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## The Place of Good Governance in Biology Education And The Challenges of Insecurity in Nigeria

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### Abstract

*Science is the study of the physical and natural world through observations and experiments, (Study.Com, 2021). Science is classified into so many branches of which biology is one. Biology however is a branch of science which studies life. Biology is a subject matter of great significance and concern to all. Biology assists in the promotion of economic development, elimination of poverty and in the introduction of social welfare. In spite of the wonderful things biology education can accomplish for the Nation, its improvement in Nigeria seems thin. In order to address the issue of the place of good governance in biology education and challenges of insecurity in Nigeria the paper examined the following subheadings with the view to fathom a way forward for the study of biology education: The concept of biology education, the significance of biology education, the impact of good governance in biology education, the areas of biology education mostly affected by lack of good governance and good governance and the challenge of insecurity in Nigeria. Suggestions for improvement were proffered for evaluation for all stakeholders.*

**Keywords:** Biology, Biology Education, Good Governance, Science, Challenge of Insecurity.

Education is the most valuable key to success. Valuable education prepares people for life and work and creates a bridge for a secured future. The real education gives decision-making and problem-solving skills and a clear career path. People who have a worthy education, often have high-ranked positions in their career and live a satisfactory life, (Kristen Hutcherson, 2019). Science education has its impact in all sectors of the economy. Science can be thought of as both a body of knowledge and the process of acquiring new knowledge. Both knowledge and process are interdependent, since the knowledge acquired depends on the questions asked and the methods used to find the answers, (Australlian Academy of Science, 2017). Science is classified into so many branches of which biology is one. Biology is a branch of science which studies life. Biology education is therefore the act of teaching and learning in order to inculcate or transfer the knowledge of biology to the students (Okenyi, 2012).

Nigeria as a sovereign nation has remained a developing nation for over sixty-one years of independence because of lack of operational or functional biology education among many reasons. The country is endowed with abundant natural and human resources which are sufficient for operational biology education (Ogundiya, 2010). However, the lack of good governance had been the greatest enemy of operational biology education in the country. The use of 'operational' is important because to a layman government is funding the teaching and learning of biology in Nigeria schools. However, the questions are: How operational is this biology education?, What can the graduates of biology education do? Can we compare these graduates with graduates in other countries?. The operational biology education stems from the answers to these questions.

Governance has been defined by United Nations Educational, scientific and Cultural Organisations (UNESCO) international Bureau of Education (2021) "to refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participate. While Good Governance is an approach to government that is committed to creating a system founded in justice and peace that protects individuals human rights and civil liberties. The basic features of good governance includes the conduct of a comprehensive management, wherein all the critical stakeholders are allowed to have a say in the decision-making process, (Odo, 2015). According to the United Nations, Good Governance is measured by the eight factors of Participation, Rule of Law, Transparency, Responsiveness, Consensus Oriented, Equity and Inclusiveness, Effectiveness and Efficiency, and Accountability.

- Participation requires that all groups, particularly those most vulnerable, have direct or representative access to the systems of government. This manifests as a strong civil society and citizens with the freedom of association and expression.
- Rule of Law is exemplified by impartial legal systems that protect human rights and civil liberties of all citizens, particularly the minorities. This is indicated by an independent judicial branch and a police force free from corruption.
- Transparency means that citizens understand and have access to the means and manner in which decisions are made, especially if they are directly affected by such decisions. This information must be provided in an understandable and accessible format, typically translated through the media.
- Responsiveness simply means that institutions respond to their stakeholders within a reasonable time frame.
- Consensus Oriented is demonstrated by an agenda that seeks to mediate between the many different needs, perspectives, and expectations of a diverse citizenry. Decisions should be made in a manner that reflects a deep understanding of the historical, cultural, and social context of the community.
- Equity and Inclusiveness depends on ensuring that all the members of a community feel included and empowered to improve or maintain their well being, especially those individuals and groups that are the most vulnerable.
- Effectiveness and Efficiency is developed through the sustainable use of resources to meet the needs of a society. Sustainability refers to both ensuring social

investments carry through and natural resources are maintained for future generations.

- Accountability refers to institutions being ultimately accountable to the people and one another. This includes government agencies, civil society, and the private sector all being accountable to one another as well, (Creative Learning, 2019).

