



INNOVATIVE EDUCATION IN NATIONAL DEVELOPMENT: TACKLING NIGERIAN'S ECONOMIC AND SOCIAL CHALLENGES

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Abstract

The need to tackle Nigerian's economic and social challenges requires a paradigm shift in educational innovative processes. Nigeria educational ecosystems over the years have been immured to many positive changes through inconsistent innovative policy measures, bad regulatory system and strain innovative climate among others. This study focused on innovative education in national development and how it can be used in tackling Nigerian's economic and social challenges. The paper review relevant literatures with emphasis on innovative education, innovation in educational institutions, innovation strategies, innovative challenges, innovative processes, Nigeria innovative policy and performance indicators. The paper revealed that Nigeria education Global Innovative Index is on a downward trend while our socio-economic challenges are on the increase. Besides, innovative climate and culture in our institutions of learning are highly constrained by factors like finance, technological infrastructure and resistance to change among others. This paper hereby concludes that innovative education is a necessary recipe for growth and development of any nation. Effective innovative education should be goal oriented, policy driven, with a school culture that promotes innovative climate. Besides, it must be forward looking and empowered with necessary technology and equipment coupled with training and support by stakeholders in educational development. Base on this, the paper recommends that Nigerian policy on education should be innovative driven particularly at children formative stage by including it in our curriculum and highly accentuated with good pedagogies. Besides, school management



should provide innovative culture such as, collaboration among staff and students, creativity and effective innovative measuring techniques to enhance educational innovation that will promote growth and development.

Keywords: Innovation, innovative climate, innovative culture, pedagogy, socio-economy

Introduction

Development associated with any nation can be traced to its educational prowess and innovation dynamics. There is no country that can develop beyond its innovative capacity of which educational sector is at the forefront in its optimization. At the present stage of societal development, significant changes are taking place in various spheres of human life, which significantly need educational interventions. New socio-economic conditions have given rise to many problems, such as unemployment, poverty, environmental degradation, climate change, food insecurity among others and the choice of solution is inextricably linked with theoretical and methodological approach using innovative education as a promising channel (Yuliya, 2022).

Innovation is the process of introducing new or improved products, services, processes or business models that create value for individual, organizations or society. Innovation has become a gearing mechanism in educational ecosystem that is constantly revolutionizing our modern world. Through innovation, individual, organization and society can derive growth, improvement and sustainability. According to Organization for Economic Co-Operation and Development (2023) educational sector is one of the largest public sectors that pose various opportunities for further innovation. Such opportunities include changes in curricula, new or improved pedagogies in traditional subjects, changes in how learning is assessed and new delivery methods for education, such as online learning.

Innovations that arise based on a variety of initiatives have a positive effect on the development of the society (Bondar et al., 2021). Despite innovation exists at all levels and in some specific circumstances, the awareness that a co-ordinated innovation policy for education could be beneficial is just emerging in some countries (Vincent-Lancrin et al., 2022). This has spurred the need in Nigeria to promote coordinated policy in technology and innovation by changing the nomenclature of Ministry of Science and Technology to Ministry of Science, Technology and Innovation. As in other sectors, innovations in education can drive productivity and welfare gains in society. On average, countries spend 6% of their national income on educational institutions in anticipation to promote innovation that will propel growth and development (OECD, 2023). However, despite progress in some countries, not all education systems have taken advantage of opportunities to innovate and improve learning outcomes, enhance equity and equality, improve efficiency, and adapt to societal needs (OECD, 2019). Consequently, this paper examined innovative education in national development and how it can be used to tackle Nigerian's economic and social challenges.

Concept of Innovation

Innovation has been valued as a necessary individual characteristic that has taken a center stage in driving growth and development. Taken as a concept of multidisciplinary interest, research on this phenomenon has been developed in several areas of knowledge including administration, education, economics, psychology and



sociology, among others. According to Bledow et al. (2009) cited by Fadipe (2023), innovation is the development of the product or practice of new and useful ideas to benefit individuals, teams, organizations or a broader range of society. The Organization for Economic Cooperation and Development (2016), identified four types of innovation: product innovation, process innovation, marketing innovation and organizational innovation. In essence, innovation cut across different strata of human endeavors.

Concept of Innovative Education

Innovative education is the process of improving the productivity of teachers, their efficiency in teaching and pleasure of learning for students in order to derive growth and development. It involves a change in teaching and learning techniques in terms of curriculum modification, technology inclination, and improvement in pedagogies in traditional subjects (OECD, 2023). It is an educational system that adopts digital applications for school and system management both in-class teaching, and home learning.

