THE PROBLEMS AND PROSPECTS OF BIOLOGY EDUCATION DEVELOPMENT IN NIGERIA BEYOND 2020

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Abstract

Despite all the great things biology education can accomplish in Nigeria, it’s development beyond 2020 seems slim. This is due to some fundamental problems which the paper discussed under the following headings: security, corruption, teacher, lack of proper curriculum development and inadequate fund. The paper highlights the objectives of biology education and prospects of biology education development in Nigeria. Few recommendations on how to achieve biology education development in Nigeria were discussed. In conclusion, the government should support people in understanding and acting to transform the social, cultural, political and economic structures which affect their lives and the lives of others at personal, community, national and international levels. For this will help Nigeria to achieve biology education development beyond 2020. The paper focused on the problems and prospects of biology education development in Nigeria beyond 2020.

Biology is the study of natural phenomena and environment which results from curiosity of man (Nlewem, 2005). Biology is also a branch of science which has been structured to equip the students with the knowledge of relevant concepts and scientific skills (Onyegegbu, 2002). Biology is all the knowledge of living things that has come to us from the past. It is therefore the science of life. Biology education is the act of teaching and learning in order to inculcate or transfer the knowledge of biology to the student (Okenyi, 2012). Educating people in science especially biology has been widely acknowledged as a way of promoting economic development, eliminating poverty and introducing social welfare (Nwagbo, 2005).

Development is the act of improving by expanding or enlarging or refining a situation or condition of a particular thing. (Tunde, 2011). It is a process in which something passes by degrees to a different stage. However, to develop biology education in Nigeria, the government should improve the teaching and learning of biology by providing adequate laboratory/teaching materials, qualified biology teachers, good biology classroom environment, use of good teaching methods by the biology teachers, a proper curriculum standard for teaching biology and provision of fund to the schools. Developing countries like Nigeria, Ghana and others have made efforts to generalize the provision of biology education at both secondary and higher institution levels. The present teaching and learning in biology classroom in Nigeria seem inadequate and also the level of biology teacher competence needs to be raised to the level that will allow teachers teach students using varied instructional methods and with a focus on understanding, rather than lecture transmitting knowledge with the consequent student rote learning (Ameh, 1991).

It is therefore necessary for all teacher education programmes which aims at developing good teaching skills in biology teachers so as to enhance the development of biology education in Nigeria beyond 2020. Education development in biology simply means improvement in the teaching and learning of biology. It is an educational process in biology which is aimed at increasing awareness and understanding of the rapidly changing, interdependent and unequal world in which we live (Mcqewu, 2002). It is therefore necessary for the government to assist in the development of biology education so as to support people in understanding and acting to transform the social, cultural, political and economic structures which affect their lives and the lives of others at personal, community, national, and international levels.

Biology education is very important for any growing economy like that of Nigeria. About 70 percent graduate of biology education are self employed and employers of labour (Okenyi, 2012). Many graduate of biology education also own schools of their own where people work and earn their...
living while some are into fishery business. These contributions of biology to the development of the Nigerian’s economy will be highly improved through analyzing the problems and prospects of biology education in Nigeria. This paper intends to focus on the problems and prospects inherent in the achievement of biology education development in Nigeria beyond 2020.

Meaning of Biology Education
Biology as a branch of science plays a vital role in providing knowledge of relevant concepts, scientific skills, environment and natural phenomena (Nlewem, 2012). It helps to develop science process skills and scientific attitude. Education on the other hand is a designed process for training an individual by which knowledge is acquired (Eya, 2010). He opined that it is a vital developmental process which is directly related to the effectiveness of trained manpower. Biology Education is a process of imparting knowledge, skills and attitudes in biology to a learners at any level. It gives the learner a sound academic knowledge, skills and ample opportunity to apply this knowledge. According to Okenyi (2012), Biology Education is an application of principles of education in teaching and learning of biology. It is also the act of teaching and training in order to inculcate or transfer the knowledge of biology to students.

