The Role of Science Education in Good Governance, Peace Education and National Security in Nigeria

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A b s t r a c t

Nigeria, the global capital of extreme poverty, the 16th most dangerous nation in the world and the 33rd among 54 Africa nations in good governance is obviously in dire need of potent tools to stem poverty and insecurity, and to enhance good governance. The focus of this paper therefore, is on how science education can be utilized as a potent tool to develop and promote good governance, peace and national security. Firstly, the paper provided overviews of concepts such as science, education, science education, peace education, good governance, and national security. Secondly, the paper x-rayed the relationship between national security and good governance, national security challenges and the need for peace education. Thirdly, the paper examined the roles of science education as a panacea for security challenges and sustainable human development in Nigeria. Lastly, before conclusion and recommendations were made, the paper discussed how to utilize science education to enhance good governance and national security. It was recommended in the paper that stakeholders in the education industry should establish robust synergy with the political class to guarantee effective utilization of science education for good governance, peaceful coexistence and sustainable development in the nation.

Keywords: *Science, Education, Integration, Security, Good Governance, Peace Education*

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Background to the Study

Science: Science is a specialized body of knowledge, involved with the study of nature, in which certain peculiar methods are used and the knowledge acquired presented in the form of concepts, theories and law (Ayo, 20003). Science is also defined as an attempt by human beings to organize their experiences about nature into meaningful systems of explanations. (Ogunniyi, 1986). Science has made tremendous impact in our world to such an extent that; modern man now tends to see science as an integral component of modernity. Science has helped man in improving his environment and supplying his basic needs. This is of course a clear indication that the economics, social and political growth of a nation or society is predicated on scientific and technological advancement. Science has made tremendous impact in our world to such an extent that modern man tends to see science as Almighty. (Ejechi, 1999).

Education: Education as a lifelong process by which individual develops all his capabilities and become useful to himself, his fellow beings and thus contribute to the development of the society in which he belongs (Taiwo, 2014). It is equally the process of receiving or giving planned instruction in educational institutions. According to Wikipedia (n.d.) education started during the prehistory era during which adults train children knowledge and skills considered to necessary using oral and imitation methods only. Today education has evolved from oral transmission of knowledge and acquisition of skills by imitation into an interdisciplinary discipline.

Peace Education: Peace education is the process of acquiring the values, the knowledge and developing the attitudes, skills, and behaviours to live in harmony with oneself, with others, and with the natural environment (James, 2008). Peace education encompasses the key concepts of education and peace. Negative peace is defined as the absence of large-scale physical violence–the absence of the condition of war. Positive peace involves the development of a society in which, except for the absence of direct violence, there accordingly, peace education could be defined as an interdisciplinary area of education whose goal is institutionalized and non-institutionalized teaching about peace and for peace. Peace education aims to help students acquire skills for nonviolent conflict resolution and to reinforce these skills for active and responsible action in the society for the promotion of the values of peace. Its aim is to prevent a conflict in advance or rather to educate individuals and a society for a peaceful existence on the basis of nonviolence, tolerance, equality, respect for differences, and social justice.

Good Governance: Good governance is a system of government based on good leadership, respect for the rule of law and due process, the accountability of the political leadership to the electorate as well as transparency in the operations of government (Odock, 2006). It is governance that provokes and defines the nature of security. When there is governance failure, the security frame work deteriorates. Good governance is able to provide growth and structural change which result in development. Such structure includes schools, judiciary, military, and parliament. When the resulted structural change performs their roles properly, there will be security and the good governance will further be enhanced.

National Security and Good Governance

National security covers all activities and arrangements put in place to ensure free movement, integration and interactions among citizens without any real or imaginary danger and obstacles such as gender, racial, tribal or religious discrimination. The level of insecurity in the nation today calls for sober reflection by all particularly, in view of the fact that Nigeria is ranked 148 out of 163 nations in the 2019 Global Peace Index. The nation is also, one of the top five least peaceful countries in Africa; this means that Nigeria is one of the most dangerous nations in the world. National security is in jeopardy. Insecurity comes in different coloration and magnitude among which include the spate of bombings in some parts of the country, election related crises, kidnapping, human trafficking, banditry, terrorism, political assassination, extra- judicial killing of innocent citizens by security agents, hunger, armed robbery, and environmental degradation among others. All these have thrown up the need for all and sundry to be more retrospective, introspective and proactive on issues of national security so as to arrest this negative drift currently impacting our national psyche. Some of these security issues have been with us for some time now without fizzling out despite concerted efforts to the contrary (Orikpe, 2013).

