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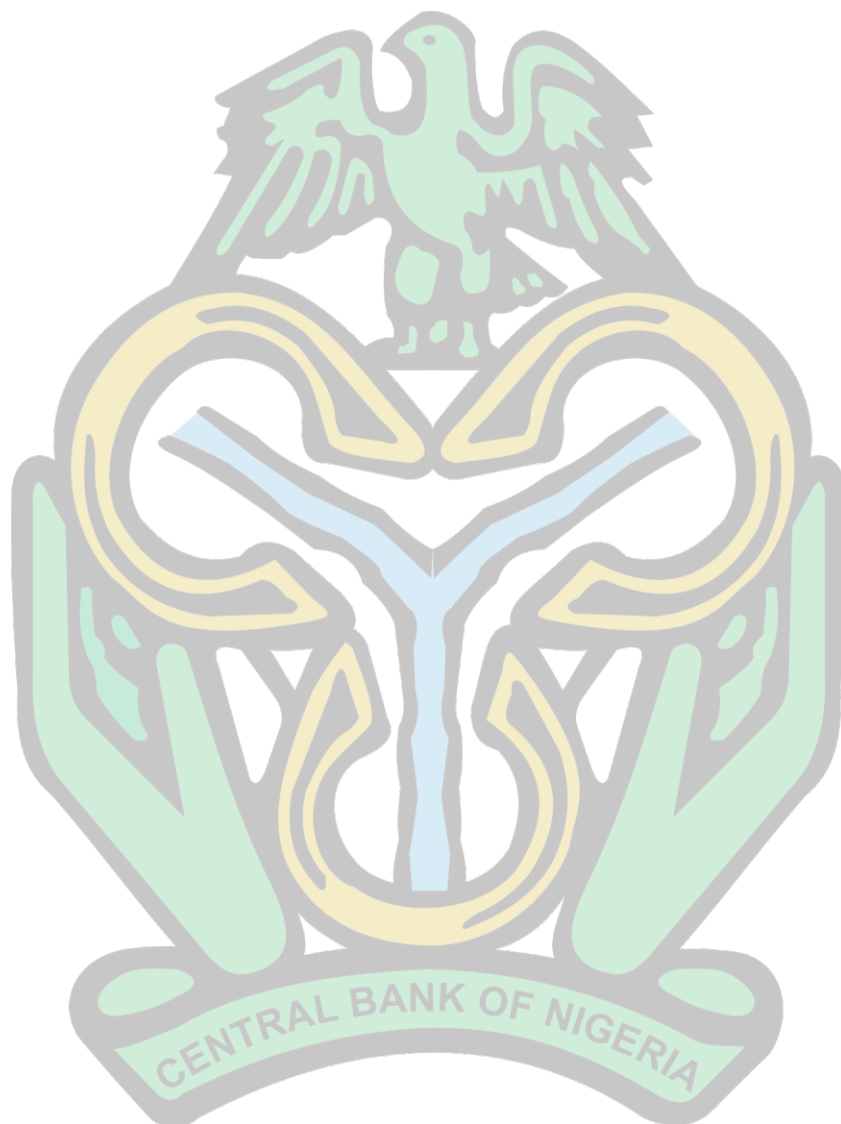


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Education, Inclusive Growth And Development In Nigeria: Empirical Examination



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Abstract

Fundamental changes in the intellectual and social stance of any society have always been preceded by educational renaissance. This paper investigates the role of education in achieving and sustaining economic development in Nigeria. Abstracting from the theory, the paper examines education in Nigeria, its financing, including comparative analysis with selected African countries and its connection with economic development. The ARDL model was adopted to examine both the short run and long run relationships between education and development proxied by HDI and education and economic growth within the context of inclusive growth model.

Evidence from the estimated long run ARDL model indicated that Secondary school enrolment (SSE) is positively correlated to economic development (proxied by HDI). The results further suggest a direct relationship between GDP per capita (GDPPC) and economic development. The coefficient of HDI indicates that Past economic development enhances current economic development in the short run. Evidence from the estimated error correction model indicates that School enrolment has a positive short run effect on economic growth in Nigeria. The growth rate of population is estimated to improve economic growth with lags. Given the established relationship between education and economic growth and by extension development, the paper made recommendations on admission process, teacher recruitment process, remuneration, funding, discontinuation of the quota system as well as abrogation of some institutions created in the educational sector including JAMB and the Education TED fund.

Keywords: Education, Economic Development, Inclusive Growth

JEL Classification: I20, N10, P17,020

Introduction

Fundamental changes in the intellectual and social outlook of any society have always been preceded by educational renaissance. Education for Sustainable Development (ESD) is commonly understood as education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all (UNESCO, 2014). Its aim is to empower and equip current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development.

The most productive investment any country can make towards the development of the economy is in education. Education is one of the key pathways through which sustainable development could be secured and maintained. The launch of the United Nations (UN) Decade of Education for Sustainable Development (2005-2014) activated a global initiative to reorient the education system to address the challenges of sustainable development (UNESCO, 2018). Investment in education has been identified as a critical enabler for development from various studies in both the advanced and developing countries. For instance, Kalu (2001) argued that the capital stock of a country should be broadly defined to include the body of knowledge possessed by the population and the capacity of the population to use that body of knowledge effectively.

Economic Growth is the increase in the real output of the country in a particular span of time. Whereas, Economic Development is the increase in the level of production in an economy along the improvement of living standards and the advancement of technology. In essence economic development has to do with how the growth is distributed to enhance the standard of living of the citizenry.

Education facilitate the creation of a more productive labour force, and equips the labour force with knowledge and skills. Also, it produces a body of sophisticated leaders in both the private and public sectors of the economy to drive the economy in the desired direction. Education is key to the development of people's ability to manage and induce change required to confront the task of making choices and of broadening the range of choices.

Development entails a free release of the energy of a people. Education, especially qualitative education, has been identified as the only vehicle that can facilitate the emergence of a political structure that will produce the right kind of leaders. For a country to

develop, education (human capital) is needed in addition to investment in physical infrastructure. Boyi (2013), rightly noted that Education shall continue to be highly rated in all countries' development plans because education is the most important instrument for change.

In Nigeria the broad educational objectives, include: the inculcation of national consciousness and unity as well as the right type of values and attitudes for the survival of the individual in Nigerian society; training of the mind in understanding the world around and the acquisition of appropriate skills, abilities, competences for contributing to the general development of society.

Similarly, Umo (2012) contended that one must remain a life-long student or learner. The unique property of the educational production function is that it is an input not only for the production of other items, but also in the production of education itself. Kenneth Arrow (1962), averred that knowledge cannot be absorbed unless some knowledge is already possessed.

The initial possession of knowledge is therefore a prerequisite for gaining ability to learn further. In modern pedagogics, a teacher is expected to impart to his/her students the ability in 'learning how to learn'. Thus, educational enterprise is adjudged successful if its products acquire the ability for self-learning or self-instruction. It is the only attribute that would enable one use education to unlock the inscrutabilities of his/her environment.

Education is one of the sustainable development goals (SDGs). Apart from being one of the sustainable development goals itself, education has a transformative characteristic that, if delivered properly, can meaningfully facilitate economic development, enhance social inclusion, foster environmental sustainability and improve governance. Undoubtedly, quality education is what is needed to achieve sustainable development.

The transmission mechanism by which education exert on development include its empowerment of those educated for employment, creativity, lifelong learning and economy's competitiveness.

However, the Nigerian education system has not been able to play this catalytic development role. Umo (2012) attributed the failure of the Nigerian education system to funding deficit in the educational sector, leading to deterioration in quality, uncontrolled growth in educational institutions, failure to concoct a match between labour needs and the educational curricula, inadequate research funding, etc.

The objective of this paper is multifaceted. The paper examines education, financing, and its connection with economic development in Nigeria. The remaining sections of the paper is organized into six parts. Part II dwells on theoretic and conceptual issues regarding education, inclusive growth and development. Part III contains comparative analysis of education investment in selected African countries. Part IV reviews the empirical literature on education, economic growth, and development. Methodological issues regarding empirical relationship between education and some critical development variables, including empirical findings are contain in Part V. Part VI dwells on recommendations and some concluding remarks.

PART II. THEORETIC AND CONCEPTUAL FRAMEWORK

In the traditional neo-classical growth model advanced by Robert Solow and Trevor Swan in the 1950s, economy output is a function of larger inputs of capital and labor (all physical inputs). In the neo-classical growth models, variables, including human health, skills, knowledge, were excluded from the growth equation of an economy. This was essentially classified as the Exogenous growth theory. This theory was called to question a few decades after as it failed to explain why countries with little capital and labor grew faster than countries with abundance of these resources.

This gap in the explanation of the growth process resulted in the emergence of the endogenous growth theory in the 1980s pioneered by Romer (1986). They argued that economic growth and development in most fast-developing economies, particularly, the East Asian developing countries, where the economies grew consistently for over three decades, demonstrated the inefficacy of the exogenous growth theory. They averred that, it was not only technology, that was the main driving force for maintaining such high growth performance in these economies, but that there were clearly other factors outside the remit of the neoclassical growth model.

Romer (1986) broadened the concept of capital to include human capital. He argues that the law of diminishing returns to scale phenomenon might not hold true as demonstrated in the case for the East Asian economies. The theory holds that if a firm or an economy that invests in capital (physical) also employs educated and skilled workers who are also healthy, then the labor will be productive, as the labour force will utilize capital and technology more effectively. This will bring about "neutral" shift in the production function and, thus, there will be increasing rather than decreasing returns to investments. This means that technology and human capital are both endogenous to the growth process.

Other scholars including, Lucas (1988), Marchand, Michel, Paddison, and Pestieau (2003) have argued that the basic assumption of the endogenous growth theory is that policy measures can have an impact on the long-run growth of an economy. They contended that investment (subsidies) on education or research and development increase the growth rate by increasing the incentive to innovate.

Lucas (1988) acknowledged two sources of economic growth to include human capital accumulation due to education investments and technological progress due to learning-by-doing externalities. In other words, education and learning-by-doing improve the knowledge and skills of labor in the production sector.