Objectives of Biology Education
The study of biology can have a multitude of aims and objectives largely; it is studied to allow a person to enter a specific field of employment. Other aims for studying biology are intellectual, ethical and pragmatic: to increase knowledge about all types of organisms, to encourage greater benevolence in the relationship between humans and the natural environment and to implement biological skills into various technologies or management techniques (Heather, 2007). The study of biology aims to increase understanding of living systems and to allow one to consider the systems in relationship to the self and other organisms in the natural environment. Biology has many applications, in the natural environment. Studying biology however 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 animal and human patients.

The major objectives of biology education in Nigeria are
1. To provide the youth with sound knowledge of the basic principles and techniques of biology.
2. To produce knowledgeable, highly motivated, professional and effective teachers of biology who will be able to develop in students an appreciation and understanding of biological processes and principles.
3. To develop confidence in biology teachers and enhance the ability to adopt to the changing situation in science and the technological oriented society.
4. To view biology as a process of inquiry into the living world.
5. To analyze the activities of living things in their environment.
6. To demonstrate practical skills in handling scientific apparatus.
7. To demonstrate excellence and professional competence in teaching secondary school biology.
8. To include positive scientific attitudes and value in the society and promote positive disposition towards biology, science and the scientific enterprise.
9. To apply concepts and methods acquired in new areas of study and in everyday situation (minimum standard for NCE teachers, 2008).

To achieve the above listed objectives which are aimed at the development of biology education and acquisition of knowledge for an improvement in biology education in Nigeria beyond 2020, there is need to assess the problems and prospects of biology education development in Nigeria.
Problem and Prospects of Biology Education Development in Nigeria

Despite all the things biology can accomplish in the nation’s development, there are many problems militating against it especially in Nigeria. These problems can be viewed under the following headings.

1. **Security**: Security issue in Nigeria has been worrisome for more than two years now because of the insurgence of the Boko Haram sector due to religious motivation. People in Nigeria live in fear of the uncertainty of death from bomb explosions or gunshots from the terrorists or from armed robbers and many a time from kidnappers. The lives of nationals living in Nigeria are in perpetual danger due to kidnapping (Aina, 2010). Lecturers and students don’t know their fate every day until they retire to bed at night because of armed robbers. The recent attack on a northern university where student and lecturers were cold bloodedly murdered still remains fresh in the academic arena. Science infrastructures built with huge amounts of money for schools in which Biology departments in such schools are part of its beneficiaries were also destroyed while gas and oil installations are vandalized too. The resultant effects of these are on education. Many parents have lost their jobs and the effect is on the children. These children could not complete their education and eventually had to drop out of schools. Majority of these dropout students are very brilliant scholars who could have become renowned Biology educators the country would be proud of.

2. **Corruption**: Corruption has eaten deep into the Nigerian system and it is manifesting in every sector of education including biology. In Nigeria today it is not what you know but whom you know. Appointment and admission into higher institutions of learning are no longer based on merit but on whom you know and the amount you can offer for such job or space for admission. Purchases of biology equipment for schools are no longer done transparently since it is either the chief executive of the school or many of his or her relation will do the supply. In this case they neither supply according to the required specification nor the required quantity. In most cases they don’t even supply anything thereby living most of the biology laboratories empty or with fake and obsolete biology equipment which are useful for nothing but for mere demonstration. Money meant for staff training are diverted to personal account while selection of those who benefit in staff training is on whom you know syndrome. All these will bounce back on the quality of biology educators Nigeria produces. Employment is also no longer based on merit; those who are qualified for teaching biology are not given employment because they don’t have godfathers in the government. Teaching appointment is done based on nepotism and favouritism. This is affecting the development of biology education in Nigeria.

3. **Teacher**: Biology teachers are key factors to be considered when talking about the development of biology education in any nation. There are shortages of qualified biology teachers in Nigerian schools, and the so called biology teachers are not professionally qualified. They may have the knowledge of the subject but lack the method. Aina, (2009) on his study of challenges and prospects of science teaching affirmed that there are unqualified science teachers in the country. These teachers for many years have not upgraded their certificates by going for in-service training, this affects their output and it is a problem to the development of science education of which biology is one of them.