The goal of innovative education is to increase the ability of students to enter the workforce after graduation. These initiatives for both students and teachers are expected to improve learning outcomes and assist societies. To ensure that innovative education meets the 21st century challenges and implemented successfully, the education sector needs to re-skill and up-skill teachers, which requires continuing investments in the teaching profession. This will exposes teachers and students to a broad-based curriculum, different knowledge contents and ways of thinking.

Innovation in Academic Institution

Academic institutions play significant roles in equipping people with the skills required to innovate. Skills like design thinking,

creative thinking, critical thinking and social skills are now taking a center-stage in many institution's academic modules and curriculums. These skills are human-centered approach to innovation, focusing on creativity and experimentation while at the same time enhances collaborating with external partners, crowdsourcing, or using open-source platform to accelerate innovation.

This suggests that tertiary education institutions could enhance innovation-related skills through a variety of pedagogical models. The development of new tools to assess such skills, or at least to ensure that teachers pay explicit attention to them, is critical to ensuring that students acquire skills used in innovation (Vincent-Lancrin et al., 2019).

In academic institution adoption of new innovation must by necessity be subjected to innovation process because is not all innovations that are necessarily an improvement over existing processes, goods, or services. It is possible for an innovation to make matters worse, for instance, an innovation that successfully reduces costs could have detrimental effects on learning, or back-office innovations could increase instead of decrease the workload of educators. Thus, innovation in academic sector should be critically examined before implementation in order to meet the need of teachers and students in a positive goal dimension.

Innovative Education Approaches

There are many approaches to innovative learning that has gained attention of educationist. Such innovations include:

- a. **Technology-Enhance Learning (TEL):** Technology Enhanced Learning has become increasingly important in modern education. TEL is concerned with investigating how



technologies can be used to enhance learning and teaching-related processes, and thereby facilitate better outcomes. Thus, a purposefully used technology becomes a bridge connecting teachers and learners to deeper understanding, richer interactions, and more effective outcomes (Handley, 2022)

b. Entrepreneurship Education:

Entrepreneurship education is an important way to acquire resources, enhance innovative ability and build multi-level learning channels by integrating various knowledge and value systems. According to Chen et al.(2004) cited by Aigbupue & Akenbor (2022) innovation in entrepreneurship context is the introduction of a new combination of the essential factors of production into the production system.

c. Skill Acquisition: According to Bonilla López et al. (2019), skill acquisition is the ability to learn or acquire skills. It involves the development of a new skill, practice of a way of doing things usually gained through training or experience. According to Abiodun (2014) skills acquisition is key to reduction of high rate of poverty, unemployment and insecurity as well as low level of technological development in the society.

d. Vocational Education Training : According to UNESCO and ILO (2001), cited by Fadipe et a.(2023),

Vocational Education Training (VET) refers to “aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Education and training need to be aligned with labour market needs to ensure that relevant skills are developed and enable individuals to navigate changing labour markets (OECD, 2023). Innovations in teaching and learning technologies and pedagogical approaches can contribute to reforming and modernizing education and training systems around the world (Mbore, 2021). Thus, responsive TVET systems that adapt to the needs of the labour market also require teachers who have up-to-date knowledge and skills

Innovative Models in Education

There are various models (Table 1) in educational setting which are meant to evaluate how innovation is incubated and spread within academic institution. Such models include; Diffusion model, Technology Acceptance Model (TAM), Innovation Value Chain Model and Open Innovation model. These models have gained universal acceptance across education innovative value chains.