The concept of good governance is ages old rather it is as old as civilization itself. History reveals that empires destroyed, states broken up regimes vanished because of bad governance. This implies clearly that good governance is the key ability of a government to maintain control over a state. Terrible consequences of bad governance can be seen in the recent history. Good governance should, and it must result in decision making that is fruitful and beneficial for the masses and through which they feel secure and participative as if they themselves would have made those decisions security is comprised of three basic factors, traditional security in a militarized sense, human security that comes from economic progress and good governance and finally the rule of law.

It is imperative to note here that major responsibility of a state is security. Understanding security in totality is important. Words "security" and "threat" are cognate words. Source of insecurity should carefully be analyzed to determine the focal points of national security strategy for any state. It is certain that security is not a standalone concept and especially it cannot be separated from governance. It is important to note that governance is not limited to development rather it encompasses all the sectors of human society that ensure quality of life for a human being. Most time security has been considered as physical means of protecting sovereignty of a state but in Westphalian model, security is constructed parallel to the protection of social order (Bislev, 2004: 282).

Link between security and good governance is vital since good governance enhances justice, equity and equality, thereby helps to prevent conflict and therefore, ensures peace coexistence and prosperity. There is this popular saying that, "People who feel secure and free, governed by the rule of law and not of men, are much less likely to go to war with each other - either within or across borders, than those who don't". it is clear that if government is responsive to the requirements of its people and is properly and justly utilizing resources whatever available to the benefit of its population will strengthen its bond with people and will lead to a strong

internal structure that will help promote and sustain a national security policy based on consensus and support of the masses. If not this condition, bad governance will lead to insecurity that will lead to instability and that would certainly affect national security of a country negatively. The improvements in good governance are directly linked to security and stability. (Fung & Wright, 2001: 6). If governance strategy of a particular government is the consolidation of political structures and the establishment of legitimate democratic institutions, power-sharing and promotion of human rights along with provision of such free and dynamic environment that is friendly for development and is corruption free then peace and prosperity will prevail.

Governance encompasses the states institutional and structure arrangement, decision making process and implementation capacity and the relationship between the governing apparatus and the governed, that is the people in terms of their standard of living (George – Genyi, 2013.) It is also the exercise of political power in the management of a nation's affair, (World Bank Report, 198). Good governance is also seen as system of government based on good leadership, respect for rule of law and due process, and the accountability of the political leadership to the electorate as well as transparency in the operation of government (Odock 2006). Good governance is characterized by high valued qualities such as accountability, transparency; rule of law, human and civic sensitivity, active participation, due process and good leadership. These governance qualities have the ability to provide structural development process of a country in other to survive. Such structures include schools, industries, military, electric power, courts, health care and clean water. The status of a state is reviewed as failed or collapsed when it exhibits inability to fulfill the functions of a state such as the sovereign authority, decision ++ making Institution and security generator for its population (Zartman, 1995).

National Security Challenges and Peace Education
National security is a top public issue today. It is a matter of national importance that should be of concern to all stakeholders in the Nigerian State. National security cannot be narrowed down to defense and military might alone. It is wider than that. It is this narrow conception of national security that forms the basis for the disproportionate budgetary allocation of funds as the case is, to "ensure the security of lives and property", however, to the neglect of other equally important sectors of the economy that bear directly or indirectly on national security. Such sectors as education, health, agriculture etc become poorly financed.

National security as the ability of a State to overcome any form of its challenges no matter what the challenge is (Iredia, 2011). National security is wider than military might, defense or law enforcement and pointed out other rather basic dimensions like employments, water supply and food security; therefore, national security policy would be of no use to the unemployed and hungry citizens if they constitute the majority of the citizens (Iredia, 2011).