Good governance by implication is the government that can carry out the activities mentioned above for the good of all her citizens. Good governance is inherent to economic growth, the eradication of poverty and hunger, quality education and sustainable development. The education that is not only in theory but the one that can transfer theory to practice is what is needed in this 21st century. This type of education required the pupils and the students to have an "authentic learning experience". In simple terms, authentic learning is learning by doing. It is active learning, where students are not passive. The role of the teacher in such learning is to guide and not to control the learning. This is where authentic learning come to play. Research studies show that students who had an authentic learning experience in biology are those that have operational biology education. These students can face life challenges with their biology education experience. Such students are often job provider, not job seeker; they do not rely on the government for job but are critical thinkers who create one for themselves. The government has an important role to play in providing students with this type of learning in biology education, hence the clarion call for good governance and adequate confrontation of insecurity in Nigeria.

### **Concept of Biology Education**

Biology is the study of the structure, function, heredity, and evolution of all living things-micro-organisms, fungi, plants, and animals. In other words, Biology is the scientific study of life, (Urry, Lisa, Cain, Michael, Wasserman, Steven, Minorsky, Peter, Reece & Jane, 2017). It deals with the study of many varieties of live. It is a natural science with a broad scope but has several unifying theme that tie it together as a single, coherent field, (Hillis, David, Heller, Craig, Hacker, Sally, Laskowski, Marta, Sadava, & David, 2020). For instance, all organisms are made up of cells that process hereditary information encoded in genes, which can be transmitted to future generations. Another major theme is evolution, which explains the unity and diversity of life, (Freeman, Scott, Quillin, Kim, Allison, Lizabeth, Black, Michael, Podgorski, Greg; Taylor, Emily, Carmichael and Jeff, 2017). Finally, all organisms are able to regulate their own internal environments, (Davies, Rieper and Tuszynski, 2013). However, despite the broad scope of biology, there are certain general and unifying concepts within it that govern all the studies and researches that consolidate it into simple and coherent field. Hence, there are multiple sub-disciplines within biology, each defined by the nature of their research questions and the tools that they use, (Howell Elizabeth, 2014). In general, biologists recognize the cell as the basic unit of life, as well as the basic unit of heredity, and evolution as the engine that propel the synthesis and creation of new species. Life on Earth, which emerged more than 3.7 billion years ago, is immensely diverse (Pearce, Ben, Tupper, Andrew, Pudritz and Ralph, 2018).

The central organizing concept in biology is that life changes and develops through evolution, which is the change in heritable characteristics of populations over

successive generations, (Washington, D.C.: National Academies of Sciences, Engineering, and Medicine, 2016). Evolution is now used to explain the great variations of life on Earth. Biology Education therefore is education in biology which is generally aims at training individual to understand himself/herself, the parts of his/her body and how the body part functions. The application of principles of education in teaching and learning of biology is known as biology education. It is the art of teaching and training in order to inculcate or transfer the knowledge of biology to students (Okenyi, 2012). For this can afford them the opportunity of contributing meaningfully to the development of the society.

### **The Significance of Biology Education**

The study of biology has battalion of significances. Discussed below are some general significance of biology education:

- Studying biology allows health care workers to understand the living systems of the body and to apply the knowledge in direct ways to recover and maintain the physical health of both animals and human patients.
- Biology education helps to increase understanding of living systems and allow people to consider the system in relationship to self and other organisms in the natural environment.
- Biology education in Nigeria prepares individual for a career, working in either an educational institution or an industry in which the individual can be directly involved in the research and development of drugs, food related items and biotechnology.
- Through biology education one can also become qualified to work for the government in managing an environmental research of animals, river system or biological waste.
- Biology education provides a comprehensive education in biology that stressed scientific reasoning and problem-solving across the spectrum of discipline within biology. It will enrich students with opportunities for alternative education in the area of biology through undergraduate research, internships and studying abroad.

Specifically, the study of biology education does the following:

- It helps to promote the individuals' understanding of man's relationship with the environment as well as knowledge of the interrelationship existing between living and non-living things that abound in the environment.
- It helps to prepare the individual for vocational selection such as in Pharmacy, Medicine, Teaching, Agriculture, etc.
- It helps to increase the individual's interest and aesthetic appreciation of nature.
- It helps to stimulate the individual's interest in biologically-based hobbies such as growing flowers, collecting insects, etc thereby encouraging leisure activities for individual enjoyment.
- It helps to impart factual knowledge and stimulate scientific reflective thinking so as to produce an informed individual.
- It helps to inculcate in the individual scientific skills and attitudes in his approach to personal and social problems.
- It enables us to understand the importance of plants in human survival.

➤ It also enables us to significantly identify the usefulness of animals to man.