The endogenous theorists assumed that research and development (R&D) was the key to the growth and development of an economy. Research and development generate new ideas or new technologies. Whenever there is technological change in a given productive process, those with education or greater skills are more likely to adopt the new technology faster (Eicher and Penalosa, 1999).

Aharonovitz (2007) observed that as managers (or employees) are trained, they will become heads of production units and train more managers who will, in turn, head other production units or establish new firms and further train more managers. As the process continues growth and development will be sustained. This will reduce poverty and improve income per capita or standard of living in the society.

II.1 Education

The term education has been defined and abstracted in a number of ways; Kalu (2001) understood it as the training and enlightenment of people in order to increase their knowledge of the world in which they live. Such knowledge is required for the improvement of living conditions in the society. In the same light, Ilechukwu, Njoku and Ugwuozor (2014) perceived education as the development of the cognitive, affective and psychomotor domain and abilities of an individual for optimal function and performance in the society. The individual has to be helped to maximize his mental, emotional and psychological abilities which will be beneficial to him and the society in which he belongs.

Ekpo (2017) asserted that education is the training of human being to become beneficial to the society at large and not necessarily for self – fish reasons. UNESCO (2000), submitted that “education is the total process of developing human ability and behaviours”. It is an organized and sustained instruction intended to communicate a combination

of knowledge, skills and understanding value for all activities of life.

Specifically, education refers to the process of knowledge acquisition at all levels (primary, secondary and tertiary) whether formal or informal. *Education entails a life-long formal and informal process of equipping an individual to be fully aware of his environment and to exploit, manage and dominate same for the benefit of himself and the society at large.* It is any process by which an individual gains knowledge, insight, or develops aptitudes. It is a process to achieve acculturation through which the individual is helped to attain the development of his potentialities.

Anyanwu (1998) opined that It is the cultivation of “the whole person” including intellectual, affective, character and psychological development. Education is the process of teaching or learning, especially in a school or college, or the knowledge acquire therefrom. It is the process of facilitating learning or the acquisition of knowledge, skill, values, beliefs and habits. Education is a gradual process which brings positive change in human life and behavior. It can also be defined as a process of acquiring knowledge through study or impacting the knowledge by way of instructions.

Barros and Katz (1992) identified three channels through which education influences economic growth: education has a direct effect on growth even after controlling for measures of a nation's fertility rate and rate of investment in physical capital. This direct effect is likely to reflect a positive effect of a more educated labour force on a nation's ability to adopt and develop new technologies-increased productivity; increased educational attainment is associated with increased physical capital investment. This factor will be of greater importance in the future because the skills of a nation's labour force are likely to be crucial in attracting internationally mobile capital in an increasingly globalized economy; A more educated population tends to have a lower fertility rate and plausibly more intensive parental investments in each child (Anyanwu, 1998).

Umo (2011) stated that development heights attained by contemporary industrialized nations have largely been explained by the impressive height of their educational attainment, hence education has been widely acknowledged as a development catalyst. The education sector from a broad perspective contains the cognitive skills, knowledge, technology, social, political, networking skills, and migration, which forms the basis for economic growth. When education is offered on a broad front, it serves as the most effective instrument of inclusive growth. Education plays a key role in reducing

unemployment, hence inequality. Hardly is there any of our assets with a powerful distributive attribute. Resource-based growths have been showing serious limitations with the explosive progress in service and technology.

He identified three key developmental variables that are affected by education as follows:

Education and poverty: The first step in empowering any individual is to provide an opportunity to be educated. It will equip him with the skills to find livelihood. Quality education offers the recipient the ability to address and overcome absolute poverty and relative poverty.

Education and Employment: Education can aid employment in several ways. Formal education is needed for paid employment. Cognitive attributes and certificates that any employer requires are gained through formal education. Also, quality education is needed to master the skill for self-employment. Education disciplines the mind, directs it to productive ends and enhances trainability. It develops one's critical faculties and creativity.

It is therefore indispensable for invention, innovation, discoveries and extending the frontiers of knowledge. **Education and Global Competitiveness:** The international competitiveness of any economy critically depends on education, technology and innovation system. Countries with high level of these have been able to register high level of global competitiveness. These countries have also made substantial progress in reducing poverty.

They include China, India, South Korea and Malaysia. The case is not so in most African countries because of low quality of education, low level of ICT skills and innovativeness. He asserted that education can best be conceptualized as a generalized human capital. This allows linkages of education with technological advancement and the innovation system both of which are critical to modern-day development. Education can take place in formal or informal settings and any experience that has a formative effect on the way one thinks, feels, or acts may be considered educational. Its methods include: storytelling, discussion, teaching, training and directed research.

There are three broad categories of education: formal education; informal education, and non-formal education.

Formal Education is generally structured into such stages as pre-school, nursery, primary school, secondary school, technical/vocational college, polytechnics, university, or apprenticeship. Formal

Education usually takes place in the premises or school, where a person may learn basic, academic, or trade skills.

Children often attend a nursery or kindergarten but formal education begins in elementary school and continues through secondary school. Post-secondary education (or higher education) is usually at the college or university which may grant an academic degree/certificate. Formal education is structured hierarchically, it is planned and deliberate. Scheduled fees are charged, it has chronological grading system, it has a syllabus and it is subject-oriented. The syllabus has to be covered within specific time period.

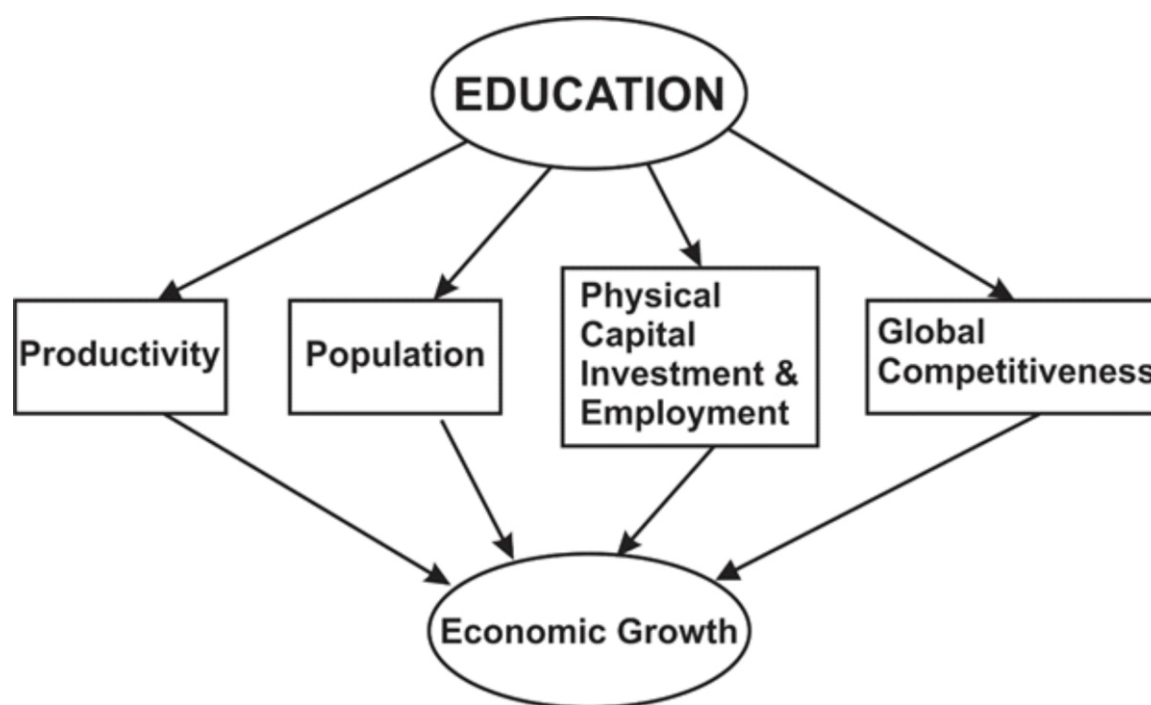
Informal Education: does not involve studying in a school or the use of any particular learning method. It is not impacted by an institution such as school or college and it is not delivered according to any fixed time table or set curriculum. Informal education is without walls, has no definite syllabus, and no fees required, no certificates/degrees awarded.

It could be accessed through any source, including media, life experiences, friends, and family. It is pertinent to note that while informal learning often takes place outside educational establishments, and does not follow a precise curriculum, it can also occur within educational settings and even during formal learning.

Non-Formal Education includes adult basic education, adult literacy education or school equivalency preparation. It is practical and has no age limit. In non-formal education, someone (who is not in school) can learn literacy and other basic skills or job skills. It is imparted intentionally and methodically. It is programmed to serve the need of the identified group. It allows for flexibility in the design of the curriculum and the structure of appraisal.

Other forms of education include Alternative education, developed in part as a reaction to perceived limits and flaws of the traditional education. It includes self-learning, alternative schools (e.g. Montessori schools, Friends schools, Sands school, Summer school, Walden's path, open classroom schools) and home school.

FIG 1. Channels Through Which Education Influences Economic Growth



II.2 INCLUSIVE GROWTH

Broadly, inclusive growth implies economic growth that creates employment and aids in reducing poverty. It relates to having access to critical services in health and education by the poor. It is also designated as pro-poor growth. It is an impartial allocation of resources such that the benefits accrued to every section of the society. For growth to be sustained and effective in reducing poverty, it has to be inclusive (Berge and Ostry, 2011; and Kraay 2004).

Ali and Son (2007) defined inclusive growth as the growth process that increases the social opportunity function which depends on the average opportunity available to the population and how these opportunities are shared among the population. It is the growth that allows individuals or groups in the society to partake in the growth process regardless of their circumstance.

Ranieri and Ramos (2013) stated that inclusive growth is both an outcome and a process. On one hand, it ensures that everyone can participate in the growth process, both in terms of decision making for organizing the growth progression as well as in participating in the growth itself. On the other hand, inclusive growth makes sure that everyone shares equitably in the benefits of growth.

