The relationship between education and self-sustainability in a stressed economy

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Abstract
Education is an important key in achieving sustainable national development. For a state or society to achieve sustainable development, the quality of its education should be an issue of great concern. This paper examined the relationship between education and self-sustainability in Nigeria. It also provided insights into various challenges confronting education in Nigeria such as gender inequity in education, dearth of teachers, inadequate infrastructures, overcrowded classrooms and inadequate remunerations. Data from Central Bank of Nigeria Statistical Bulletin where recurrent expenditures on education and social and community services as well as Gross Domestic Products for 1985 to 2017 were used. The study also suggested ways on how to solve the identified challenges confronting education in Nigeria. The study recommends the creation of conducive atmosphere for learning, increasing financial allocation for educational development, ensure gender quality in education, and setting up a committee that will manage and supervise education policies that will involve sustainability.

Keywords: Change, Education, Gender inequality, Infrastructure, Self-Sustainability

Introduction
Nigeria, a giant nation in West African sub-region is blessed with abundant human and mineral resources across her six geo-political zones. However, despite this, it is classified among poor African nations characterized by abject poverty because of the low level of economic development. This, without doubt is connected to the low level of educational achievement and high rate of illiteracy in the country. Education is a multidimensional concept which can be described as the inculcation of adequate knowledge, skills and desirable attitudes cherished by society and considered for harmonious living. Education is a life-long process by which an individual is groomed in necessary skills and morals that would assist him in solving life challenges. Isa (2016) reflected that education is a mechanism for social and economic development of the people which contributes to economic growth through eradication of poverty and wealth creation.

The level of education of any given society is linked to the quality of skilled manpower available to drive production and service delivery processes as veritable instruments for socio-political and economic development in this ever changing world. This assertion therefore underscores the significant role of education in human capital development, poverty alleviation, eradication of diseases and wealth creation in any given nation. Supporting this thought pattern, Ezekiel and Musa (2013) declared that education is a tool for change and development in terms of politics, economics and social life. However, the dilemma in Nigeria educational system is inimical to sustainable economic development. In view of the above expositions, this paper discusses educational dilemma as an hindrance to sustainable economic development in Nigeria.

The real problem facing humanity today in terms of achieving sustainable development is how to motivate people to change underlying attitudes, behaviours and activities that are unproductive in this case unsustainability. Human beings are very resentful to change. In other words, people should be encouraged to channel their energy
towards contributing more to help alleviate poverty by acquiring relevant education and skills in order to promote developmental efforts that do not pollute good ideas and wasting scarce resources to destroy lives and edifices built over the years (Peter O.M and Juliana D. 2010). Here is where the idea of education for sustainable development has a special role in vindicating how various processes in education, which lie at the heart of promoting change in human behaviour, can be used on a global level to help turn things around (Baba, 2005). Hence, this research work “Education and self-sustainability in a stressed Economy”, and an issue that has global dimension, is appropriate in times like these. While a range of approaches is needed to cope with these problems, it is argued that education has a special role and responsibility in contributing to the challenges of sustainability.

Literature review
Sustainability in education is a complex concept. It is also continually evolving, which makes it difficult to define. One of the original descriptions of sustainability is credited to the Brundtland Commission; “sustainability is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, p 43). Sustainability is generally thought to have three components; environment, society, and economy. The well-being of these three areas is entangled, not separate. For example, a healthy, prosperous society relies on a healthy environment to provide quality education, food and resources, safe drinking water, and clean air for its citizens. The sustainability paradigm rejects the contention that casualties in the environmental and social realms are inevitable and acceptable consequences of economic development. Thus, sustainability is treated as a paradigm for thinking about a future in which environmental, societal, and economic considerations are balanced in the pursuit of development and improved quality of life. An important distinction is the difference between education about sustainable development and education for sustainable development. The first is an awareness lesson or theoretical discussion. The second is the use of education as a tool to achieve sustainability.