Table 1: Innovative Models in Education

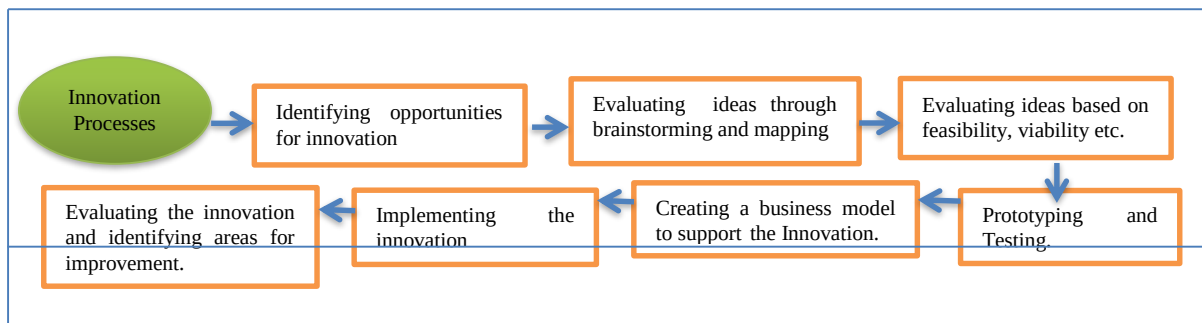
s/n	Model	Proponent	Year	Crux of the model
1	Diffusion model.	Everett Rogers	1962	This model explores how new ideas and technologies spread within academic institutions.
2	Technology Acceptance Model (TAM)	Fred Davies	1989	This examines factors that are influencing the adoption and use of new technologies in academic settings
3	Innovation Value Chain Model	Morten T. Hansen and Julian Birkinshaw	2007	Analyses of the stages involved in creating and capturing values from innovation within academic institutions.
4	Open Innovation model	Jeff Howe's	2006	Study the collaboration between academic institutions, industrial partners and other stakeholders to derive innovation.

Source: Author, 2025

Innovation Process

Innovation process is a series of steps that organization or individual follow to develop and implement new ideas, products, services or processes. Innovation does not just occur, it entails critical thinking, brainstorming and

experimentation. It is important to identify opportunity based on goals settings and area of felt need. Innovation process involves the following important stages as shown in figure 1

**Figure 1:** Innovation Processes

Innovation Policies in Education

There are four policy areas that are relevant to supporting innovation in education (Vincent-Lancrin, 2017). First, the education regulatory framework needs to be conducive to innovation. Such as, curriculum and assessment policies which have impact on the scope for innovation, this has spurred the need for most countries to integrate checks and balances into their innovations to ensure that grass-roots innovation is possible, but controlled (Kärkkäinen, 2012). Access to

finance for innovation, dissemination strategies and staff development policies are also key elements of this regulatory framework.

Secondly, policies to invest in R&D can support innovation. Given the significance of the sector, public spending on educational research is often below what is needed. In 2012, research on education was the least funded of all socio-economic objectives for which information is available (Foray and



Raffo, 2012). A few countries already have an innovation policy for education. Italy has developed digital plans for education (Avvisati et al., 2013). France has a chapter on innovation in its education law. The United States has had several programmes to support innovation in education at the federal level, following the model of the Education Innovation and Research (EIR) Program of the US Department of Education. What is still missing in countries is a holistic and explicit strategy to create an innovation-friendly ecosystem for the education sector.

Nigeria Innovation Policies and Performance Indicators

Nigeria government in its quest to promote innovation, a National Policy on Science and education was put forward in the year (2012). This policy aims to promote Science, Technology and Innovation (STI) in Nigeria with a focus on developing human capital, improving infrastructures and enhancing private sector participation. This giant stride

have birth many research and development institutions such as; National Agency for Science and Engineering Infrastructure (NASENI), a government agency responsible for promoting the development of science and engineering infrastructure in Nigeria. Federal Institute of Industrial Research, Oshodi (FIRO), a research institute that focus on promoting industrial development in Nigeria through research and innovation. In recent time, Presidential Executive Order 5 (2018) was put forward to promote local content in science and engineering. This has given rise to the establishment of innovation hubs (e.g., iDEA Hub, Lagos; nHub, Jos) coupled with National Digital Economy Policy (2020–2030) to enhance innovation via digital transformation. However, Nigeria Innovative Capacity Index (ICI) was measured and tracked using performance indicators such as; Research and Development, Expenditure, patent applications, and entrepreneurship rates.

Table 2: Nigeria Global Innovative Index (2014-2024)

Year	Total Number of Countries Measured	Nigeria GII Position
2014	143	110
2015	141	117
2016	128	114
2017	127	114
2018	126	118
2019	129	114
2020	131	117
2021	132	118
2022	132	117
2023	132	109
2024	132	108

Source: www.globalinnovationindex.org (2025)

These metrics on a Global Innovative Index (GII) scale ranked Nigeria 109th out of 132 countries in year 2023. These suggest the need for a proactive measure to scale-up at national-level initiatives and efforts to

promote innovation and entrepreneurship, addressing challenges and opportunities in areas such as policy, infrastructures, funding, and human capital development.