According to Society of Biology (2014), biology education offers pupils/students the following benefits:

- Demonstrates to pupils that they are part of the diversity of living things.
- Development of pupils' personal values and sense of responsibility with regard to living organisms and their environment.
- Offers an opportunity for informal learning in and about their environment.
- Is intrinsic to pupils' understanding and awareness of decisions related to health and wellbeing – such as healthy eating, personal hygiene, sex education, substance use and abuse.
- Enables pupil to develop an understanding of how their bodies function and the changes they experience (including puberty).
- Provides accessible contexts in which concepts from other areas of science might be experienced and applied.
- Offers exposure to concepts not encountered in the other sciences – such as growth and development, diversity and change, interdependence and classification, natural selection and evolution.

Having examined the significance of biology education, it's obvious that good governance is essential for the acquisition of comprehensive and standard facilities for the systematic study of biology. Additionally, the issue of insecurity should be properly tackled.

### **The Place of Good Governance in Biology Education in Nigeria**

As mentioned earlier, good governance is the rightly exercising of authority, the ability to problem-solving and conflict resolution, the ability to manage resources efficiently for development, and high level of responsiveness to the needs and the interest of the citizens, (Otoghile, Igbafe, & Aghontaen, 2014). In the context of this study, good governance by implication is when the government is able to create a favourable environment for the study of biology in order for its citizens to enjoy all the benefits of biology education stated above. Explaining how good governance could help to achieve functional science and technology education in Nigeria, the governor of Enugu State, Ifeanyi Ugwuanyi, (2018) said that it would impact adequate teacher education and training, provision of the necessary and relevant infrastructure, adequate funding, coordinated and adequate training of students and development of functional curricula and programme structure. He said: "The implication of this is that there cannot be a functional biology education in the absence of good governance".

There has not been good governance in Nigeria in the past 61 years. The worst has been from 1999 when the country changed from the military dictatorship to democratic rule. There is that belief that good governance thrives in a democratic government. According to Odo (2015), good governance thrives in a democratic setting. The author asserted that where there is no democratic government there can be no good governance. This author's submission is not true for Nigeria as a self - governing nation. There are many indicants to reveal the lack of good governance in Nigeria which is discussed in this paper. Many of these lamed our education and affected biology education badly more

than any disciplines.

The fundamental cause of bad governance in Nigeria is the absence of visionary leader. Most of Nigeria leaders since the return of democracy in 1999 came into power to pursue personal, political, ethnic and religious ambitions to the detriment of providing fund for the educational institutions. Most of the developmental challenges Nigerian had today is attributed to these leaders who lacked good vision for the nation (Odo, 2015). He further revealed that these leaders lacked commitment for true nationhood. The leaders allowed their personal ambition and ethnic inclinations as well as religious persuasions to overtake national considerations. Good governance requires responsible and responsive political leaders at all level, (Belfut, Jurji, & Olusegun, 2012). These leaders see their positions as a means for illegal wealth accumulation to the detriment of the common good of the nation (Otoghile, Igbafe, & Aghontaen, 2014). When democracy is abused, good governance become an illusion (Arowolo and Aluko, 2012). The authors argue further that governance is good when it is not discriminatory, and every member of the society is treated according to the established laws.

Consequent upon the act of impunity seen in our political leaders, the heads of the executive, legislature, the judiciary, every other leader in public and private institutions became lawless. This act of lawlessness displayed by the leaders has it's tone on the educational sector especially on biology education. Adeosun (2012) state's that the Nigeria legislators have failed to utilize its enormous power to ease the economic and social hardship confronting the people of the nation. According to Odisu (2016), Nigerians are increasingly losing hope and confidence in the nation's judiciary due to the unethical conduct of some judicial rogues. As a result of the lapses in the three arms of the Nigeria government, corruption is inevitable. Corruption is the abuse of public office for private gain, and it is an aspect of bad governance (Ogundiya, 2010). The author asserted that corruption is rampant at all levels of government, crippling basic health and education services and other social infrastructures. Good governance cannot be possible in a nation where corruption is gaining a bridgehead. The insecurity, unemployment, kidnapping, poverty, divorce, hunger, deprivation, injustice and others, are some of the problem corruption is breeding in Nigeria. Given the above review as an evidence of lack of good governance in Nigeria, it's appropriate at this junction to examine the major areas of biology education that is mostly affected by lack of good governance.

### **Areas of Biology Education that is Mostly Affected by Lack of Good Governance**

The lack of good governance in Nigeria affects the educational system wholisitically. However, the paper highlights three vital areas where biology education is highly affected. These are: Educational facilities; A standardized teacher education programme and Research.