The term education has been defined and conceptualized in a number of ways. Okoh in Okorosaye-Orobite (2005) sees education as a process, a product, and a discipline. As a process, it “is the activity of preserving, developing, and transmitting the culture of a people from one generation to another”. As a product “it refers to change, whether overt or covert, implicit or explicit, which education is expected to bring about”. Also Akinpelu in Okorosaye-Oribite (2005:19) stresses that the product of education is the educated man, who in the African context is one “who shows evidence of a well-integrated personality ... he is economically efficient, socially and publically competent, morally acceptable and intellectually and culturally sophisticated”. Ukeje (1986) summed it up when he opined that,

Education is power, it is a process of acquiring knowledge and ideas that shape and condition man’s attitude, actions and achievements; it is a process of developing the child’s moral, physical, emotional and intellectual power for his contribution in social reform; it is the process of mastering the laws of nature and for utilizing them effectively for the welfare of the individual and for social reconstruction; it is the art of the utilization of knowledge for complete living.

Education is the largest part of UNESCO’s operations, in terms of allocation, financial and staffing resources. UNESCO seeks to help its member states strengthen and upgrade education and schooling, with
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particular reference to promoting best innovative practices. UNESCO Medium Term strategy 2008-2013 paragraph 3 (in Maclean, 2008) states:

Development and economic prosperity depend on the ability of countries to educate all members of their societies and offer them lifelong learning. An innovate society prepares its people not only to embrace and adapt to change but also to manage and influence it. Education enriches cultures, creates mutual understanding that underpins peaceful societies. UNESCO is guided by upholding education as a human right and as an essential element for the full development of human potentials.

Maclean (2008) notes that, although there are many keys to development, such as improved infrastructure such as dams, roads, telecommunication facilities, ports and the like, education is regarded as being the master key to economic and social development. High quality and relevant education and schooling have been shown to open the doors to: poverty alleviation, sustainable development, equity, justice, and mainstreaming of the marginalized as well as vulnerable groups in society.

Education constitutes the major instrument for sustainable human development and serves as a fulcrum around which every other activity revolves (Tahir, 2006:21). Nations which have recorded tremendous feats in the world heavily relied on the instrumentality of education. However, in Nigeria there seems to be a daily decline of educational standards. Former president Olusegun Obasanjo in his Presidential Speech on April, 24, 2000 in Dakar Senegal, attributed the educational falling standard to bad governance. In his speech; he stated that:

- Human beings are the architects and engineers of progressive change and development and they constitute the most important resources we can have internally.

Tahir (2006), identified a number of daunting challenges which Nigerian education is confronted with. They are:

i. Gender equity in education;
ii. Dearth of teachers;
iii. Overcrowded classrooms;
iv. Inadequate infrastructures;
v. Funding of education.

According to Osalor (2013), the Nigerian state operates in a 21st Century economy with a 19th Century education system. A system whereby much emphasis is still placed on the conventional classroom environment with much reverence for certificate for graduates, who in most cases are trained to be job seekers, as evidenced in present high unemployment rates in the land (Osalor, 2013). Muoghalu (2013a) posits that Nigeria’s education system, while improving, is not fit for the demands of competitive global markets, as the system does not provide Nigerians with the skills they need to get jobs. Okonjo-Iweala, et al (2010) highlights that the education most Nigerians receive is of dubious quality, and illiteracy remains high, even among those who attend school. Large numbers of children are regularly absent from school and must repeat years. In addition, facilities such as comfortable classrooms, good hostels, laboratories, standard libraries and sporting facilities, for recreation and physical development, are either in short supply, dilapidated or totally non-existent. Furthermore, many teachers lack the skills to do their jobs, while many still are frustrated due to poor working conditions or non-payment of salaries which in some instances are in arrears for months. Only recently, the media was awash with the startling story of a school teacher in Benin City, who could not read a book, to the shock of many Nigerians (Muoghalu, 2013a). A locus classics on the state of education in Nigeria is provided by Muoghalu (2013b), cited in Muoghalu
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(2013a). The highlights of the issues raised in this contribution include:

i. The problem of access reflected in the high occurrence of out-of-school children currently estimated at about 10 million. While a number of African countries made progress in school enrolments over the past decade, Nigeria regressed. The country’s net primary school enrolment rate dropped to 58 percent in 2010 from 64 percent in 1999. The primary school completion rate in Nigeria was approximately 75 percent between 2003 and 2010, but in Ghana the rate improved markedly from 69.6 percent to 88 percent, in Tanzania it rose from 55 percent to 90 percent over the same period.

ii. The low rate of secondary school enrolment which reflects the trend in Africa. Only 28 percent of Africa’s youths are enrolled in secondary school, and while a child entering the education systems of an OECD country has an 80 percent likelihood of going on to university or some other form of tertiary education, only 6 percent in sub-Saharan African have similar chances.