National security is considered as the major challenges confronting the nation include political and electioneering conflicts, ethno-religious crises, ethnic militias, boundary disputes, cultism, criminality and organized crimes (Abubakar,2005). Nigeria is today

plagued with social disorder, insecurity, poverty, illiteracy, balance of payment deficit, poor health statistics, ethnic and religious conflicts, corruption, crime and criminality and political crises (Oshio,2009). These mean that we are very insecure in terms of human wellbeing. The problems, individually and collectively constitute threats to the peace, security and development of the country. Invariably, they have implications for the continuity and survival of the nation's democracy.

Iredia (2011) sees this conception as microscopic and quickly points out that national security cannot be equated to military might, defense or law enforcement alone. It goes beyond that to accommodate far more reaching issues. Elaborating more on this, Esiemokhai (2010) averred that in states where the interest of the ruling elite is put above that of the people, the police, the army and security formations are expected to defend the government, its personnel and its property. In a populated and poor country like ours, recent social unrests in various African countries no doubt have roots in the failure of the government policies to provide or manage the basic human physiological needs of their citizens. In recent times, Nigeria has witnessed increasing number of security challenges that constitute threats to the cooperate, existence of its citizens and to the maintenance and survival of its democratic political system. These security challenges are diverse and complex, ranging from political disagreements to criminal activities with alarming dimensions and consequences. The spate of target bombings by the Boko Haram sect is a big security challenge to the Federal government, the affected states and the entire nation.

Science Education: Panacea for Security Challenges in Nigeria
Education has earlier been defined as a process by which individuals are assisted formally through proper direction and guidance to develop their capacities for their own benefits and that of the society. It therefore follows, by a simple logic, that if a nation bequeaths the right type of education to its citizens, the citizens will not turn against their father- land. Daily Sun (2013) reported the former minister of Education, Professor Ragayyatu Rufai as having identified reform of the education system as the solution to the security challenges confronting the nation.

There is need for a total overhaul of the curriculum at all levels of education with a view to providing its recipients, broad based education in the development of the mind, soul and body; and in comprehending the environment and in the development of appropriate attitudes, skills, abilities and competences to co-exist with and contribute to the development of the society. This calls for a synergy between science education, liberal education, vocational and entrepreneurship education. A liberal education is one that frees the minds of its recipients from their preconceptions. It broadens the possibilities for greater understanding of others in our nation and around the world (Forum Futures, 2007).

Institutions should try to train future workers to help States' economies and to offer liberal education so as to produce informed citizens who can contribute to our democratic way of life. Every sovereign, independent state must train, sustain and nurture men and women to serve in its security and intelligence out fits. According to Esiemokhai (2005), in Europe and

America, these men and women are selected from the best and the brightest citizens, who are endowed with keen and subtle intellect. Recruitment into defense and military intelligence outfits needs scrupulous assessment of the recruit's educational background, intellectual sharpness, smartness and patriotism. Graduates with the best grades should be deployed not those who got ranks by the federal character formula. It increases the potential for individuals to perform as citizens. There are many examples of the public being misinformed and making bad decisions. However, without education, the situation would be vastly worse. It gives one the ability to critically examine an issue and articulate a reasoned position about it. Nurturing critical thinking is a key component of education.

The introduction of Vocational and Entrepreneurship programmes into the curriculum at the various levels of education in Nigeria is a welcome innovation that goes a long way to strengthening the popular liberal education. What is required by the government at various levels now is to adequately provide the needed human and material resources to make these programmes effective and functional. It is no longer news that liberal education alone has failed to equip recipients / youths with requisite skills and attitudes for leading a productive life. It is also no news that graduates of our institutions of higher learning have been populating the crime world due to their inability to secure meaningful employment upon graduation.

Science and Sustainable Human Development
Science is a specialized body of knowledge, involved with the study of nature, in which certain peculiar methods are used and the knowledge acquired presented in the form of concepts, theories and law (Ayo, 20003). Science is also defined as an attempt by human beings to organize their experiences about nature into meaningful systems of explanations. (Ogunniyi, 1986). Science has made tremendous impact in our world to such an extent that; modern man now tends to see science as almighty.