Anyanwu (2013), identified the three pillars of inclusive

growth to contain social protection and promotion; productive inclusion and generation of opportunities; as well as territorial development and systemic competitiveness.

Several authors including Ali and Son (2007), have sketched three key measures that play critical role in achieving inclusive growth to include: *Creating employment opportunities and promoting higher productivity.*

Achieving inclusive growth requires both the creation of full employment and productive employment, distinguishing between the creation of low-quality jobs and decent-quality jobs. Increasing productivity and employment for long run sustainable growth requires a matching strategy of investing in dynamically growing sectors while at the same time building capacity in sectors where the majority of labour is employed.

Investing only in the dynamic sectors may suffice to accelerate growth, but may not be inclusive, particularly the poor mainly because the fastest growing sectors may often not be where the majority of the vulnerable or poor are employed and may require skills and training people are unlikely to possess.

Development in Human Capabilities growth provides the resources to enhance sustained improvements in human development and improvements in human

development raise the capacities of economic agents who make the critical contributions to economic growth. Human capabilities can be developed through adequate investment in basic social services of education and health. The concept of inclusive growth does not support postponing improvements in human development till economic resources expansion makes it affordable, as postponement may fail to sustain growth itself.

Social Safety Nets and Targeted Interventions to help those who are vulnerable and/suffer from extreme deprivation. In all nations, market failures are common. When market fails, the outcomes will undermine inclusive growth in the sense that market failures prevent the poor from participating in the economy. Social safety net programmes and targeted interventions of those who suffer extreme deprivation are vital for achieving inclusive growth. There are several instruments for protecting individuals from acute deprivation or inadvertent decline in income.

Targeted assistance is essential to reach those who cannot access market opportunities because of lack assets including, knowledge and skills, capital, land, or certain basic needs.

The justification for targeting is that the social returns for a given level of transfer are higher for individuals or households at the lower end of the income spectrum than at the upper bracket. To take full advantage of the welfare effect of a transfer programme, the appropriate target would be the population segment deemed poor according to known criteria. Hence the capacity to measure poverty and identify the poor is indispensable for designing targeted transfer programme.

II.3 Sustainable Development

The idea of sustainable development seeks to combine environmental concerns with social and economic development. It was first mooted in 1987 by the World Commission on Environment and Development, directed by the United Nations General Assembly to recommend long-term environmental strategies for achieving sustainable development by the year 2000 and beyond.

Sustainable development is, an all-encompassing goal of balancing the improvement in the well-being of current generation without jeopardizing the well-being of the future generation.

Brundtland Commission, (1987) defined sustainable Development as the development that meets the needs of the present generation without

compromising the ability of the future generations to meet their own needs.

Age (2005) identified some objectives which sustainable national development is expected to realize to include: increase capital income and employment, promoting human welfare satisfying basic needs; as well as protecting the environment. Bearing in mind the path of future generation, achieving equity between rich and poor and participation on a broad basis in development and decision making is important.

Currently, education that will lead to sustainable development is at the core of the 2030 Agenda for Sustainable Development and its seventeen (17) Sustainable Development Goals (SDGs) (United Nations, 2015).

The SDG framework focuses on crucial systemic barriers to sustainable development including, inequality, unsustainable consumption patterns, weak institutional capacity, and environmental degradation that were not prominent in the MDG. In all the Official Schema for Sustainable Development as adopted in 2015 adumbrated 17 Sustainable Development Goals and its associated 169 targets (see United Nation, 2015).

It is clear that education is the only all-embracing instrument that can support sustainable development process.

This is because education obviously covers content of all sustainable development goals (SDGs) and provides skills and competencies, necessary to deal with the challenges of a sustainable future.

Hence, there is need for proper planning to ensure that education for sustainable development aids all individuals to fully develop the knowledge, perspectives, values and skills necessary to take part in decisions to improve the quality of life on terms which are most relevant to daily lives (Mohammed, 2016).

Furthermore, education is a lifelong process that leads to an informed and involved citizenry having the creative problem-solving skills, scientific and social literacy, and commitment to engage in responsible individual and co-operative actions. Put differently, education enables individuals to develop the knowledge, values, and skills to participate in the decisions regarding the techniques, that will improve the quality of life today without jeopardizing the planet for the future generation. The role of education in the attainment of the SDG are captured succinctly in ICSU and ISSC (2015)

PART III EDUCATIONAL INVESTMENT IN NIGERIA: PAN CONTINENTAL COMPARATIVE ANALYSIS

The success of any education system pivots on proper planning, efficient administration and adequate funding (Gbosi, 2003). Several government agencies are involved in educational planning in Nigeria. These include: The National Council on Education (NCE), the Federal Ministry of Education, States Ministries of Education and Local Governments.

The National Council on Education comprises the Minister of Education and State Commissioners for Education as well as the Joint Consultative Committee on Education (JCCE).

The latter is made up of educational officials, and other experts; they also participate in the formulation of educational policy. The objectives of the planning, administration, inspectors, supervisory and financial services in education include to; ensure adequate and effective planning of all educational services; provide efficient administrative and management control for the maintenance and improvement of the system; and provide adequate and balanced financial support for all educational services.

The Federal Ministry of Education is responsible for various aspects of educational planning in Nigeria. Some of the major areas include establishing a National Policy on Education, setting and maintaining minimum standards, coordinating educational policies in Nigeria and coordinating international co-operation in education.

Another key organ involved in educational planning is the state ministry of education. Some of the functions of states ministries of education are planning, research, and development of education, provision of broad educational services and provision of appropriate education laws and ensuring their enforcement.

States ministries of education also make policy and have control over primary, secondary education and tertiary institutions owned by the states in accordance with the requirement of the National Policy on Education.

Local governments deal with people at the grassroots through their responsibility for the financing and management of primary education within their local government area. Some of the functions of the Local Educational Authorities include the payment of primary school teachers' salaries and allowances, the re-training of teachers and the payment of pensions and gratuities (Gbosi, 2003).

The development experience of the Asian Tigers signed post the critical role of education in the

acceleration of economy and development. However, what could be gleaned from the data on the enrollment at the various levels of education in Nigeria is not a success story. Nigeria is far from realizing the import of education.

The primary school gross enrolment ratio shows decline from 96.06 in 2008 to 93.27 in 2009. In 2018, the ratio was 84.70.

The trend of the secondary school enrolment ratio is not significantly different from this. For a country such as Nigeria that has been experiencing consistent increase in population, one would have expected consistent increase in enrolment ratio, but the reverse is the case.

The implication is that more and more children are out of school, thus missing out on the economic benefits of education. These are partly the reasons why supposed the economic growth recorded in Nigeria in the past years have neither been inclusive nor translated to development.

One of the major errors various governments especially in developing countries, including Nigeria make is to categorize educational funding as expenditure. No. Education must be seen as investment in the most critical resource that has the capacity to create economic growth and sustain development.

In Nigeria, Government recurrent expenditure on education as a ratio of the GDP, total recurrent expenditure and the total government expenditure have been grossly inadequate. As a ratio of GDP, the percentage of recurrent expenditure in Nigeria has been consistently less than 0.9% from 1991 to 2017. Rather than increasing with population growth, it declined from 0.82% in 1999 to 0.35% in 2017. In the same vain, the percentage channeled towards recurrent education expenditure has consistently been below 9.0% from 1991 to 2017.

Table 1.: Education Expenditure as % of GDP, Total Recurrent Expenditure and Total

Year	Recurrent on education as % of GDP	Recurrent expenditure on education as % of total recurrent expenditure	Recurrent expenditure on education as a % of total expenditure
1991	0.211395	3.294979	1.89246
1992	0.031875	0.54686	0.3125
1993	0.705283	6.494552	4.643623
1994	0.41865	8.202734	4.586985
1995	0.336764	7.63927	3.919283
1996	0.304303	9.252555	3.410237
1997	0.36117	9.365541	3.467844
1998	0.296144	7.630545	2.789924
1999	0.821689	9.698439	4.61716
2000	0.840307	12.55633	8.267598
2001	0.490279	6.884171	3.917485
2002	0.710627	11.55712	7.9092711
2003	0.487011	6.581327	5.283893
2004	0.441826	7.410671	5.366008
2005	0.371801	6.766365	4.544280
2006	0.415247	9.224926	6.141383
2007	0.456973	9.487374	6.152026
2008	0.418766	7.744549	5.05983
2009	0.309627	6.4437	3.971051
2010	0.31275	5.493057	4.071921
2011	0.533182	10.13121	7.126394
2012	0.485819	10.47769	7.565048
2013	0.487461	10.58318	7.529333
2014	0.386047	10.03093	7.493368
2015	0.345414	8.48628	6.518323
2016	0.334301	8.155554	5.791184
2017	0.35525	8.451063	6.256446

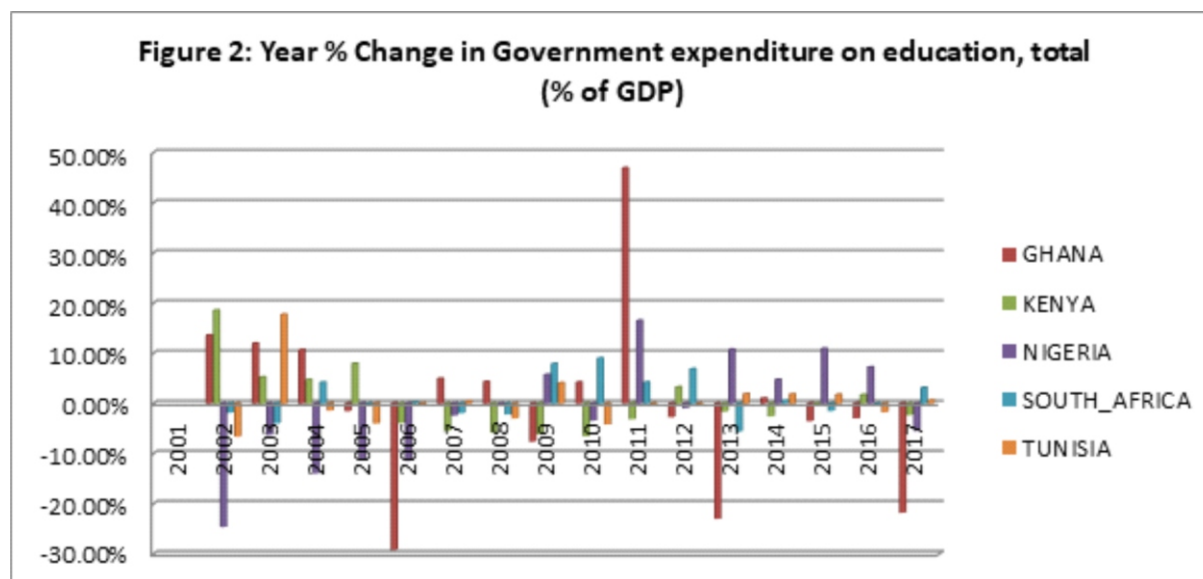
Source: CBN Statistical Bulletin 2017 and 2018.