### **Educational Facilities**

The basic features/facilities in the Nigerian educational institutions are in a terrible condition. It is painful and unhealthy to know that students are learning science under the tree in some part of the country today. This is a reflection of the poor budgetary allocation to education by the government. Good governance requires that enough money be made available for all educational programmes. Over the years, funding has not kept pace with the expansion of the system. For example, the federal

government invested 11.13% in 1999, 5.80% in 2002, 7.0% in 2018, 7.02% in 2019, 6.7% in 2020 and 5.6% in 2021, which falls below the United Nations recommended minimum threshold of 26%, (Azeezat, 2017, Abdussalam, 2018, Abdussalam, 2019 & Alfred, 2021). Government should endeavour to improve on funding education if she desires to keep pace with the global market.

### **A Standardized Teacher Education Programme**

Cambridge Professional Development Qualifications (2014) recognize the importance of teacher education and professional development by stating that, the most important factor in the quality of students learning is the quality of teachers and school leadership. Teachers and leaders need to develop their professional thinking and practice continuously throughout their career. This is because the teaching profession requires specialized knowledge to equip teachers with the basic mental skills on competitiveness. This knowledge can only be acquired through specialized intellectual study and training. Thus, adequate attention should be given to a more robust teacher preparatory programme by various teacher education institutions. Conferences, seminars, and workshops should be organised for teachers in order for them to acquire new knowledge.

### **Research**

Research in the Nigerian universities have been rendered useless because of insufficient fund. The government has money to build personal houses for the government officials but no money for research. Most educational research institutes are mere names.

Corruption of our government officials had killed and buried research in the educational system, especially biology education for decades. Biology education is evolving all over the world which should include Nigeria. However, in Nigeria, there is no new thing in biology education; it remains as it was for decades ago. Teachers and Lecturers are not innovative they read and teach what others discovered and invented while themselves do not bring new knowledge because the government had not encouraged credible biology education, as a result of corruption.

Having examined, specific areas of biology education mostly affected by lack of good governance, its proper to examine the relationship between good governance and insecurity and its impact on biology education.

### **Good Governance and the Challenge of Insecurity in Nigeria**

A superficial look at the various conflicts in Nigeria today reveals an ugly trend which could be calamitous for the country if not chastened and this fundamentally is the lack of good governance. Security means safety to the average person or protection from harm and risk. Onifade (2013) see security as a situation that emerges from the establishment of ways of protecting individuals, information, and properties from hostile people, influences, and behavior. This simply connotes “the absence of threat to life, property and socio-economic well-being of the people.” (Arisi and Regina, 2013). While Insecurity is just the opposite of what we have as security. Insecurity like security is often used in a number of ways. Many people would take it to mean lack of safety or the existence of danger; hazard; uncertainty; lack of trust; doubtful; inadequately guarded or protected; lack of stability; disturbance; lack of protection and unsafe (Achumba 2013).

Insecurity will make you lose trust, be frightened, unsettled, oppressed, lose focus, and be devastated and lose your humanity.

### **Causes of Insecurity in Nigeria The Peril of Joblessness and Poverty**

Joblessness is defined as when people are not engaged in meaningful work and are lacking the basic needs of life. Every year, tertiary institutions graduate many students including students from biology education, who are unfortunately thrown into the labour market with no hope for job opportunities in sight. Many become frustrated in an effort to keep mind and body together and engage in violent and criminal acts such as lucrative kidnapping, militancy, and armed robbery. Nwagbosa (2012) believes that past governments have failed to put in place actions that will reduce unemployment and poverty rates, which have been the major causes of insecurity in Nigeria.

### **Upper Class Exploitation of Ethnic Affiliations and Religious Distinctiveness.**

It is worth emphasizing that the country's diverse ethnic make-up is not itself a cause of insecurity in Nigeria; however, political and religious leaders across the nation sometimes use ethnic sentiments to achieve their selfish ambitions. The upper class exploit people's minds to stir up mistrust and resentment among different ethnic groups and among the country's major religions that causes Nigeria's insecurity. Achumba, (2013), asserted that the control of scarce resources, fuel, land, economies, traditional and political offices resulted in mass killings and property destruction in various parts of the country.

### **Unfit Government and Pathetic Leadership**

The main function of government all over the world is the provision of basic services such as water, electricity, good road network, quality education, and general infrastructure. Ironically, these basic things are not there in Nigeria and the people, in general, are frustrated and demoralized. Demoralization and anger logically provide a strong fertile ground for aggression and general insecurity.