Science has made tremendous impact in our world to such an extent that; modern man now tends to see science as almighty. It has indeed triumphed over superstition and other forces (Ejechi, 1999). It is a widely held belief that, science differs from other disciplines in a number of features these features which are used in defining science include:
  i.   The methods (technical and integrated);
  ii.   The products (scientific facts, concepts, generalization and theories);
  iii. The process (basic and integrated);
  iv.   The ethics (objective, careful, observation and determination)

  1. Science provides meaning and explanations for events in nature, such as rainbow formation, thunderstones and hurricanes.
  2. Science provides meaningful and relevant knowledge of facts concepts, theories and laws of events situations and phenomena of nature.
  3. Science inculcates in individual's strict scientific procedural principles of careful observation, faithful recording and collation or reporting of data; detailed and unbiased analysis and accurate inferences on which sound conclusion can be based.

4. Science teaches a number of peculiar attitudes and behaviours which have their basis in the ethics of science, such as objectivity, humility and open mindedness.
5. Science is of importance in providing such as medicine, pharmacy and agriculture
6. Science is particularly importance in being of relevance to the provision of the primary necessities of life such as food, shelter and clothing.
7. Science is of relevance in meeting the environment needs of man
8. Science is relevance in many hobbies such as gardening, poultry and painting
9. Science provides education on a number of peculiar social problems of man such as alcoholism, drug abuse and sex abuse.
10. Science also contributed in a small measure to the development of human culture and on improvement of life of mankind through the following area: medical science, agriculture, engineering and transportation. (Ayo, 2003).

The importance of science to humanity cannot be over emphasis. It uses and application can be felt in all sphere of life both in governance and security. In Carl Sega quote: advances in medicine and agriculture have saved vastly lives than have been lost in all wars in history
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Utilizing Science Education to Enhance Good Governance and National Security
Science has tremendous influence on our world to such an extent that modern man tends to see science as almighty. The impacts of science to humanity have resulted in development in all sphere and endeavour. The developmental results of science have improved knowledge and help in better understanding of nature and proper application of it has better on our society tremendously. Education has thus been defining as a lifelong process by which an individual develops all his capabilities and become useful to himself, his fellow beings and thus develop society in which he lives (Taiwo, 2014).

Science is a developmental product of education aimed at individual, fellow being and society in which he belongs. Science education is the application of scientific methodology in education. The present era is commonly referred to as the age of technology. This is of course a clear indication that the economics, social and political growth of a nation or society is predicated on its scientific and technological advancement. Science has helped man in improving his environment and supplying has basic needs such as food health, shelter and clothing as well as other needs like recreation, transportation and communication. (Ejechi, 1999).

U7Governance and security are separate concepts, yet they have a relation. To be precise, it is governance that provokes and defines the nature of security. It is apparent that, there is deficit in the governance process but this can be corrected through full integration process of governance with the concepts of science. In Elbert Hubbard statement: *the church saves sinners, but science seeks to stop their manufacture.*

For a nation or society to develop, there is need for scientific development. Any nation that ignores it usefulness will be doom stagnation and retrogression. In frank press statement:
> *in a nation whose people depend on scientific progress for their health, economic gains, and national security, it is of the utmost importance that our students understand science.*

For any nation to develop scientifically there is need to educate the citizen to understand and appreciate science and apply its knowledge and technical know-how effectively and useful. There is need to integrate scientific knowledge in teaching pupils and our students from elementary stage to tertiary level to know and appreciate science.

In George porter statement:

> Should we force science down the threat of those that have no taste for it? It is our duty to drag them kicking and screaming into the twenty-first century? I am afraid that is it, the importance of science to man is enormous, governance and national security will be in deficit without full integration of science. Let me end it with Williams James note: man lives for science as well as bread

Statement of the Problem

Nigeria is currently experiencing enormous inter woven socio-economic, political, climate and security challenges than ever before. The challenges seem to have overwhelmed the government at all levels of governance and tend to make the nation a failed state. For instance, Nigeria is ranked 148 out of 163 nations in the 2019 Global Peace Index. The nation is one of the top five least peaceful countries in Africa (Sahara reporters, 2019 June, 16). This means that the nation is one of the least peaceful places on earth. Nigeria is the 144th least corrupt nation out of 180 according to the 2018 Corruption Perceptions Index reported by the Transparency International (2019, July 11). In addition, Nigeria is now the global capital of extreme poverty according to the World Poverty Clock (2019). In the area of good governance ranking, the nation is in 33rd position out of 54 African nations (Mo Ibrahim Foundation, 2018).