To benchmark Nigeria's Educational investment with the framework of Africa Continent, it is useful to attempt a continental comparative analysis of the educational investment over the past 17 years.

For this purpose, five countries including Nigeria were selected. These countries were: Ghana, Kenya, Nigeria, Tunisia, and South Africa.

The first indicator to be considered is the education expenditure as a ratio of Gross Domestic Product (GDP).

This is presented in Table 2. **Ghana** invested on the average 6.18 per cent of its GDP on education between 2001 and 2017, with highest ratio of 8.14 per cent in 2011 and the lowest of 4.51 per cent in 2017.



In the review period (2001 -2017), **Kenya** education investment/GDP ratio ranged between 7.34 per cent in 2005 (highest) and 5.21 percent in 2001 (lowest). The ratio was consistently over 5.0 per cent in all the years. On the average the country invested 5.93 per cent of her GDP on education over the period.

Nigeria education investment/GDP ratio was consistently below 3.0 per cent over the period (2001-2017), with the exception of 2001, when a ratio of 3.20 per cent was achieved. The ratio ranged between 3.20 per cent in 2001 (highest) and 1.48 per cent in 2008. The average ratio for the country during the studied period was 1.97 per cent.

For **South Africa**, the ratio was consistently above 5.0

per cent in all the years under review with the exception of 2003, 2007, and 2008. The highest ratio of 6.37 per cent was achieved in 2012, while the lowest ratio of 4.86 per cent was recorded in 2003. The average investment in education as a ratio of GDP over the period 2001 to 2017 stood at 5.15 per cent.

Tunisia education investment-GDP ratio was consistently above 6.0 per cent, between 2001 and 2017, with the exception of 2002, when 5.79 per cent was recorded.

The highest ratio of 6.82 per cent was achieved in 2003. On the average, the education-GDP ratio for Tunisia from 2001 to 2017 was 6.41 per cent.

Table 2: GOVERNMENT EXPENDITURE ON EDUCATION, TOTAL (% OF GDP)

Year	GHANA	KENYA	NIGERIA	SOUTH AFRICA	TUNISIA
2001	5.35	5.21	3.20	5.15	6.20
2002	6.08	6.17	2.41	5.07	5.79
2003	6.81	6.49	2.26	4.86	6.82
2004	7.54	6.79	1.94	5.07	6.72
2005	7.42	7.34	1.72	5.06	6.45
2006	5.26	7.05	1.53	5.07	6.44
2007	5.52	6.66	1.49	4.97	6.47
2008	5.76	6.28	1.48	4.87	6.27
2009	5.32	5.89	1.57	5.25	6.53
2010	5.54	5.51	1.51	5.72	6.25
2011	8.14	5.34	1.76	5.96	6.25
2012	7.92	5.51	1.75	6.37	6.25
2013	6.10	5.42	1.94	6.01	6.37
2014	6.16	5.28	2.03	6.05	6.48
2015	5.94	5.27	2.25	5.97	6.60
2016	5.77	5.36	2.41	5.94	6.48
2017	4.51	5.24	2.28	6.13	6.52

Source: Computed by the Author from WDI (2018)

In comparable term, this key indicator showed that **Nigeria's highest ratio of 3.20 per cent was below the lowest ratio of all the countries studied.**

Nigeria's highest ratio was 0.95 percentage points lower than the bottommost ratio of Ghana, 2.01 percentage points than the lowest ratio of Kenya, 1.66 percentage points below the lowest ratio of South Africa and 2.59 percentage points lower than the lowest ratio of Tunisia.

Additionally, the data indicate that on the average, education investment as a ratio of GDP for Ghana was at least 3.14 times higher than Nigeria's ratio from

2001 to 2017. Comparable data with Kenya was 3.01 times, South Africa, 2.61 times, and Tunisia, 3.25 times.

The second indicator considered is the year change in government investment on education as a ratio of total expenditure. This is shown in Table 3.

Table 3: Year % Change in Government Expenditure on Education as a ratio of

Year	GHANA	KENYA	NIGERIA	TUNISIA	SOUTH AFRICA
2001					
2002	14.06	14.43	5.00	-7.17	-1.84
2003	12.32	-2.53	-8.64	21.00	-2.51
2004	10.97	6.76	-3.71	0.54	1.75
2005	4.70	3.00	-10.76	-4.09	-0.05
2006	3.12	-8.69	7.19	0.62	-9.64
2007	-7.64	-4.51	-11.16	-1.61	0.12
2008	7.71	-4.72	-10.69	-4.43	-0.67
2009	-6.42	-4.96	12.20	0.01	2.23
2010	-8.00	-5.22	-1.96	-1.64	-1.43
2011	48.02	-6.34	19.60	-7.76	5.08
2012	22.48	3.49	15.40	-8.41	8.83
2013	-43.44	-3.96	9.89	3.03	-7.10
2014	-1.12	-10.74%	31.59	2.94	-0.17
2015	13.46	-2.44%	7.85	2.86	-2.29
2016	-7.21	4.04%	11.73	-2.78	-3.48
2017	-9.03	1.41%	-34.16	0.95	3.76

Source: Computed from WDI (2018)

A cursory perusal of Table 4 indicates that in **Ghana**, the percentage change in education financing as a ratio of total expenditure, though on a declining trend, was consistently positive between 2002 and 2006. In 2007, the ratio plummeted by 7.64 per cent, but reversed in the succeeding year by 7.71 per cent. Between 2009 and 2010, respective negative ratio of 6.42 and 8.0 per cent were recorded.

However, the ratio turned positive in 2011 and 2012. From 2013 to 2017, negative ratios of varying degrees were recorded with the exception of 2015, when the ratio was positive. In all, between 2002 and 2017, the overall change in the ratio was 56.76 per cent between 2002 and 2017.

For **Kenya**, the ratio has been largely negative. Between 2002 and 2015, negative ratios of varying degrees were recorded with the exception of 2002, 2004, 2005, and 2012. Positive ratios were however registered in 2016 and 2017. Overall the change in the ratio was negative 20.98 per cent over the period 2002 and 2017.

The ratio was broadly negative in Nigeria between 2002 and 2010, with the exception of 2002, 2006 and 2009, when the ratios were in the positive trajectory. The ratio reversed in the remaining year to 2017. From 2011 to 2016, the ratios were positive, but turned negative in 2017. Cumulatively, the ratio was 49.53 per cent between 2002 and 2017.

The data for **Tunisia** indicates that the ratio was negative in seven years between the period 2002 and 2017. On the whole, the ratio was negative 6.97 per cent for Tunisia over the period 2002 to 2017.

For **South Africa**, the ratio was negative for ten of the sixteen years (2002-2017) with the overall variation of negative 7.41 per cent.

To understand the implications of the above analysis on economic development, Table 4 shows the countries' ranking on HDI. The cursory perusal clearly shows that countries that finance their education with

higher percentage of their GDP also performed better in that order on this critical indicator of development.

All the comparable countries analyzed above were ranked better than Nigeria mimicking the order of the level of resources devoted to education investment. Between 2010 and 2017, with the exception of Nigeria, none of the countries scored below 0.55, the threshold that separate the middle performing economies from the worst on the HDI ranking, a metaphor for development terms.

Table 4: Human Development Index For Selected Countries

Year	GHANA	SOUTH AFRICA	NIGERIA	KENYA	TUNISIA
Variable	HDI	HDI	HDI	HDI	HDI
2001	0.483	0.61		0.456	0.661
2002	0.489	0.617		0.456	0.666
2003	0.49	0.615	0.443	0.468	0.673
2004	0.498	0.613	0.462	0.48	0.682
2005	0.509	0.614	0.465	0.49	0.689
2006	0.519	0.616	0.475	0.505	0.695
2007	0.53	0.621	0.479	0.514	0.701
2008	0.542	0.633	0.485	0.523	0.707
2009	0.547	0.642	0.49	0.533	0.71
2010	0.554	0.649	0.484	0.543	0.716
2011	0.563	0.657	0.494	0.552	0.718
2012	0.57	0.664	0.512	0.559	0.719
2013	0.577	0.675	0.519	0.566	0.723
2014	0.576	0.685	0.524	0.572	0.725
2015	0.585	0.692	0.527	0.578	0.728
2016	0.588	0.696	0.53	0.585	0.732
2017	0.592	0.699	0.532	0.59	0.735

Source: UNDP (2018)

In Nigeria, beyond the poor investment in education is the a more serious problem of the recruitment process of teachers, starting from the training. The requirement for admission into the colleges of education where the first level of teachers for the primary school is weak and unacceptable for a nation that want to develop its manpower. Data from 2015 to date indicate that the admission requirements for candidate to colleges of education is not comparable to those for the university and the polytechnics.

Furthermore, the required cut off point in the qualifying examination is such that 20.0 per cent in each subject is considered a pass mark. This essentially tantamount to recruiting graduates with pass or third-class degrees to lecture in the university as against the global practice of selecting the best and the brightest to teach. This is one of the foremost drawbacks in the education process currently in Nigeria.

