these trends collide and react with one another. For example, the trend called SMAC - Social, Mobile, Analytics and Cloud (when they combine can bring chain of changes so quickly that disruptions can be catastrophic). With the combination of these four trends, a world of disruption is what we now have. A world where the fundamentals of business, teaching and learening, life itself has changed dramatically and when trends combine, changes are bound to accelerate faster. Change is said to be compounding because it throws up confusion and complexities thereby disrupting the existing ecosystem.

Education and Disruptions

In first-world countries where planning is taken seriously, it may be a little easier to manage disruptions. However, in Nigeria where planning seems not a serious venture, it is difficult to imagine how to provide education amid uncertainties and disruptions being witnessed in the world today. The emergency of cell phones is an example of a major disruption. Over 222.5 million people in Africa and about 6.648 billion people worldwide,

use the mobile phone in 2022. The monumental disruption occurred which broke previous patterns bringing about major changes in people's lives. A few examples of disruptions are necessary to help guide our discourse. In the world of photography, there was a time when we required days, maybe weeks for a colour photograph to be printed. Today over 380 billion pictures are taken yearly. With a cell phone in your hand, you can take a photograph or two per minute. In about the year 2000 when digital photography was introduced, Kodac Company, the biggest and best photography company never knew that its business had changed forever. Whether Kodac is still in business, your guess is as good as mine. The life of a professional photographer has changed forever, those who want to enter the photography profession must rethink their strategies to learn and unlearn. Another common example is the typewriter. Only a few years ago, typewriters adorned the offices and students were taught with them. Today the computer has taken over. This change disrupted the norm so much that some organizations were driven out of business. We must therefore, learn how to live with disruptions.

Technology is an enabler of disruptions, and the computer is its best tool thus far. The computer with its computing powers and its availability to anyone who has a hand-held cell phone changed the way we study, work, play, communicate and it is not certain what the future will bring. However, for technology to be considered disruptive, it must modify a behaviour or habit and be available to a majority of people. In terms of the cost of using disruptive technologies, their availability to a large section of the population helps to improve their affordability. Disruptive technologies that readily come to mind today are many. When you hear about Cloud Computing, Blockchain, 3D Printing, Nanotechnology, Advance Virtual Reality, Cybersecurity, Quantum Computing, Artificial Intelligence and Machine Learning, 5G technology, etc, you are simply being told about disruptions. These technologies are already disrupting our habits, behaviours, and our general ways of spending our time. Meanwhile, it is worthy of note that while these technologies are disrupters, they are also agents of transformation and require adaptation which means that the population will continue to learn new ways of doing things and that we need to prepare for these disruptions. Since no one is certain of the dimensions of these disruptions, the ways to prepare for them will no doubt be challenging.

Another factor of educational upheaval is globalization. Globalization has engendered a seismic transformation in the educational landscape by fostering a heightened interconnectedness and interdependence among nations. This interconnectivity has underscored the imperative for a more comprehensive and globalized education system that equips individuals with cross-cultural competencies and a deep understanding of diverse perspectives. Consequently, curricula are evolving to integrate a broader array of subjects, promoting a holistic worldview and nurturing students to become global citizens capable of engaging with the multifaceted challenges and opportunities of our interconnected world.

Education and Transformations

Technologies are exponentially changing the way we learn, work, and live. Global transformation in all facets of life is multifariously affecting the educational, technological, economic, social, cultural, and political development of the human community and Nigeria is not left out. The transformation being witnessed today is all-encompassing bringing with it electronic banking, commerce, marketing, shopping, learning, teaching, voting, transfer etc. Amid these complex changes, only the paranoid may survive. With the Fourth Industrial Revolution blowing across the world, we can no longer live the way we were living before.

The way we communicate has changed and will continue to change, in form, appearance and character. The shape of work has changed and with it the economy and workplace. This Fourth Industrial Revolution, better described as the advent of Cyber-physical systems where digitalization is impacting the capabilities of humans and machines beyond expectation, has heightened uncertainties in every sphere of our lives. Not the least affected is education. With a cell phone in the hands of every student, nothing else seems to matter. The students are found glued to their cell phones 24/7 and with the speed their phones process information, students who want to learn have unlimited access to doing so. For those who do not want to learn, they have enough information to keep them off from learning forever. However, these students are digital children and are very comfortable with cell phones. As digital learners, therefore, they no longer seem to fit into an educational system designed prior to the Fourth Industrial Revolution.