Literature abounds in the field of science education, most of which were empirical studies focusing on instructional strategies and students' performance in sciences. There are also, many non-empirical studies and position papers in the field of science education that focuses on how the potential of the discipline can be used to promote sustainable socioeconomic development in the nation. However, there seems to be relative dearth of literature addressing how science education can be used to address good governance, extreme poverty, sustainable socioeconomic development and insecurity in an integrated manner.

Purpose of the Study

This main purpose of this paper is to elucidate the potency of science education as a tool for enhancing good governance, sustainable national development and stem insecurity and extreme poverty in the nation.

Objectives of the Study

The specific objectives of this paper were as follows:
1. Examine the concepts of Science, Education, Science Education, Peace Education, Good Governance, and National Security;
2. Discuss the relationship between national security, and good governance and the need for peace education;

3. Examine the roles of science education as a panacea for security challenges and sustainable human development in Nigeria; and
4. X-ray how to utilize science education to enhance good governance and national security.

Conclusion

It is apparent that, there is deficit in the governance process which has resulted in insecurity, starvation, poverty unemployment, injustice, inequality and absence of ingredients of life. These deficits can have corrected through full integration process of science. The impacts of science to humanity have resulted in development in all spheres of life and endeavour. This is of course a clear indication that the economics, social and political growth of a nation or society is predicated on its scientific and technological advancement. Any nation that ignores it usefulness will be doom to stagnation and retrogression. Good governance foster and defines and nature of security of a nation. For any nation to develop scientifically, there is need to educate its citizens to understand and appreciate science and apply its knowledge and technical know-how effectively and useful, in other to correct the deficits of governance. There is also need for government to provide science friendly environment in our schools, technical and vocational centre, such as well-equipped laboratory. The importance of teachers training and retraining on the latest methods and technology cannot be left out, researches should be encourage and well-funded. There is need for government to provide other functional structures such as judiciary, military, and parliament. When the functional structure is integrated with science, there will be further enhanced. There are unrests of various shades and hues in different states of Nigeria, borne out of equally diverse causative factors. This paper has identified different national security challenges. All these threaten the very existence of the nation

There are security problems posed by natural disasters e.g. flooding, desertification etc; and from youth unemployment. We also have security threats from hunger and filthy environment which can lead to such deadly diseases as malaria, diarrhoea, typhoid and Lassa fever etc. There is no doubt that the security situation in the country calls for extraordinary measures to combat it. It will need a transformation in the way we think and in the way we look at one another. The education option comes in handy for the desired transformation. It may take a long time and huge resources to achieve but the end is certainly going to justify the means. Nigerians should perceive the education most especially science education option as a new way to reduce the sophistication of crimes and violence that are threatening national integration and security

Recommendations

Sequel to the revelations and implications of this discourse, the following recommendations become imperative.
1. Stakeholders in the education industry should establish robust synergy with the political class to guarantee effective utilization of science education for good governance, peaceful coexistence and sustainable development in the nation. In this regard adequate funding and regular review of science education curricular at all levels of the education ladder is crucial.

2. Regular revision and introduction of innovative curricula such as in Family Living Education, Science Education, Biology Education and Entrepreneurship Education will go a long way to bridging some of the existing gaps in Student acquisition of the right attitude to life and work.

3. There is need for a review of our Science Education curriculum to include critical subjects that are necessary for development of informed and well-rounded citizens. There is no doubt that a good knowledge of certain subjects such as our national history and civics will help in the development of more socially aware youths, truly literate and educated citizens who understand and appreciate the nation's peculiar challenges and can situate themselves within the search for solutions to the problems. Through the curriculum used in our schools, we need to develop citizens that are truly Nigerians at heart and care about the challenges facing our country.

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