PART IV EMPIRICAL LITERATURE REVIEW

Investment in human capital is universally recognized as a key pillar of achieving inclusive growth. Investment in education has been statistically linked to better economic development outcomes. Education enables poor men and women both to participate in and benefit from economic growth (Ravallion, 2004).

Maddisson (2007) conducted a survey of impact of education on rural economy and reported that in rural economies, educational improvement has been shown to increase returns to small scale farmers because they can readily absorb new technique and innovation as well as adapt more effectively to climate change risks.

Rauwyar and Kandbur (2009) found that by improving infrastructure qualities, social benefits for deserving people, advanced agriculture technologies, social services (including education), GDP growth and increased contribution of agriculture GDP growth will provide the basis for inclusiveness of economic growth.

Rahul et al (2013) estimated a unified measure of inclusive growth for emerging markets by integrating their economic growth performance and income distribution outcomes, using data over three decades. They applied the micro economic concept of social mobility function at the macro-economic level to measure inclusive growth that macro-economic stability, human capital (education), and structural changes are foundation for achieving inclusive growth.

Elena and Sushana (2013) focused on both the pace and pattern of growth and have identified the employability of the poor and cost of capital, geography and infrastructure and building blocks of inclusive growth analytical framework. They pointed out that rapid pace of growth is necessary for substantial poverty reduction but for growth to be sustainable in the long run, it should be broad across the sectors and inclusive of the large part of the country's labour force.

Andersson, Jagers, Lindskog and Martinsson (2013) investigated whether education for sustainable development (ESD) might have the intended effects on teacher education students. More specifically, they account for the results from a panel study on the effects of a course on SD held in autumn 2010 at the University of Gothenburg (n = 323) on teacher education students. The surveys consisted of questions about the students' concerns about various issues, including issues related to SD, and their attitudes towards SD and views of moral obligations to contributing to SD. The study included a control group (n = 97) consisting of students from the teacher-training programme at University West, which had not and did not include ESD. They found positive effects of ESD on almost all attitudes and perceptions, including e.g., personal responsibility in relation to SD and willingness to contribute to SD, while there is no noticeable effect in the control group.

Boyi (2013) explained the concept of education, the concept of sustainable national development and relationship between education and sustainable national development. The study provided an insight into various challenges confronting education in Nigeria such as gender inequity in education, dearth of teachers, inadequate infrastructures, overcrowded classrooms etc. It finally suggested way on how to solve challenges confronting education in Nigeria. This is done through creation of conducive atmosphere for learning, allocation of enough funds for educational development, discouraging gender disparity in education by an enlightenment programme, setting up a trustworthy committee that will manage and supervise education etc.

Ilechukwu, Njoku and Ugwuozor (2014) examined education and development disconnect in Nigeria and made a case for education for Sustainable Development (ESD) as the critical path to Nigeria's sustainable development and global competitiveness. The outcome of the study revealed that education is the pivot of national transformation and development, but Nigeria's dysfunctional educational system perpetuates and deepens poverty and underdevelopment and consequently, the resource-rich Nigeria is described as a low human development country and as a country with blunted

edges in the United Nations Development Programme (UNDP) Human Development Reports and the World Economic Forum Africa and Global Competitiveness Reports, respectively. Relying on secondary data, the study argued that a human-rights-approach-to-education, investment in quality education, environmental education, research and innovation, achieving the millennium development goals (MDGs) and science and technology are prerequisites for Nigeria's sustainable development and global competitiveness.

Essentially, that Nigeria's educational system, policies and practices should be reoriented towards sustainable development, which is a tripod of interdependent and mutually reinforcing pillars of economic growth, human development and environmental conservation, in an equitable and sustainable manner, for present and future generations. The study submitted that all curricula and taxonomies of education, including environmental education are subsumable under ESD which equips individuals and societies with the knowledge, values and skills to live and work in an equitable secure and sustainable manner and balances economic well-being and human development with cultural tradition and respect for and protection of earth's natural resources and environment.

Adedeji (2014) examined university as a catalyst for sustainable development in Nigeria with particular emphasis on the Federal University of Technology, Akure using the political economy method. They also examined some of the challenges plaguing the Nigerian university system in the achievement of its objectives with emphasis on sustainable development. The place of the university system in the nation's attainment of the position of one of the best twenty economies by the year 2020 was discussed.

It further reviewed the importance of university education to the knowledge economy through collaborations and linkages, knowledge dissemination and sharing occasioned by globalization, since no part of the world is insulated from the current challenges facing mankind which threaten sustainable development.

They also reviewed some of the variables that needed to be given proper consideration in order to improve the quality of university education in Nigeria. It posited that with quality university education, the gap between Nigeria and the developed countries of the world can be bridged. The study concluded that through research and innovation, university education is a veritable and dynamic source of knowledge and human capital to transform the nation and ensure sustainable development.

Pauw, Olsson and Berglund (2015) used data from 2413 students in grades 6, 9, and 12 from 51 schools across Sweden to study the effectiveness of education for sustainable development (ESD). In line with the current debate on the definition of ESD, the researchers quantified the extent to which teaching can be labeled as holistic and/or pluralistic. Through a series of descriptive analyses and the estimation of structural equation models, their results indicated that ESD can indeed impact on student outcomes in terms of their sustainability consciousness. The results also revealed the key role ESD plays in addressing SD, paving the way for a more sustainable future.

Azra et al (2016) in their study of measurement and determinates of inclusive growth integrated growth, inequality, accessibility and governance into one single measure. Their results showed that macroeconomic stability and social financial deepening are important determinants to enhance inclusiveness, and reduce poverty and inequality.

Ekwueme and Ezenwa-Nebife (2016) studied education for sustainable development through academic freedom using political economy approach. The authors observed that academic freedom leads to the expansion and discovery of new ideas of knowledge, transmits and preserves culture developed in the learner's independent judgment of an environment free from external control and domination. Educational opportunities that Nigerian children would have enjoyed through Education for all to achieve sustainability and self-reliance is lacking due to: education for all, Gender Equality, Cultural Diversity, among others.

Robert, Yuko, Nonoyama-Tarumi, Rosalyn, and Charles (2016) investigated the contributions of education for sustainable development (ESD) to quality education in 18 countries. The analysis revealed that major themes repeated across the 18 studies, showing that ESD contributes in many ways to quality education in primary and secondary schools.

Teaching and learning transforms in all contexts when the curricula include sustainability content, and ESD pedagogies promote the learning of skills, perspectives and values necessary to foster sustainable societies. The research also identified the need to integrate ESD across all subjects, to provide professional development for teachers to ensure ESD policy implementation and to adopt ESD management practices to support ESD in the curriculum in order to broaden ESD across countries. Faouzi and Othman (2017) investigated the causal relationship between education expenditure and inclusive growth in Saudi Arabia (1981-2013) using inequality adjusted human development index for inclusive growth, ratio of human resources

development expenditure to GDP for education and structural Auto Regressive model of analysis. They found out that education expenditure has a positive impact on inclusive growth.

Ibukun and Aremo (2017) utilized Nigeria's annual data from 1981 to 2014, and employed both the autoregressive distributed lag model (ARDL) and Error Correction Method (ECM) to investigate long run and short run parameter among inclusive growth variables. They found out a negative relationship between Government consumption education expenditure, and inclusive growth both in the short run and long run.

Onovughe and Mordi (2017) examined the role of religious education in attaining Sustainable Development in Nigeria using research approach which relied on logical slogism that adhere to the rule of logical slogism. The study identified factors/affecting sustainable development, and posits that education is a determinant factor for development of any nation or society.

Again, the study found out that the right values are integrated in the educational system through religious teaching. It demonstrated that the right change of persons is through moral value which is the

prerequisite for developing in any nation. As there is no nation that can rise above the quality of her education.

Florian, Norma, Rodrigo, Daniela and André (2019) conceptualized the impacts of higher education institutions (HEIs) on sustainable development (SD). Inductive content analysis was applied to identify major themes and impact areas addressed in the literature to develop a conceptual framework detailing the relationship between HEIs' activities and their impacts on SD.

The findings revealed six impact areas (education, research, outreach, campus operations and campus expenses) where direct (qualified workforce, research uptake in business and policy making, cultural dialogue, GHG emissions caused by operations and positive attitudes towards SD, in-migration of students) and indirect (economic growth, change of societal and business practices, social cohesion, contribution to climate change and sustainable lifestyles) impacts of HEIs on SD may occur. The findings also indicated a strong focus on case studies dealing with specific projects and a lack of studies analyzing impacts from a more holistic perspective.

PART V: METHODOLOGICAL FRAMEWORK

Table 5: Description of Variables

variable	source		
HDI	Human development indicator (a proxy for Economic development)	World indicator 2019	development
SSE	Secondary school enrollment % of gross (a proxy for education)	World indicator 2019	development
INFMOT	Infant mortality rate	World indicator 2019	development
GDDPC	Gross Domestic product per capita	World indicator 2019	development
POPGRT	Population growth rate(annual)	World indicator 2019	development
TOP	Trade openness (ratio of export +import to GDP)	CBN Statistical bulletin 2018	
FD	Financial deepening (ratio of broad money supply to GDP)	CBN Statistical bulletin 2018	

To determine the impact of education on economic development in Nigeria, the study adopts ARDL model. The functional form of the adopted model is given as

$$\text{HDI} = f(\text{SSE}, \text{INFMOT}, \text{TOP}, \text{FD}, \text{GDPPC}, \text{POPGRT}) \dots\dots\dots 1$$

Taking the logarithm of the variables, equation 1 transforms to

$$\log(\text{HDI}) = f(\text{Log}(\text{SSE}), \text{Log}(\text{INFMOT}), \text{Log}(\text{TOP}), \log(\text{FD}), \log(\text{GDPPC}), \log(\text{POPGRT})) \dots\dots\dots 2$$

The ARDL Specification of equation 2 is given as:

$$\begin{aligned} \Delta \log(\text{HDI}) = & \delta + \sum_{i=1}^k \alpha_1 \Delta \log(\text{HDI})_{t-i} + \sum_{i=1}^k \alpha_2 \Delta \log(\text{SSE})_{t-i} + \sum_{i=1}^k \alpha_3 \Delta \log(\text{InfMot}) \\ & \sum_{i=1}^k \Delta \alpha_4 \log(\text{TOP})_{t-i} + \sum_{i=1}^k \alpha_5 \Delta \log(\text{PopGrt})_{t-i} + \sum_{i=1}^k \alpha_6 \Delta \log(\text{GDPPC})_{t-i} + \\ & \sum_{i=1}^k \Delta \alpha_7 \log(\text{FD})_{t-i} + \beta_1 \log(\text{SSE})_{t-i} + \beta_2 \log(\text{InfMot})_{t-i} + \beta_3 \log(\text{TOP})_{t-i} \\ & + \beta_4 \log(\text{GDPPC})_{t-i} + \beta_5 \log(\text{PopGrt})_{t-i} + \beta_6 \log(\text{FD})_{t-i} + \\ & \mu_t \dots\dots\dots 3 \end{aligned}$$

Where $\alpha_1 - \alpha_7$ are short run coefficients, $\beta_1 - \beta_6$ captures long run relationships, δ represents the intercept or constant, μ is the error term and Δ represents the difference operator.

