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ON

## ENVIROMENTAL EDUCATION AND THE SOCIETY: THE ROLE OF BIOLOGY TEACHER THROUGH THE CURRICULUM.

### Abstract

*Societal problems are not only based on economic and political issues nowadays but it involves environmental cases. The ever increasing pollution, flooding, climate change, and desertification require urgent attention. Therefore, there is the need for creating awareness in the society through education. Biology is one of the few subjects in the curriculum which exposes the learners to their environment. The Biology teachers as custodians of Biological knowledge and key actors in curriculum implementation have important role to play in creating awareness for environmental literate society. However, this research has therefore, reviewed some studies and highlighted importance of the environment in the society and the role of Biology and Biology teachers. It is suggested that Biology teachers should intensify efforts towards teaching topics related to the environment and environmental issue with a view to creating further awareness about the environment.*

### Introduction

The emphasis of every society in respect of its environment is for the general populace and the generations to be enlightened. Pressure on the environment due to the climate change – higher temperature, shifting seasons, more frequent and weather events such as floods and

droughts becomes even more frightening. The intergovernmental panel for climate change (2007) noted that some African countries could face reduction in yield of up to 50% by 2020 if they fail to adapt to the changing climate. The environmental education aims to create an environmentally literate citizenry, poised and motivated to take action on pressing environmental issues from climate change to habitat conservation and from endangered species to water scarcity. Environmental education is strategy by which people can make proactive, informed decisions that honour ecological, economic and social integrity. Environmental education allows everyone to work toward a better quality of life. The purpose is to regenerate man's interest in preservation, conservation and improvement before it is too late and reaches the point of no return.

Biology is one of the few subjects in the curriculum that exposes the learner to some issues related to his environment, creating awareness about the environment. In every education system, teacher is the chief implementer of the curriculum. Biology teachers therefore, as custodian of biological knowledge, used different techniques/methods required to transmit the knowledge of environmental studies to the learner as contained in the curriculum. They also provide him with some skills for tackling environmental problems. Biology teacher therefore has a huge role to play in creating awareness in the environment.

### **Conceptual Framework**

Environment is a broad based concept and refers to all or part of an objects surrounding. It becomes everything that surrounds man hence, everything that is used by man including man himself (Bosah, 2013). Environmental education has been perceived differently by various educationists. They differ in its objectives, the kind of activities that are used to achieve the objectives and resources to attain these ends. It is a process to promote awareness and understanding of the environment, its relationship with man and his activities. It is also aimed at developing responsible actions necessary for preservation, conservation and improvement of the environment and its components (UNESCO, 1987).

The importance of teacher in the success of any educational program has been well articulated in the National Policy on Education for the Federal Republic of Nigeria (NPE, 2004). The ultimate goal of any instructional activities is to facilitate effective teaching and learning. The teacher is responsible translation and implementation of educational policies, curriculum and instructional materials package. It is therefore, certain that no curriculum can achieve the desired result unless the teachers are appropriately trained. Tsui (1998) says, "What teachers know and can do is the most important influence on what students learn, and recruiting, preparing and retaining good teachers is the central strategy for improving our

school". In general, a teacher imparts knowledge to students and thereby effects changes in the students.

### **Goals of environmental education**

The goals vary according to the needs of the society in questions. For examples, the problems of developing and developed countries are different; there may be variation in objectives.

Monroe, Andrews and Biedenweg (2007) identified the following as goals of environmental education:

- i. To foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas.
- ii. To provide every person with opportunities to acquire the knowledge, values, attitudes and commitment, and skills needed to protect and improve the environment.
- iii. To create new patterns of behaviour of individuals, groups and society as a whole towards the environment.

The Nigerian education system according to Reubinson, (2013) is hinged on an integrated curriculum of general education with balanced growth of students through developing basic skills and inculcating healthy long life attitude and moral values that are critical to the maintenance of the Nigeria. Environmental education at the primary level reflect an infusion of several subjects, which centres on the social, cultural and biophysical environment with the aim of achieving a balanced and harmonious relationship between not only human being and nature but among the various ethnic nationalities. However, the secondary school syllabus contains no specific subjects on environmental education except with sketchy mention in Biology, Geography, Social studies and Agricultural science. Although, it is universally agreed, however, that environmental education should be interdisciplinary, drawing from biological, sociological, anthropological, economic and political and human resources (UNESCO, 1987).

### **Environmental education and society**

Education has the power to modify the society by presenting better knowledge to its populace. It provides solution to different types of problems which exist in a society and therefore, education has a vital role to play in saving the environment.

Environmental education creates awareness on a variety of environmental issues like; pollution, climate change, loss of biodiversity, deforestation etc. Everyone in the society can

understand and become aware of the various environmental issues if they get poor education on it. Environmental awareness can provide knowledge on how natural environment function and how human beings can deal with ecosystem for sustainability. This will certainly make people to become more concerned with their environment. The Economic Commission for Latin America and Caribbean (ECLAC, 2000), report that cross- national studies illustrated a rise in environmental concern as global phenomena. They revealed that most of the studies they reviewed have found that there were very few differences between developed and developing countries in their degree of concern on environmental quality. Furthermore, they reported that several studies have established hypothesis by linking the social attribute to the degree of environmental concern. The attribute such as age; gender; social status and political ideology are considered to have some correlation with the existence of concern on environment. Creating awareness also help the society to become alive to environmental issues and take necessary decisions by making policies. Until recently. People's awareness was never considered as tool to promote environmental policies. But ECLAC report (2000) revealed that the citizens awareness and its pro-environmental actions plays important role in making the environmental policy successfully.