iii. The progressive erosion of the culture of education over the past three decades, reflecting a collapse of value systems.

iv. The prioritization of access over quality in the quest to meet the Millennium Development Goals – which included a target of education for all by 2015.

v. Secondary school terminal examinations organised by the West African Examinations Council (WAEC) and the National Examinations Council (NECO) have witnessed mass failures for the past several years. Only 5.75 percent of the 803,360 private candidates that sat the West African Senior Secondary School Certificate Examination in 2010 received 5 Credits (Cs) and above with English Language included, and 10 percent did so with Mathematics included. Nigerian secondary school students have become progressively weaker in the science subjects that lay the foundation for a knowledge economy based on science, technology and innovation. In the 2006 West African School Certificate Examinations, only 23 percent of candidates made passing grades in science subjects, with the pass ratios in subsequent years dropping or hovering at 20 percent in 2007, 26 percent in 2009, 26 percent in 2010, and 23 percent in 2011.

vi. The tertiary education system is plagued by weak learning infrastructure and low-quality teachers – the two factors that affect learning outcomes. University education has existed in an advanced state of decay for over two decades. Even first generation Nigerian universities have seen their accreditations withdrawn or threatened as a result of poor educational infrastructure such as libraries, classroom facilities, and student housing. Several universities are producing graduates that lack the right skills needed to perform tasks required in their chosen fields, making it difficult for them to get employment. No single university in Nigeria was featured in the Times High Education 400 Universities in the World rankings for 2011-2012, yet there were representatives from South Africa and Egypt.

vii. In Africa, no Nigerian university is listed in the top 20 – yet there are universities in Ethiopia, Sudan, Ghana, Kenya and Uganda in this list. The lecturer-to-student ratios have worsened. The ratio of teaching staff to students is 1-122 at the University of Abuja and 1-144 at the Lagos State University; but the same ratio is 1-4 at Harvard University, 1-9 at the Massachusetts Institute of Technology.
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(MIT), 1-3 at the University of Cambridge, and 1-10 at the National University of Singapore.

There is a dearth of qualified teachers at all levels of education. The report of a presidential panel on the needs of public institutions indicates a manpower crisis in Nigerian universities. Only 43 percent of academic staff in Nigerian public universities earned doctorate degrees. The remaining 57 percent do not have such minimum qualifications for university teaching. Just seven universities had up to 60 percent of their teaching staff with PhDs and Kano State University of Science and Technology, established in 2002, had one professor and 25 lecturers with doctorate degrees, while 74 percent of teaching staff at the Plateau State University in Bokkos are visiting faculty (Muoghalu, 2013a).

A proper and purposeful conceptualization of sustainable development would organically relate with the primary concept of development. However, let it be acknowledged instantly that development in human society is a many-sided process (Rodney, 2009). Okwueze (2011) highlights that development (a prelude to sustainable development) is geared towards the improvement of the standard of living of the people. Development means growth integrated with economic, scientific, political and home based technological expansion (Enamiroro, 2007). According to Rodney (2009) at the level of the individual, development implies increased skill and capacity, greater freedom, creativity, self-discipline, responsibility and material well-being. Some of these are virtually moral categories and are difficult to evaluate – depending as they do on the age, one’s class origins, and –personal code of what is right and what is wrong. However, what is indisputable is that the achievement of any of those aspects of personal development is very much tied-in with the state of the society as a whole (Rodney, 2009). It is the state of the society that determines sustainable development.

Estes (1993), cited in Nzekwe and Okeke (2014) highlights that credit for originating the “sustainable development” concept is generally given to the 1987 report of World Commission on Environment and Development (WCED, 1987). Popularly referred to as the Brundtland Commission; the Commission’s report, Our Common Future: From One Earth to One World, called for emboldened and dramatically new conceptions of developing that advanced the material wants of the present generation without depriving future generations of the resources required to satisfy their needs. Thus, the Commission conceptualized “sustainable development” rather simply as paths of human progress which meet the needs and aspirations of the present generation, without compromising the ability of future generations to meet their needs (Estes, 1993). Today, the sustainable development “movement” is multidisciplinary and cross-sectoral. The movement brings together specialists from the physical and environmental sciences along with experts in development economics, political science, appropriate technology, human and women’s rights, and others (Estes, 1993). Despite the apparent simplicity of the Brundtland Commission’s definition of sustainable development, the concept itself is rather complex (Estes, 1993).