In testing the hypothesis of no cointegration or otherwise among the variables, the F-test of the joint significance of the coefficients of the lagged levels of the variables was employed. The null hypothesis of no cointegration between economic development and the explanatory variables given as:

$$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$

The alternative hypothesis is given as:

$$H_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq 0$$

Decision on the rejection or acceptance of the null hypothesis is based on the lower and upper bounds critical values (Pesaran *et al.*, 2001). The null hypothesis of no cointegration is rejected if the calculated F-statistics is above the upper bound critical value. Also, if the F-statistics falls below the lower bound critical value, the null cannot be rejected.

If the F-statistics is between the lower bound and upper bound critical values, the result becomes inconclusive.

The conditional ARDL model is used to estimate the long-run impact if a cointegration relationship is established. The ARDL long run model is specified as:

$$\text{HDI}_t = \beta_1 + \beta_2 \text{Log}(\text{SSE}) + \beta_3 \text{Log}(\text{INFMOT}) + \beta_4 \text{Log}(\text{GNIPC}) + \beta_5 \log(\text{FD}) + \beta_5 \text{Log}(\text{TOP}) + \beta_6 \text{Log}(\text{POPGRT}) + \mu \dots\dots\dots 4$$

After selecting the optimal lag length of the ARDL model using the Akaike information criteria or the Schwarz Bayesian criteria, the dynamic short run error correctional model is specified as

$$\begin{aligned} \log(HDI) = & \delta + \sum_{i=1}^k \alpha_1 \Delta \log(HDI)_{t-i} + \sum_{i=1}^k \alpha_2 \Delta \log(SSE)_{t-i} + \sum_{i=1}^k \alpha_3 \Delta \log(InfMot) \\ & \sum_{i=1}^k \Delta \alpha_4 \log(TOP)_{t-i} + \sum_{i=1}^k \alpha_5 \Delta \log(PopGrt)_{t-i} + \sum_{i=1}^k \alpha_6 \Delta \log(GDPPC)_{t-i} + \\ & \sum_{i=1}^k \Delta \alpha_7 \log(FD)_{t-i} + \lambda ECM_{t-1} + \varepsilon_t \dots \dots \dots 5 \end{aligned}$$

Where $\alpha_1 - \alpha_7$ are the short run parameters and λ is the parameter which indicate the speed of adjustment and ECM is the lagged error correction term obtained from estimating equation 4

Table 6: Descriptive Statistics

	LGDPPC	LINF MOT	LFD	LHDI	LSSE	LTOP	LPOPGR T
Mean	10.53581	47.91619	2.286304	0.438405	31.42861	0.486038	2.580884
Median	10.71001	46.12500	2.105062	0.410000	27.21662	0.512432	2.585222
Maximum	13.27682	53.87500	3.033669	0.532000	56.17987	0.917539	2.715063
Minimum	7.510994	45.63500	1.777875	0.380000	17.09992	0.117670	2.488183
Std. Dev.	2.038944	2.680551	0.434240	0.051414	9.274569	0.212895	0.067963
Skewness	-0.189859	0.979300	0.800694	0.579741	0.861540	-0.068701	0.104441
Kurtosis	1.570659	2.427305	1.973050	1.821172	2.795688	2.128307	1.726538
Jarque-Bera	3.371934	6.419647	5.579396	4.214969	4.641570	1.200538	2.567393
Probability	0.185265	0.040364	0.061440	0.121543	0.098196	0.548664	0.277011
Sum	389.8249	1772.899	84.59326	16.22100	1162.858	17.98339	95.49271
Sum Sq. Dev.	149.6625	258.6727	6.788331	0.095161	3096.634	1.631676	0.166282
Observations	37	37	37	37	37	37	37

Source: Computed by the Author

From the Table 6, the average value of SSE (secondary school enrolment) is about 31.42, the mean of population growth rate is 2.5 while mean HDI stands at 0.43. Skewness which is a measure of asymmetry of the distribution indicates that all the variables except LGDPPC and TOP are positively skewed.

On the other hand, the kurtosis which is a measure of the peakedness or the flatness of the distribution indicates that all the variables are not normally distributed.

V.1 STATIONARITY, LAG LENGTH AND BOUND TEST

Unit Root Test

ADF Unit Root Test

The ADF unit root test results with intercept and trend indicate that all the variables are stationary at first difference $I(1)$, with the except POPGRT and $\log(\text{gnipc})$ which were stationary at level as shown in table 7 below.

Table 7: ADF Unit Root Test

VARIABLES	LEVELS	1 ST DIFF.	CRIT. VAL.	DECISION
Log(HDI)	-1.531694	-6.019464	3.54	$I(1)$
Log(SSE	-2.662887	-3.528971	3.54	$I(1)$
Log(INFMOT)	-4.373296		3.54	$I(0)$
Log(FD)	-2.024840	-5.487367	3.54	$I(1)$
Log(TOP)	-2.270112	-5.755109	3.54	$I(1)$
Log (GDPPC)	-0.481445	-8.014258	3.54	$I(1)$
Log(POPGRT)	-4.180215		3.54	$I(0)$
	-6.089438	-4.235990	3.54	$I(1)$

Source: Author's Compilation Using EViews 10

V.2 LONG RUN MODEL

Evidence from the estimated long run ARDL model Table 8 indicate that Secondary school enrolment (SSE) is positively related to economic development (proxied by HDI). The effect is also statistically significant. The positive relationship implies that the higher secondary school enrolment is required for promoting long term development in Nigeria. The is in agreement with earlier studies including Onwioduokit and Tule (2002). Education increases the productivity of the population leading to an improved income and standard of living. This finding is in line with apriori theoretical expectation.

The estimated model further suggests a direct relationship between GDP per capita (GDPPC) and economic development. The effect is also statistically significant indicating that increases in per capital income will enhance economic development in the long run. Contrary to theoretical expectation, infant

mortality (INFMOT) has a positive relationship with economic development in Nigeria in the period under review. The effect is however statistically non-significant.

The model established a long run positive relationship between (POPGRT) and Economic development in Nigeria. However, population growth rate was found to have no significant impact on economic development in the period under review.

Taking a look at the other explanatory variables, trade openness (TOP) and financial deepening (Log (FD)) both have negative impacts on Economic development in Nigeria. Low level financial inclusion and the small size of the manufacturing sector relative to GDP are some of the plausible explanations for the inverse relationship. Trade openness is however, statistically insignificant indicating that it is not a determinant of HDI in the model

Table 8. Long Run Coefficient**Dependent Variable: Log (HDI)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(FDD)	-0.021023	0.024200	-0.868687	0.3965
LOG(INFMOT)	0.020351	0.121884	0.166974	0.8693
LOG(SSE)	0.139681	0.046770	2.986579	0.0079
LOG(TOP)	-0.043784	0.019599	-2.233980	0.0384
LOG(POPGRT)	0.305426	0.189081	1.615321	0.1236

V.3 DYNAMIC SHORT RUN ERROR CORRECTION MODEL

The short run error correction model Table 9 indicate that school enrolment is positively related to economic development at zero lag but negative at lag one.

The impact is insignificant in both periods implying that School enrolment has no short run impact on Economic development.

Similarly, Financial deepening has a statistically significant positive short run impact on economic development.

However, this is in contrast to the long run scenario where evidence of negative relationship was established between financial deepening and economic development.

Going further, it can be seen that in the period under review, Trade openness (TOP) has a positive short run relationship with economic development. while population growth (POPGRT) has a statistically significant negative impact on economic development at lag one. The coefficient of HDI indicates that Past economic development enhances current economic development in the short run.

Finally, the error correction parameter is negative and statistically significant. its coefficient of 0.80 indicates that 80% of the discrepancies between long run and short run equilibrium is corrected each year.

V.4 COEFFICIENT OF SHORT RUN MODEL**Table 9: DEPENDENT VARIABLE: LOG(HDI)**

ECM Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.802062	0.200278	-8.997795	0.0000
DLOG(HDI(-1))	0.427181	0.087040	4.907868	0.0001
DLOG(FD)	0.060885	0.010456	5.823057	0.0000
DLOG(FD(-1))	0.032634	0.011086	2.943834	0.0087
DLOG(SSE)	0.021108	0.014686	1.437295	0.1678
DLOG(SSE(-1))	-0.032115	0.016650	-1.928833	0.0697
DLOG(TOP)	-0.006151	0.003834	-1.604305	0.1260
DLOG (TOP (-1))	0.035401	0.004016	8.814582	0.0000
DLOG(POPGRT)	0.297449	0.263689	1.128028	0.2741
DLOG (POPGRT (-1))	-1.082484	0.267953	-4.039832	0.0008
CointEq(-1) *	-0.807869	0.089466	-9.029937	0.0000
R-squared	0.874332			
Adjusted squared R-	0.821970	D.W		2.5

Source: authors compilation using EViews 10

MODEL TWO**V.5 STATIC LONG RUN MODEL**

Similar to the long run model for development, school enrolment has a positive long run effect on economic growth in Nigeria. Trade openness is positively related to economic growth in the long run signifying that the more open an economy is, the more its output is likely to grow. Furthermore, evidence from the long run

model indicate that Infant mortality (INFMOT), GDP per capita (GDPPC) and financial deepening (FD) are all negatively related to economic growth in Nigeria.