Wantulak (2015) lists some reasons for frequent use to include students and teachers demand it; students are digital natives; they can learn on their own, with technology there are no limitations, and technology has the ability to enhance the relationship between teacher and student. The US Department of Education (2015) explained that technology ushers in fundamental structural changes that can be integral to achieving significant improvements in productivity because technology supports both teaching and learning, it infuses classrooms with digital learning tools, such as computers and hand-held devices; expand course offerings, experiences, and learning materials; supports learning 24 hours a day, 7 days a week; build 21st century skills; increases student engagement and motivation; and accelerates learning. In support of these benefits, Dehlstrom (2012) added that these devices allow users not only to consume but also discover, produce and share content.

As asserted by Hommel and Zuchowiez (2019), nothing has disrupted higher education more profoundly than the changing attitude and lifestyle of students. They warned that universities need to accept the harsh reality that their clients require new learning models that go beyond the use of state-of-the-art technologies as alternative vessels for delivering the same type of learning experience as before. Finally, they explained that students are increasingly seeking educational experiences where pedagogy and learning design correspond to the world they live in. Therefore, education in the period of uncertainty should be geared towards making the world the classroom of the future and technology is important in driving this force because technology is pervasive and for the students to survive in tertiary education and the business world, they must know and use technology (Umoru, 2023). Teaching needs to be transformed and this cannot be achieved without digitalization. According to Umoru (2023), digital devices promote personalization, offer direct access to everything, support the mashing of media, and are interactive and mobile. New technologies, especially digitalization, have brought Automation and Robotics, Cloud Computing, Blockchain, Artificial Intelligence (A1), and Internet of Things (IoT) which are drastically affecting businesses and classrooms. The world as we know it is exponentially changing and affecting our lives at multi-dimensional levels requiring unprecedented adjustments. For example, Artificial Intelligence has become an indispensable tool in the realm of education, offering unparalleled benefits in enhancing personalized learning, fostering critical thinking, enabling adaptive assessments, leveraging augmented and virtual reality, and automating administrative tasks (UNESCO IITE, 2020). As we progress further into the 21st century, embracing and integrating AI in education will undoubtedly be pivotal in preparing the future generation to thrive in an increasingly technology-driven world. Its potential to revolutionize

the educational landscape is immense, promising a brighter and more efficient future for teaching and learning.

"Artificial intelligence is the future, and the future is here." - **Dave Waters**

"Artificial intelligence is the next big thing, and it's going to be bigger than the internet." - **Mark Cuban**

"AI is not a futuristic technology. It is here, now, and it is changing the way we live and work." - **Fei-Fei Li**

Conclusion

The only way to tackle education in the age of uncertainty is to invest in the knowledge economy. It is no longer in doubt that the most valuable commodity today is knowledge production which has relevance and utility as its ultimate end. Professional skills and jobs that were in demand some decades ago are no longer needed and many jobs are likely to disappear by 2030. Embracing change is the only way to keep up with the future which will be characterized by uncertainties. Any society that ignores the fact that new knowledge will continuously be demanded will create a future that is a recipe for disaster. As rightly pointed out by Alvin Toffer, the illiterates of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

In other to prepare students to meet the demands of an increasingly complex changing society, not to talk of the future which experts describe as volatile, uncertain, complex, and ambiguous; institutions must enable flexible pedagogies to continuously create learning experiences that correspond to the emerging new world. Furthermore, the *a priori* justification of the school as the only destination for knowledge acquisition has become the subject of ongoing contestation in view of pervasive EdTech industries that create technology to facilitate learning. It will not be a surprise to witness, sooner than later, the collapse of university walls enabling education to be delivered to the doorstep of the learners. The big question is: How ready is Nigeria to embrace this emerging trajectory? A huge investment in education, technologies particularly in EdTech, is necessary if democratization of education is to be achieved. In addition to this, the country needs committed teachers, motivated students, appropriate teaching and learning, sufficient infrastructure, and efficient governance system to bring education to the desired level.

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