### **Deprivation**

Deprivation is largely responsible for government failure and systemic infrastructure collapse, resulting in large-scale insecurity in Nigeria. The state of insecurity in Nigeria is unquestionably a result of poor government, traceable to widespread corruption. Corruption is evil not because money and profits change hands in an unequal way, and not because of participants' motives, but because it privatise important facets of public life, bypassing representation, discussion and choice processes. Unemployment and deprivation are the two main causes of Nigeria's insecurity.

### **Rickety Security Apparatus**

Nigeria's security system is seen as very frail in both personnel and equipment. Security officers are not given adequate training and they are poorly remunerated. As a result, the requisite expertise is not available to meet modern security challenges. The contribution of the security personnel to the Nigerian project of ensuring general safety

is equally of serious concern. This weak security system can be due to a number of factors, most especially to lack of good governance. Nigeria is largely under police jurisdiction and this partially explains the Nigerian Police Force's failure to effectively tackle the country's crimes, corruption, and insecurity. Nigeria is grossly under-policed and this perhaps explains the police's inability to effectively take on security challenges.

### **Leaky Border**

The country's unstable frontiers, where human movements are essentially untracked, have led to Nigeria's high level of insecurity. There is an unregulated inflow of Small Arms and Light Weapons into the country as a result of the porous borders which has enabled militancy and crime in Nigeria. Edeko (2011) has reported that Nigeria hosts over 70% of about 8million illegal weapons that have been used to create security crisis. In addition, the leaky condition of the borders has contributed to the uncontrollable influx of migrants, predominantly young people, from nearby countries such as the Republic of Niger, Chad and the Republic of Benin accountable for some of the insecurity promoting criminal activities in Nigeria, (Adeola and Olayemi, 2012).

### **The Way Forward**

For proper repositioning of biology education in Nigeria, the following should be given attention by the government and associated stakeholders.

- Every government should give the educational system a special attention in its national agenda. More money should be allocated to biology education for research, teacher education and infrastructure in all our institutions.
- We should all join force and fight corruption until it is completely blotted out in all sphere of our country.
- The present biology education curriculum should be changed to accommodate the needs of our youth. The curriculum should accommodate the authentic learning experience where the students control their learning by themselves. This will make them functional after graduation and reduce the rate at which graduates depend on the government for jobs, and reduce crime and insecurity.
- Anyone who desires to be a leader in the country should determine to rule transparently and by example. Such leaders should be ready to be a father to all ethnic groups and religions.
- Teacher education is very important, and the government should accord it the desired recognition.
- Every institution (University, Polytechnics, Colleges of Educations, and others) should establish a Youth Scientific Collaborative Programme (YSCP) with the developed countries of the world. The aim of this programme should be to send all youths who graduate in biology education with an outstanding result to go for practical experience for a given period.
- The government should make fund available for the establishment of the youth who have undergone the suggested programme by buying equipment for them to start - off after the programme. This will definitely reduce insecurity.

- The government should encourage the youths by Empowering those of them who are innovative and willing to establish a venture that will provide them with a regular means of income.

### **Conclusion**

From the above discussion it's clear that good governance is an ideal which is difficult to achieve in its totality. Very few countries and societies have come close to achieving good governance in its totality. However, to ensure sustainable biology education development and the elimination of insecurity, actions must be taken to work towards this ideal with the aim of making it a reality.

### **Suggestions for Improvement**

Having assessed the challenges of insecurity as a result of lack of good governance on biology education in Nigeria, the writer is of the opinion that such challenges can be resolved if the following suggestions are considered for implementation by the government and associated stakeholders.

- I. Government should increase funding for the biology sector. Various agencies should donate laboratory equipment to both secondary schools and tertiary institutions offering biology as a course.
- II. The government should improve its infrastructure in the educational system.
- III. Biology teaching should be adjusted to employment needs and entrepreneurship. This entails relationship with the employment market, local needs, community participation and development objectives.
- IV. Biology Educators should be sponsored to seminars, conferences, workshops etc. This will enhanced effectiveness and Efficiency.
- V. There is need to improve effectiveness of security operatives through training and retraining, and provision of modern equipment and enhance their incentive.
- VI. Biology education should be perceived as a global issue. This can be achieved by restructuring and reforming government policies, international co-operation and biology education institutions.
- VII. To overcome the problem of insecurity in Nigeria, it is important that political actors and institutions embraced the principles of true democracy and allow open, free and fair competition.
- VIII. The ongoing constitutional review should be taken seriously and it should stipulate life imprisonment for any corrupt officer whether in government or private establishment.
- IX. Government should encourage good governance, openness, accountability through the use of print and digital media, and inform the public through conferences, seminars, and non-governmental agencies.

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