This is largely explained by the structural defects in the economy and the restrictiveness of growth mechanisms in Nigerian economy. while population growth rate (POPGRT) exhibit a direct impact on economic growth rate in the period under review.

Table 10: Dependent variable: Log (RGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(FDD)	-0.111956	0.086844	-1.289159	0.2295
LOG(INFMOT)	-2.640342	0.472296	-5.590445	0.0003
LOG(SSE)	0.232393	0.144262	1.610914	0.1417
LOG(TOP)	0.222460	0.068047	3.269215	0.0097
LOG(POPGRT)	0.787736	0.681080	1.156598	0.2772
LOG(GDPPC)	-0.068418	0.067731	-1.010147	0.3388

V.6 DYNAMIC SHORT RUN ERROR CORRECTION MODEL

Evidence from the estimated error correction model Table 11 indicates that School enrolment has a positive short run effect on economic growth in Nigeria. Similarly, GDP per capita has a dynamic positive effect on economic growth.

On the other hand, financial deepening is negative and significant, but positive and statistically significant at lags one and two.

The estimated error correction model indicate that Trade openness has an adverse effect on economic growth at lags one and two. The growth rate of population improves economic growth.

VARIABLE	COEFFICIENT	STD. ERROR	T-STATISTIC	PROB.
C	17.90883	1.778399	10.07019	0.0000
DLOG(RGDP(-1))	0.743388	0.083747	8.876588	0.0000
DLOG(FDD)	-0.103006	0.022003	-4.681522	0.0011
DLOG(FDD(-1))	0.198889	0.027888	7.131702	0.0001

DLOG(FDD(-2))	0.143591	0.028495	5.039228	0.0007
DLOG(INFMOT)	-10.87532	2.108564	-5.157692	0.0006
DLOG(INFMOT(-1))	1.326441	3.242596	0.409067	0.6921
DLOG(INFMOT(-2))	7.990338	2.047605	3.902284	0.0036
DLOG(SEC_SCH_ENRT)	0.078415	0.033759	2.322809	0.0453
DLOG(TOP)	0.036587	0.009476	3.861018	0.0038
DLOG(TOP(-1))	-0.078265	0.015705	-4.983461	0.0008
DLOG(TOP(-2))	-0.044195	0.010899	-4.054832	0.0029
DLOG(POPGRT)	6.927170	1.346675	5.143906	0.0006
DLOG(POPGRT(-1))	-7.571435	1.955985	-3.870906	0.0038
DLOG(POPGRT(-2))	3.517142	1.128949	3.115414	0.0124
DLOG(GDPPC)	0.070261	0.031166	2.254384	0.0506
DLOG(GDPPC(-1))	0.147475	0.036017	4.094593	0.0027
DLOG(GDPPC(-2))	0.184914	0.034967	5.288204	0.0005
CointEq(-1)*	-0.812897	0.080857	-10.05351	0.0000
R-squared	0.959431	Mean dependent var		0.047013
Adjusted R-squared	0.910749	S.D. dependent var		0.036938
S.E. of regression	0.011035	Akaike info criterion		-5.876128

Evidence from the estimated error correction model indicates that School enrolment has a positive short run effect on economic growth in Nigeria. Similarly, GDP per capita has a dynamic positive effect on economic growth in the short run as evidenced from the model. On the other hand, financial deepening is negative and significant at lag zero but positive and statistically significant at lags one and two.

The estimated error correction model indicate that Trade openness has an adverse effect on economic growth at lags one and two. While the growth rate of population is estimated to improve economic growth at lags zero and two.

PART VI SUMMARY, RECOMMENDATIONS AND SOME CONCLUDING REMARK

VI.I SUMMARY

This paper sought to investigate the role of education in achieving and sustaining economic development in Nigeria. The traditional neo-classical growth model advanced by Robert Solow and Trevor Swan in the 1950s, averred that economy output is a function of larger inputs of capital and labor (all physical inputs). This theory was called to question a few decades after, as it failed to explain why countries with little capital and labor grew faster than countries with abundance of these resources.

This gap in the explanation of the growth process resulted in the emergence of the endogenous growth theory in the 1980s pioneered by Romer (1986). The endogenous growth theory averred that, it was not only technology, that was the main driving force economic growth but identified and situated human capital as a critical variable in the economic growth and development.

Abstracting from the theory, the paper examined education in Nigeria, its financing, including some comparable analysis with selected African countries and its connection with economic development. The study adopted ARDL model to examine both the short run and long run relationships between education and development proxied by HDI and education and economic growth within the context of inclusive growth model.

Evidence from the estimated long run ARDL model indicated that Secondary school enrolment (SSE) is positively correlated to economic development (proxied by HDI). The effect is also statistically significant. The positive relationship implies that the higher secondary school enrolment is required for promoting long term development in Nigeria. The results further suggest a direct relationship between GDP per capita (GDPPC) and economic

development. The effect is also statistically significant indicating that increases in per capital income will enhance economic development in the long run. The model established a long run positive relationship between (POPGRT) and Economic development in Nigeria. However, population growth rate was found to have no significant impact on economic development in the period under review.

The short run error correction model indicate that school enrolment is positively related to economic development. The impact is insignificant in both periods implying that School enrolment has no short run impact on Economic development. Similarly, Financial deepening has a statistically significant positive short run impact on economic development. However, this is in contrast to the long run scenario where evidence of negative relationship was established between financial deepening and economic development.

The coefficient of HDI indicates that Past economic development enhances current economic development in the short run. The error correction parameter is negative and statistically significant. its coefficient of 0.80 indicates that 80% of the discrepancies between long run and short run equilibrium is corrected each year.

In the second model that adopted real GDP growth as the dependent variable, the long run model for development, school enrolment has a positive long run effect on economic growth in Nigeria. Trade openness is positively related to economic growth in the long run signifying that the more open an economy is, the more its output is likely to grow. Evidence from the estimated error correction model indicates that School enrolment has a positive short run effect on economic growth in Nigeria. Similarly, GDP per capita has a dynamic positive effect on economic growth.

Evidence from the estimated error correction model indicates that School enrolment has a positive short run effect on economic growth in Nigeria. Similarly, GDP per capita has a dynamic positive effect on economic growth in the short run. The estimated error correction model indicate that Trade openness has an adverse effect on economic growth with a one to two-year lags, while the growth rate of population is estimated to improve economic growth with lags.

VI.II RECOMMENDATIONS

Given the established relationship between education and economic growth and by extension development, the following recommendations should be considered by the relevant authorities in Nigeria:

Admission Process

(i). The admission process into the schools at all level should be made competitive. The idea of labeling a child disadvantaged and granting such child concession at birth is psychologically damaging to the psychic of such children. The danger of such arrangement is to institutionalized *entitlement syndrome*. Thus, such children will go through adult lives seeking for exception from competition thereby robbing the country of benefitting from the full potentials of such children. There must be a level playing field for every Nigerian child to excel for education to contribute to development.

Teacher Recruitment Process

Teaching should be the exclusive preserve of the best and the brightest. The idea of lowering cut off points for candidates seeking admissions into the Colleges of Education to as low as 80.0 per cent out of 400.0 per cent in the UMTE is not acceptable. It tantamount to recruiting graduates that made third class or pass degrees to lecture in the university.

The universally acceptable standards is that those who made first class or very high Second Class upper division are those recruited as graduate assistants. The real danger of current admission requirement in Nigeria is that since NCE is now the minimum qualification for teaching in Nigeria the children in the primary schools are being taught by weakest echelon of the academic society. The negative multiplier effects on the future of education is unfathomable.

Renumeration

To attract, maintain and retain the best and the brightest to the educational sector will require a competitive remuneration package. Teachers at all levels must be paid higher than the regular public servants. For the university, the arrangement must be more forward looking. The university lecturers' wages should be indexed to some macroeconomic variables, like inflation and exchange rate to guarantee the value of their income over time and in time. The advantage of such arrangement will be that it will curtail brain drain while attracting foreign scholars to Nigeria.

Funding

(i). The current educational funding arrangement in Nigeria is clearly inadequate. The different level of governments (Federal, States and Local) should device a more creative way to educational investment. Expenditure on Education must be considered as investment and not just expenditure. Both the scale and funding modalities need to

change radically. The access SUBEC funds that is currently tied to counter-part funding from states is counterproductive, it tantamount to requiring anemic patience to donate blood to be able to access more blood to survive. There is need to directly release the funds to the different tiers of government base on a very realistic formula that excludes counterpart funding.

(ii). Education at the lower levels (Primary and Secondary) could be considered a public goods that the government must strive to provide at a qualitative manner. In this regards, boarding school arrangement must be reactivated nation-wide. This will certainly guarantee access and quality control including character building. However, at the tertiary level there is need to build in some level of cost recovery in the form of fees to finance this level of education.

To guarantee access while accommodating the indigent students, there is need to set up an **EDUCATION BANK** where students can access loan to pay for their fees and repay such loans securing employment over a period of time ranging from five to ten years.

(iii). There are several institutions currently operating in Nigeria ostensibly to manage educational funding that are drainage pipes, one such example is the TedFund. The Money spend on maintaining the Bureaucracy would have been better utilized if the resources were allocated directly to the various institutions to support both the capital and recurrent expenditures with adequate monitoring and evaluation to ensure productive use of such resources.

(iv). Joint Admission and Matriculation Board has outlived its relevance in Nigeria, the Board should be disbanded so that the candidates could apply directly to the university of their choice as is practiced in other countries. The arrangement of having both JAMB and the Universities conducting post-UTME is not tidy.