This study has not overburdened its concerns with the complexities of the concept of sustainable development. In this study therefore, sustainable development is underscored as human progress which meet the needs and aspirations of the present generation, without compromising the ability of future generations to meet their own needs (Nzekwe and Okeke, 2014). The purpose of the study was to examine the relationship between education and self-sustainability in Nigeria, as well as provide insights into various challenges confronting education in Nigeria.

**Hypotheses**
The study was guided by the following hypotheses:
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1. There is no significant relationship between recurrent expenditure on education and economic growth in Nigeria.
2. There is no significant relationship between social and community development expenditure and economic growth in Nigeria.

Methods
The data for this research work is secondary and the samples were drawn from online statistical bulletins and economic reviews of the Central Bank of Nigeria and data drawn for the period of 32 years (1985 - 2017).

Model specification
\[ GDP = \beta_0 + \beta_1 \text{REE} + \beta_2 \text{SCE} + \mu \]

Where, 
Y is dependent variable and \( X_1 \) and \( X_2 \) are independent variables.
GDP = Gross Domestic Product (GDP)
REE = Recurrent Expenditure on Education (REE)
SCE = Social and Community Service Expenditure (SCE)
\( \beta_0 \) = Representing Constant
\( \beta_1 \) = Coefficient of Net Education
\( \beta_2 \) = Coefficient of Social and Community Services
\( \mu \) = Error Term

Estimation techniques
The Ordinary Least Square method (OLS) of the linear regression model was adopted due to the following reasons:

1. The mechanism of the OLS is simple to understand and interpret
2. The equation is specified in a linear form and fairly easy to compute compared to econometric method and
3. The parameters estimated by the OLS method have some desirable optical properties which are best linear, unbiased estimator.

Apriori expectation
\[ \beta_1 \text{ and } \beta_2 > 0 \]

Therefore, all the variables are expected to have significant relationship with GDP because an increase in education expenditure and social/community service expenditure will directly or indirectly have effect on self-sustainability of Nigerians.

Results and discussion
Descriptive profiles of variables
From table 1 below, the skewness is an indicator of the asymmetry or deviation of the variables from a normal distribution with an expected value of zero. The Kurtosis defines the degree of flattening or peakedness of a distribution with an expected value of three. Jarque bera statistics determine the normality or otherwise of a distribution. GDP, REE and SCE have their skewness greater than zero (positively skewness), the kurtosis are approximately three (mesokurtic) and their Jarque bera statistics of (7.430, 6.046 & 6.375) respectively denote that their errors are normally distributed.

<table>
<thead>
<tr>
<th>Table 1a: Descriptive analysis of variables</th>
<th>GDP</th>
<th>REE</th>
<th>SCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>28768.89</td>
<td>113.2767</td>
<td>251.4327</td>
</tr>
<tr>
<td>Median</td>
<td>9060.300</td>
<td>57.9600</td>
<td>84.7900</td>
</tr>
<tr>
<td>Maximum</td>
<td>113711.6</td>
<td>394.900</td>
<td>904.900</td>
</tr>
<tr>
<td>Minimum</td>
<td>1257.200</td>
<td>0.17000</td>
<td>0.65000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>34510.93</td>
<td>137.2229</td>
<td>323.8816</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.162146</td>
<td>1.015967</td>
<td>1.033994</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.960635</td>
<td>2.481774</td>
<td>2.399584</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>7.430343</td>
<td>6.046312</td>
<td>6.375974</td>
</tr>
<tr>
<td>Probability</td>
<td>0.024351</td>
<td>0.048647</td>
<td>0.041255</td>
</tr>
<tr>
<td>Sum</td>
<td>949373.5</td>
<td>3738.130</td>
<td>8297.280</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>3.81E+10</td>
<td>602563.8</td>
<td>335677.7</td>
</tr>
<tr>
<td>Observations</td>
<td>33</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

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Figure 1a: Trend of recurrent expenditure on education and social & community service expenditure REE & SCE (N Billion)

Figure 1a displays the trend of the annual recurrent expenditure on education as well as on social and community service expenditure over the years under consideration. From 1985 to late 1990s, it is evident graphically that the level of increase in both variables is very low. This implies that within this period recurrent expenditure on education as well as on social and community service experienced a linear graphical trend. This period coincided with the adoption of Structural Adjustment Programme (SAP) aimed at revitalizing the economy through depreciation of the country’s currency. Furthermore, the variables begin to experience aggregate increase from 1999 till date, though with several fluctuations which may be attributed to several macro and micro economic variables as well as political institutional changes.