Benefits of Innovative Education

The benefits associated with Innovative education cannot be underscored at all strata of learning particularly at higher institutions. Around the world, it is crucial to the development of human capital where students acquire cutting-edge skills necessary to succeed in the rapidly changing globalized world. Additionally, innovative education can boost indigenous technological development and capacities in agriculture, health, security, and other areas

Challenges of Innovative Education

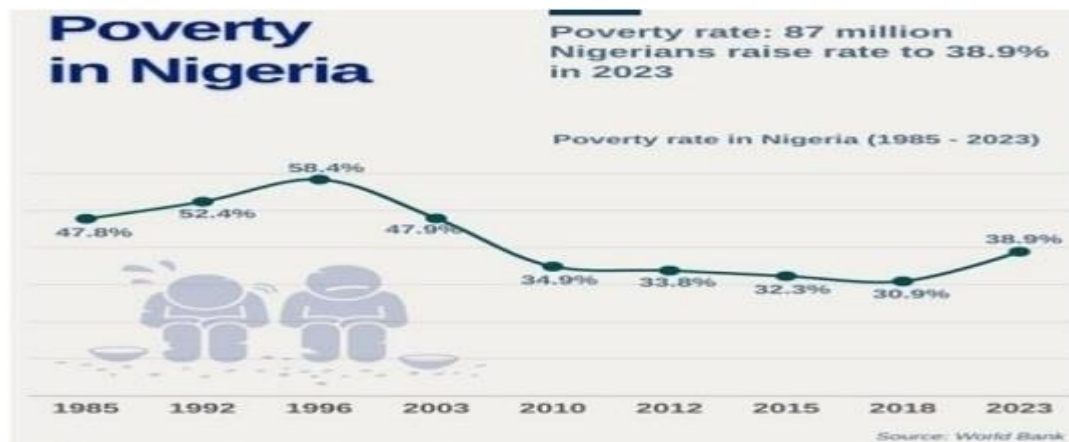
There are myriads of challenges that impede innovation in educational sector. One of the dominants factors is resistance to change. The most common way people relate to change is to resist it. It can be resisted by disagreeing with a new policy using overt or covert strategies. All forms of resistance are “counter-innovative and thwart human intentionality to create or own change. In the same vein, funding of education has become a perceptual problem in educational system. The financial problem has always being a recurring decimal in all facet of educational system. The problem of funding has reflected in dirt of infrastructural facilities in institutions of learning and in many cases have dwindled the innovative quest and attempts in education. According to Komolafe (2011) cited by Ossai and Ajudeonu (2019), many innovative ideas fail due to budgetary constraints. Similarly, infrastructural decay and inadequacy may accelerate a decline in innovation development in educational sector (Johnson et al., 2016). In the same vein cultural

resistance involves overcoming organizational or societal barriers to change. It refers to the usual attitude, belief, value and perception of people towards facts, knowledge, ideas for the improvement and creating development of existing situation (Ossai and Ajudeonu, 2019).

Besides, Tibane et al. (2024) identify the challenges teachers face in these resource-constrained environments, such as managing large class sizes with limited materials, and adapting curriculum requirements to fit the available resources can be antithetical to innovative questing in educational setting.