Environmental education helps in saving the environment. Saving the environment involves protecting the natural environment by individual, organization and society. Environmental education helps in tackling some environmental problems like natural resources depletion by providing conservation techniques; desert encroachment through forestation programs; flooding and pollution by educating people on the consequences of these problems and ways of tackling them. Environmental education therefore educates individuals and communities about the environment and its related problems, and the solution to the environmental problems. It also motivates the people to take necessary actions to save the environment.

### **Biology Curriculum and environmental education**

Biology can be considered as an effective tool and one approach of knowing the environment. Lack of Biology knowledge will no doubt affect better understandings of the environment. Teachers are key players in teaching and learning biology, environmental education inclusive. On the other hand curriculum is the key component through which students communicate with one another and interact with their environment. Curriculum as put forward by Aljabber and Eravwoke (2000) can influence students' attitudes towards environmental issues either positively or negatively. According to UNESCO (2010), it is obvious the complexity of the teachers role especially where the teacher is responsible for majority or entire curriculum. Science teacher have a major influence on the way science is

learnt and developed having impact on learners lives, knowing their subject matter and possess detailed information about the instructional processes and ways of learning. Ajaja (2013) point out certain teachers characteristics in science education such as personality, attitudes, experience, aptitude/achievements, gender and training as measured by the certificate obtained. Biology teacher as one of the key implementers of science curriculum plays an important role in environmental education in the society, they educate the students at secondary school level, teaching them the fundamentals of Biology, the relationship between living and non- living things, scientific concepts and processes, genetics and environmental issues, they also oversee laboratory work performed by students. The contents taught are prescribed topics of study that provide basic concepts and principles on which the discipline of Biology is built and also concentrate on the depth of knowledge available in the subject matter.

The Nigeria Education Research and Development Council (NERDC, 2007) developed the Biology curriculum intended to provide modern biology course as well as meet the needs of the learner and the society through relevant and functionality in its contents, methods, processes and application covering four major themes amongst which is organisms and its environment. The Biology curriculum therefore provides knowledge of the environment through the following topics: structure and functions of the ecosystems; energy flow in the atmosphere; energy flow and nutrient cycle in the Biosphere; population dynamics in the ecosystem; impact of human activities on the environment; global issues on population- its effects on man and the ecosystem; degradation of the forest ecosystem- its socio- cultural and economic implications; ecological impacts on aquatic ecosystems.

Environmental education taught in school settings, is predominantly integrated in a school's science curriculum. Often, it is taught within earth and environmental science topic areas pertaining to ecosystems and environmental issues such as energy, climate change, pollution, and natural resources. Its teaching and learnings also occurs commonly in life sciences topic areas that include biodiversity, endangered species, and genetic engineering (Bodzin, Klien and Weaver, 2010).

## **Conclusion**

Our environment is constantly changing. There is no denying that, however, as our environment changes, so does the need to become increasingly aware of the problems that surround it. With a massive entry of natural disasters, warming and cooling periods, different types of weather patterns and much more, people need to be aware of what types of environmental problems our planet is facing. Global warming has become an undisputed

fact about our current livelihoods; our planet is warming up and we are definitely part of the entire problem. However, this isn't the only environmental problem that we should be concerned about. All across the world, people are facing a wealth of new and challenging environmental problems every day. Some of them are small and only affect a few ecosystems, but others are drastically changing the landscape of what we have already know. Biology teachers as custodian's biological knowledge and key actors in curriculum implementation have important role to play in creating the awareness about the environment. This will no doubt help the society to make adequate policies and strategies required to tackle those environmental problems like; pollution, flooding, climate change, desert encroachment, drought etc.

### **Suggestion**

1. More qualified and experienced teachers should be provided for effective implementation of the senior secondary biology curriculum and creating environmental awareness in the society.
2. Biology teachers should intensify effort in teaching such topics relate to environment and environmental issues with a view to creating awareness about the environment.

### **References**

- Ajaja, O. P. & Eravwoke, U. O. (2013). Teacher characteristics and Science Teachers' Classroom Behaviour. Evidence from Science Classroom Survey. U. S- China Education Review, 3 (1), 36 – 53.
- Aljabber, J. M. (2002). The Role of Environmental Education in Conservation Biology, Indiana University, Bloomington, Retrieved at [www.faculty.ksa.edu.sa/document](http://www.faculty.ksa.edu.sa/document) on 25<sup>th</sup> April 2017.
- Bosah, V. O. (2013). Environmental Education in Nigeria: Issues, Challenges and Prospects Mediterranean Journal of Social Sciences MCSER publishing, Rome- Italy ISSN 20392117 (online) ISSN 2039- 9340 (print)
- ECLAC, (2000). The Role of Environmental Awareness in achieving Sustainable Development.

- Monroe, M., Andrew, E. & Biedenweg, k. (2007). A framework for environmental education Strategies. *Applied Environmental Education and Communications* 6(3), 205- 216.
- NPE, (2004). National Policy on Education, NEDRC Press Yaba, Lagos- Nigeria.
- UNESCO, (1987). International Congress on Environmental Education and Training Moscow. USSR, 17- 21 August, 1987. ED- 87/CONF. 402/COL. 1
- UNESCO, (2010). Current Challenges in Basic Science Education. Published by UNESCO, Education Sector Paris.
- Robinson, J. O. (2013). Environmental Education and Sustainable Development in Nigeria Breaking the Missing Link, *International Journal of Education and Research*, 1(5).
- Tsui, K. T. (1998). Understanding teacher performance towards a comprehensive framework: *Asia pacific Journal on Teacher education development*, 1 (2), 81- 89.