Again, the money that will be realize from the sale of admission forms could serve as one of the creative sources of funding of the universities and other institutions. From 2015 to date the realizable revenue as declared by JAMB ranged from #5.0 billion to #7.8 billion. This would go a long way to minimize the inadequate funding experienced by the tertiary institutions in Nigeria.

(v). The government should creative an admixture of incentive to encourage scholarship. This could be done by dedicating 80.0 per cent to merit and

reserving 20.0 per cent for fee paying. This will reduce the number of Nigerian students that are all over west Africa paying fees to attend substandard university out post colleges that are found in these countries.

VI.III SOME CONCLUDING REMARKS

There is no alternative to education if the goal of a nation is to achieve sustainable economic development would be realized. All the countries that have made progress in the world today, without exception, have been driven with knowledge. The 21st

century economy is knowledge based and education is the ONLY sure way to acquire all the knowledge and know-how needed for the turnaround of the fortune of Nigeria. Education is not just imperative but an ultimatum for development. Expenditure on education is an investment with the potentials of multiples returns both in the short and long-runs. Nigeria education funding model needs to be revisited.

SELECTED REFERENCES

- Adededeji, A. O. (2014). The University as a Catalyst for Sustainable Development in Nigeria: A Case Study of the Federal University of Technology, Akure. *Journal of Engineering and Engineering Technology*, 8(2), 55-60.
- Adesina, S. (1981). Introduction to Educational Planning. Ile-Ife University of Ife Press
- Adiele E., Obasi K., & Ohia A. (2017). Fundamentals of Educational Planning. Nigeria. Harey Publication Coy.
- Age, E. (2005). Objectives of Teaching Education in Nigeria. London, British Council.
- Aharonovitz, G. (2007). Expansion of firms and human capital accumulation by training: A growth model for the not-so-growing. Available at www.wsu.edu
- Aliu, Y. O. (1997). Introduction to Manual on University Management. Abuja. National University Commission.
- Andersson, K., Jagers, S. G., Lindskog, A. & Martinsson, J. (2013). Learning for the Future? Effects of Education for Sustainable Development (ESD) on Teacher Education Students. *Journal of Sustainability* 2013, 5, 5135-5152; www.mdpi.com/journal/sustainability.
- Arrow, K. (1962) 'The Economic Implications of Learning by Doing', *Review of Economic Studies*, vol. 29, no. 3, June, pp. 155-73.
- Boyi, A. A. (2013). Education and Sustainable National Development in Nigeria: Challenges and Way Forward. *Mediterranean Journal of Social Sciences MCSER Publishing, Rome-Italy*, 4(8), 147-152.
- Dike, K. O. (1980). 100 Years of British Rule in Nigeria, 1857-1957. In I. Obaro (Ed), *Groundwork of Nigeria History*. Ibadan: Heinemann.
- Eicher, T. & Penalosa, C.G. (1999). Inequality and growth: The dual role of human capital in development. Available at www.eheschrs-mrs.fr.
- Ekpo, A. H. (2017). *The Nigerian Economy: Current Recession and Beyond*. 33rd Convocation Lecture at Bayero University, Kano, Friday, March 17, 2017.
- Ekwueme, C. O., Ekon, E. E. & Ezenwa-Nebife, D. C. (2016). Education for Sustainability through Academic Freedom. *Global Journal of Educational Research Vol 15, 2016: 23-30 Copyright© Bachudo Science Co. Ltd Printed In Nigeria. ISSN 1596-6224 www.globaljournalseries.com; Info@globaljournalseries.com*.
- Fabunmi, M. (2005). Historical Analysis of Educational Policy Formulation in Nigeria: Implications for Educational Planning and Policy. *International Journal of African & African American Studies Vol IV, No. 2, July 2005*.
- Fafunwa, A. B. (2004). History of Education in Nigeria. Ibadan: NPC Educational Publishers Ltd.).
- Federal Republic of Nigeria (FRN) (1979). The Constitution of Republic of Nigeria. Lagos: Federal Ministry of Information.
- Federal Republic of Nigeria (2014). National Policy on Education. Lagos: NERD Press.
- Federal Republic of Nigeria (1999). Constitution of the Federal Republic of Nigeria. Lagos: Federal Republic of Nigeria Official Gazette.
- Florian, F., Norma, S., Rodrigo, L., Daniela, R. & André, M. (2019). The impacts of higher education institutions on sustainable development. A review and conceptualization Sustainability in Higher Education, *Emerald Publishing Limited* 20(1), 23-38.
- Gbosi, A. N. (2003). *Economics of Human Resources Development*; Emihai Printing and Publishing Company, Nigeria.
- Hauwa, I. (2012). *Italian Journal of Sociology of Education*, 1, 2012.
- ICSU & ISSC. (2015). *Review of Targets for the Sustainable Development Goals: The Science Perspective*. Paris: International Council for Science (ICSU).
- Ijebuola, K. O. (1998). Education in Nigeria: An Historical Perspective. Ijebu-Ode: Lucky Odoni (Nig) Enterprises.

- Ikechukwu, O. G. (2006). "Proliferation of Private Schools In Nigeria: Its Effects on Nigerian Educational System". In *Farfaru Journal of multi-Disciplinary Studies*.
- Ilechukwu, L. C., Njoku, C. C. & Ugwuozor, F. O. (2014). Education and Development Disconnect in Nigeria: Education for Sustainable Development (ESD) as the 21st Century Imperative for Nigeria's National Transformation, Sustainable Development and Global Competitiveness. *Journal of Economics and Sustainable Development*, 5(23), 44-56.
- Imam, Hauwa. (2003). A Survey of Pre-colonial Almajiri Education in Kanem-Borno and Hausaland. *SAPHA – Journal of Historical Studies* 1 (1), 1-6.
- Kalu, I. E. (2001). *Issues in Problems and Policies of Development*. Mmeograph Series No. 1, 2001. Techno Consult LTD, 29, Lye Oyekammi Street Hasa, Lagos, Nigeria.
- Lucas, R.E. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics*. 22, 12-23.
- Maclean, P. (2008). Education for peace building and sustainable development: delusion, illusion, or reality? Retrieved from <http://www.daneprairie.com>.
- Marchand, M., Michel, P., Paddison, O., & Pestieau, P. (2003). Optimal education subsidy and taxes in an endogenous growth model with human capital, Available at <http://www.core.ucl.ac.be/services/psfiles/dp03/dp2003-19.pdf>. Retrieved on September 01, 2016.
- Mohammed, S. M. (2016). Rethinking Education for Sustainable Development: The Role of Tertiary Institutions in Nigeria. *Book of Topical Educational Issues* (March, 2016): 465–473.
- Munasinghe, S. (2004). *Effective Instructions through Dynamic Discipline*. Ohio, Charles E. Merrill.
- Nnokam, N. C., & Sule, H. (2017). Teachers Education and Sustainable Development Goals in Nigeria: Problems and Prospects. *International Journal of Scientific Research in Education*, 10(4), 401-412.
- Nwagwu, C. C. (2011). The Environment of Crises in the Nigeria Education System. *Comparative Education*, 33 (1), 87-96.
- Odukoya, D. (2009). Formulation and Implementation of Education Policies in Nigeria. Educational Research Network for West and Central Africa (ERNWACA), www.slideshare.net.
- Ogunnu, M. (2000). Introduction to Educational Management. Benin City, Mabogun Publishers.
- Omole, C. O. & Ozoji, B. E. (2014). Science Education and Sustainable Development in Nigeria. *American Journal of Educational Research*, 2(8), 595-599.
- Onovughe, S. & Mordi, J. F. (2017). Religious Education A Vital Tool for Sustainable Development in Nigeria. *International Journal of Religious and Cultural Practice*, 1 (3), 12-19.
- Onwioduokit, E.A. and Tule, M. (2002). "Options for Sustainable Funding of Education in Nigeria" *Proceedings of the Nigeria Economic Society*, Ibadan.
- Osokoya, I. O. (2002). History and Policy of Nigerian Education in World Perspective. Ibadan: AMD Publishers.
- Osili, U. O. I. (2005). Does Female Schooling Reduce Fertility? Debating and Proposing Policy Options for National Development. Enugu: African Institute for Applied Economics,
- Ozigi, A., & Ocho, L. (1981). Education in Northern Nigeria. London: George Allen and Unwin Publishers Ltd.
- Pauw, J. B., Gericke, N., Olsson, D. & Berglund, T. (2015). The Effectiveness of Education for Sustainable Development. *Journal of Sustainability* 2015, 7, 15693-15717. www.mdpi.com/journal/sustainability.
- Romer, P. (1986). Increasing returns and long run growth. *The Journal of Political Economy*, 94, 1002-1037.
- Sasnett, M. T., & Sepmeyer, H. I. (1967). Education System of Africa. Los Angeles: University of California Press.
- Taiwo, C. O. (1980). The Nigerian Educational System. Lagos: Thomas Nelson Nigeria Limited.

- Tahir, G. (2001) Federal Government Intervention in U.B. E. form 1(1) 1-12 Kaduna, Nigeria.
- Uchendu, V. C. (1979). Education and Politics in Tropical Africa. New York: Conch Magazine.
- Umo, J. U. (2012). *Escaping Poverty in Africa. A Perspective on Strategic Agenda for Nigeria*. Millennium Text Publishers Limited 14 Science Road, Unilag Estate, Magodo, Isheri, Lagos, Nigeria.
- United Nations (2015). Transforming Our World: The 2030 AGENDA for Sustainable Development, New York.
- UNESCO (2000). *Nigerian Human Resource Development and civilization: Education and world Affairs*, Newyork.
- UNESCO. 2014b. *UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development*. Paris: UNESCO. <http://unesdoc.unesco.org/images/0023/002305/230514e.pdf> (accessed 3 February 2017).
- Woolman, D. C. (2001). Educational Reconstruction and Post-Colonial Curriculum Development: A Comparative Study of Four African Countries. *International Education Journal*, 2(5), 27-46.