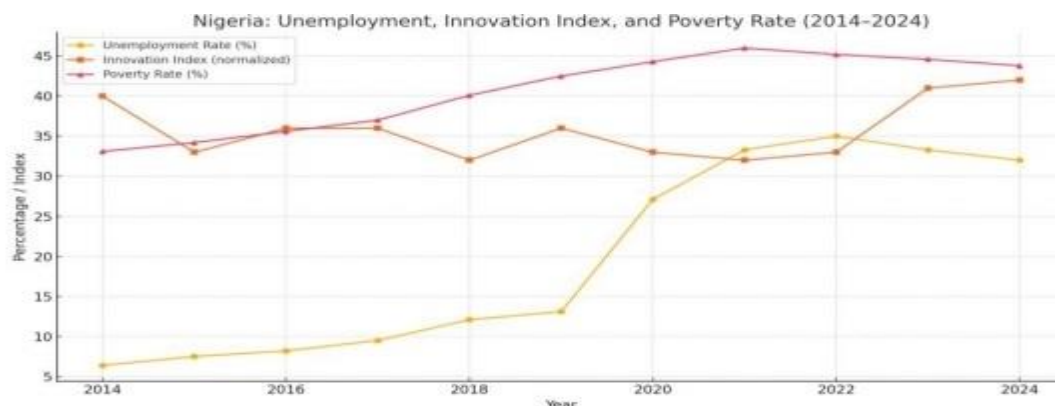
Nigeria Socio-Economic Challenges

Nigeria socio-economic challenges are multidimensional such challenges include; poverty unemployment, malnutrition, insecurity, food insecurity, environmental degradation, ‘corruption among others. In Nigeria, poverty and unemployment are steadily increasing over the years and have become a way of life for many Nigerians (Alozie, 2024). According to survey of World Bank (2024), the Nigeria poverty rate was 47% which is higher than 38.9% recorded in 2023, with an estimated 129 million Nigerians living below poverty line of \$2.15 per day. On the same trajectory, the youth unemployment rate is at higher threshold of (6.5%) with inflation rate of 24.23percent as at March 2025 (NBS, 2025). These ills have undermined the economic fortunes of many families, creating unintentional divorce, plummets disposable income and foreclosed access to basic infrastructures such as electricity, safe drinking water and improved sanitation.

**Figure 2:** Poverty in Nigeria 1985-2023**Source:** World Bank, 2024

According to Odifa (2022,) undernourishment constrains mental capacity and cognitive development in children by restraining them from reaching their full potential and incapacitating them on the long run from contributing to the productivity of the country.” Sadly enough, over 100 million Nigerians faced food insecurity as at the end of 2020. Malnutrition which manifests in some children as kwashiorkor, affects the cognitive ability of children to learn in

school; and the leading cause of death among Nigerian children under the age of five (Alozie, 2024). Besides, Food and Agricultural Organization of the United Nation (2021) reported on the “State of Food Security and Nutrition in the World”, puts the number of moderately or severely food insecure people in Nigeria at 116 million people, a 75 percent increase from 61 million people in 2016.

**Figure 3:** Nigeria Unemployment, Innovation Index and Poverty Rate (2014-2024)**Sources:** Word bank, NBS, 2024

On the security domain, Nigeria was on a higher threshold of 8.7 index point out of 10 as at 2024, while on a global scale it was at an average of 4.87 (Fund for Peace, 2024) cited by The Global Economy (2024). This has been a deterrent to foreign investors thereby creating a bottleneck to our economic growth and development.

Environmental degradation issues and other farm-related shocks like pest-infestation, crop failure, crop theft, among others are critical to agricultural value chain, influence food availability and security within the country (Olurinola & Osabuohien, 2021). Studies have shown that 90.0 per cent of



Nigeria's food is being produced by small-scale farmers with less than two hectares of land under cultivation (Edafe, Osabuohien & Osabohien, 2021). These are non-sustainable agricultural practices that need technology and innovative approach. It is imperative for small farm holders to use sustainable agricultural practices that safeguard land, soil, water, or precision farming techniques that amenable to natural calamities, to boost production (Edafe et al., 2021).

The Role of Innovative Education in Addressing Nigeria Socio-Economic Challenges

The challenge for education in this millennium is the need for creation of innovative climate at all sphere of academic institutions using adaptable approach, that will enhances people's lives within the school and their future employment in order to drive growth and development. The success of any nation cannot be divorce from its innovative capacity. Consequently, growth and development anchored by innovative education should be a catalyst for food security, poverty reduction, employment generation, reduction in environmental degradation, reduction in malnutrition and maternal mortality rate among others.

Conclusion

The need to promote innovative education in Nigeria is no other time than now. Innovative education is a necessary recipe for growth and development of any nation. There is no country that can grow beyond its level of innovation and innovative capacity. However, innovation is dynamic and it changes with time. Effective innovative education should be goal oriented, policy driven, with a school culture that promote innovative climate. It must be forward looking and empowered with necessary technology and equipment coupled with training and support by stakeholders in educational development. Thus, the

multiplier effects of good innovative education if adequately and effectively embraced will leverage our innovative capacity both in education, private and public sector thereby addressing our socio-economic challenges.

Recommendations

The following recommendations are hereby advanced for innovative education to thrive in our institution of learning.

1. Nigerian policy on education should be innovative driven particularly at children formative stage by including it in our curriculum and highly accentuated with good pedagogies.
2. School management should provide a conducive innovative culture such as, collaboration among staff and students, creativity, communication among others to enhance innovation.
3. Good and conducive innovative climate should be enabled by provision of adequate funding and budgetary allocation to research and development
4. School management should endeavor to carry out periodic evaluation of their innovation and innovative capacity to enhance feedback using metrics like Research and Development, patient right applications, entrepreneurial inclinations, vocational and skills acquisition coupled with student's and teacher's longitudinal innovative information.
5. Adequate technology should be deployed to educational institutions by government and other stakeholders in education to promote innovation.

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