Nigeria is characterized as a middle income, mixed economy and emerging market with expanding financial, service, communication and entertainment sector. The country is ranked 30th in the world in terms of GDP and 1st on its continent. Generally, persistent economic growth of any country is an indicator of how well such economy can be self-sustained, however, the increase in economic growth is the combination of several economic parameters, policies, frameworks and so on which in turn increase aggregate production. The trend analysis of GDP in (figure 1b) reveals that Nigeria economy has grown over the years. However, the graphical illustration shows that there was a slight reduction in the country’s GDP in 1993 while this was managed over years before the economy was able to regain its competency in early 2000s. The reduction phenomenon could be attributed to corruption and mismanagement by some military head of state during the period.
Table 2 presents the regression results of this study analysis. The coefficient of adjusted $R^2$ was about 0.81, this implies that about 81% of the included independent variables explain the variation in dependent variable in the model. The coefficient of recurrent expenditure on education was found positive (0.00977) while that of social and community service expenditure was found negative (-0.000190). The F-statistics value of 68.2544 with probability value of (0.0000) implies the model is not statistically significant. Finally, the Durbin Watson statistics of 0.6977 signifies there is presence of positive serial autocorrelation.
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**Test of hypotheses**

**H₀₁:** There is no significant relationship between recurrent expenditure on education and economic growth in Nigeria.

From the above regression result, the t-statistics of recurrent expenditure on education of 1.5496 is less than 2, showing an insignificant effect on gross domestic product. The result shows that there is no significant relationship between recurrent expenditure on education and economic growth in Nigeria, which means the hypothesis is accepted.

**H₀₂:** There is no significant relationship between social and community development expenditure and economic growth in Nigeria. The t-statistics of the regression result for social and community development expenditure value of -0.0712 is less than 2, showing an insignificant effect on economic growth in Nigeria. The result shows that there is no significant relationship between social and community development expenditure and economic growth in Nigeria, which means the hypothesis is accepted.

**Conclusion**

This paper discussed the dilemma in education and its implications for self-sustainability in Nigeria. In this era of global economic competitiveness educational development remains the only alternative to Nigerians for their active participation in the development process. Thus, poverty eradication, ensuring food security and good nutrition, access to water and sanitation, securing sustainable energy, creation of jobs, industrial sector development are without doubt, predicated on good quality and well-coordinated education.

The researcher used secondary data from the Central Bank of Nigeria Economic Reviews for the years under consideration such as National Gross Domestic Product, Recurrent Expenditure on Education and Recurrent Expenditure on Social and Community Service. The results from the analysis revealed significantly positive and strong relationship between educational policies and educational development in Nigeria and also a very strong and significantly positive relationship between education and self-sustainability in Nigeria. Thus, by further providing adequate funding to education and reduce corruption in the sector to its barest minimum it is expected that many Nigerian will be self-sustaining in the nearest future.

Education is the cornerstone of achieving a sustainable national development. There are no doubts achieving sustainable national development is the goal of all developing nations, Nigeria inclusive. As such there is need to invest, encourage and enlighten people on the value of education. Government should continue the contribution towards achieving this sustainable development. However, there is need for monitoring, supervising and ensuring that all the financial and other investments in education for the purpose of achieving sustainable development are not diverted for other purposes.

Having examined the relationship between education and self-sustainability in Nigeria over the years, the following policy recommendations were drawn from the study inferential results to guide government policy decisions, educational stakeholders and policy makers:

1. A monitoring framework of government expenditure on education targeted at reaching effective and efficient productive activities in all strata of education need to be urgently developed and implemented since it is an important key of achieving sustainable national development.
2. Also educational stakeholders need to review forthwith the role of government and reappraised with more emphasis on providing enabling environment for other stakeholders.
3. Private sector policy makers should be included in the formulation of education policies to ensure the nation attain self-sustainability.
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