4. **Lack of Proper Curriculum Developed**: In the development of biology education in Nigeria, the relevance of biology education curricular cannot be ignored. Biology education has not been given an appropriate place in the Nigerian school curriculum. Even though, bulk of what is taught in schools is imported from other developed countries (Obiaga, 1997). It is therefore necessary to have a curriculum reform to enhance biology education development in Nigeria.

5. **Inadequate Fund**: There is no adequate fund for the provision of conducive and enabling environment to facilitate the effective teaching and learning of biology process as well as research. Tertiary institutions are statutorily expected to be engaged in research to enrich the process of social development and not to be engaged in teaching only (Ebong, 2008). These expectations are not
adequately met due to inadequate funds as research in biology requires huge investments and capital which ordinary individuals cannot cope with.

The Prospects of Biology Education Development in Nigeria

The prospect of biology education development beyond 2020 is very slim. Poor governance is significantly showing progress towards biology education and undermining the quality of biology education services. Despite the problems or challenges towards the development of biology education in Nigeria, some prospects are reviewed under the following headings.

(1) **Health care and Education**
Biology has many applications, both in the natural environment and the environment of health and 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 annual and human patients. Biology education, if develops beyond 2020 will help the biology educators to teach the study of life to future generations.

(2) **Understanding living system and critical thinking**
Biology education development will help to increase understanding of living systems and to allow people to consider the system in relationship to self and other organisms in the natural environment.

(3) **Employment**
Biology education development in Nigeria will prepare the Nigeria for a career working in either an educational institution or an industry in which you 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. If biology education is well developed in Nigeria, people will also be able to learn many of the skills needed to succeed in business like fishery business (Augustana, 1999).

(4) **Program Goals**
Biology education development will provide a comprehensive education in biology that stresses scientific reasoning and problem solving across the spectrum of disciplines within biology. It will enrich students with opportunities for alternative education in the area of biology through undergraduate research, internships and studying abroad.
Learning aspect

Development of biology education will help the learner to be able to read, understand, and critically interpret the primary biological literature in his/her area of interest and to apply basic ethical principles to basic and applied biological/biomedical practice and will understand the role of biology/biomedical science and practitioners in society.

Conclusion

For the prospects of biology education development listed above to be met, there is need to assess the problems of biology education in Nigeria, bearing in mind the stated problems like insecurity, corruption, lack of funds, teachers altitude and method of teaching, poor curriculum standard and the recommendations made below.

Recommendations

Having assessed the problems and prospects of biology education development in Nigeria, the writer is of the opinion that such problems can resolved if the following recommendations are considered for implementation.

1. Biology education curriculum and methodology should be refocused in Nigeria. This involves reformation and restructuring of biology education in line with the ethics of production and training for self-reliance.

2. There should be a restructuring of the minds of the Nigerian youths through education for a purposeful and determined effort aimed at biology education development. Indentifying the problems of Biology Education in the light of the development of biology education in Nigeria is the starting point of the restructuring process.

3. Biology students should have the ability to communicate, work in teams and adapt to changes. This is to enable the students to be innovative, creative and be familiar with the new technology.

4. Biology teaching should be adjusted to employment needs and entrepreneurship. This entails relationship with the employment market, local needs, community participation and development objectives.

5. Biology Educators should be sponsored for seminars, conferences at the appropriate times for this will motivate them.

6. Government should increase funding for the biology sector. Various agencies should donate laboratory techniques to both secondary schools and tertiary institutions offering biology as a course.

7. 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. For this is the principle for developing strategy in support of biology education beyond 2020.

8. Finally on corruption, the ongoing constitution review must be taken serious and it should stipulate a life imprisonment for any corrupt person weather in government establishment or private establishment, corruption is corruption once it is established, the individual should be sent to life imprisonment. Moreso, government should create more jobs. Corruption and Boko haram insurgency must be shun at everywhere they rear their heads in the country and biology teachers must be ready for a change in their methods of teaching and attitude to work.
References


