

# **JOB CREATION AND SELF PRODUCTIVITY THROUGH BIOLOGY EDUCATION: A CALL FOR COLLABORATIVE RE-ENGINEERING**

**By**

**SAMINU ADO**

*Department of integrated Science,  
Federal College of Education,  
Katsina.*

## **Abstract**

*This paper has defined and identified job creation and self productivity as means through which man can sustain his life. The paper has indicated that biology education is one of the gate ways through which man can become self productive and create more opportunities for employment in Nigeria. This paper has also indicated areas of focus in biology education and called for collaborative re-engineering in the biology education with the stake holders for achieving these objectives effectively.*

It is the aspiration of Nigeria that all its citizens become vocationally productive and be able to contribute to National development. In line with this, the Nigerian Government in collaboration with the United Nations introduced the Millennium Development Goals (MDGS) to achieve, as one of its objectives, the eradication of extreme poverty and hunger (Ipusu and Ukuma, 2008). Therefore, guidance should be given to both children and adults towards self realization, creativity and job - creation through collaborative re-engineering.

There should be a collaborative effort in schools towards vocational education in which the mental and physical qualities of students are developed. This will enable the students to increase their skills, knowledge and competencies required for utilizing the national resources needed for job creation and self-productivity.

Job creation, according to Hornby (2005), is the process of providing opportunities for paid work, especially for people who are unemployed. Since job is work for which an individual receives regular payment, according to Hornby (2005); therefore, job creation is to provide necessary knowledge and skills required for student at the school level to become, especially, self-employed at the end of their studies. Self-productivity in the other hand is the rate at which an individual is able to produce goods and services using the available resources in order to get some financial backing for the sustenance of life. As it is rightly said that wage rates depends on levels of productivity (Hornby, 2005).

## *Pristine*

Most often when students leave the school and come back home without getting any employment they become nuisance to -the society. Such people usually create problems in the society and sometimes end up in thuggery, stealing and arm robbery. However, if students are properly given the necessary knowledge and skills for job creation, definitely they could be able to become self productive to sustain their lives after school years. This contributes to sustainable development and economic growth in Nigeria (Dikko, 2008).

In a dynamic society like Nigeria, educational transformations are always the result and symptoms of social transformation (Uduma, 2007). As the population is increasing, the social needs of Nigerians are also increasing in pursuit of equality in economic and social status. Therefore, there is need for restructuring the present teaching and learning in the schools, there should be changes and innovations which will match with the contemporary world order (Uduma, 2007). With regards to Biology, changes and innovations should be targeted at the curriculum and basic conditions for teaching and learning. However, to effectively train students to become self-employed and self-productive after school education, there should be a call for collaborative re-engineering in the Biology education.

In this paper, effort is made to explore the areas requiring collaborative re-engineering in Biology education for job creation and self productivity under the following headings:-

- X Job creation
- X Self productivity
- X Biology Education
- X Collaborative re-engineering
- X. Areas of collaborative re-engineering in Biology Education
- X. Approaches for successful collaboration

### **Job Creation**

The work or job can be done in an office to deal with government or company's papers and files, by which some money is paid at, the end of each month. It can be field work that is paid weekly or monthly, or even some services rendered to people to get instant payments.

Therefore, job creation, according to Hornby (2005) is a process of providing opportunities for paid work, especially for people who are unemployed.

### **Self-Productivity**

Self-productivity is a process by which a person directs his desires and behaviors towards making goods and services in order to cater for himself and satisfy his needs (Hornby, 2005).

### **Biology Education**

Biology is the study of living things, ranging from microscopic cellular molecules to the biosphere, encompassing the earth's surface and its living organisms

(Ramalingam, 2007). As living things exist in air, soil and water, the study of biology has become a very wide field of human endeavor (Dike, 2009).

According to Kalu and Ezeaghasi (2007), biology is the science of life on which man relied right from creation to grow his crops, rear his animals, treat his ailments and provide his shelter.

However, education is the process by which society hands down knowledge, culture and values from one generation to the other (Uduma, 2007). Therefore, Biology education is the process of imparting knowledge, skills and attitudes about living things: Mohammed and Jongur (2008) opined that Biology education establishes the fundamental relationship between man and his environment and their best working relations.

### **Collaborative Re-Engineering**

According to Hornby (2005), collaborative is the involvement of several people or groups of people to work together and produce something, while re-engineering is the activity of re-applying scientific knowledge to the design, building and control of machines. Therefore, collaborative re-engineering can be referred to as the involvement of several people, individually or in groups, to work together in order to accomplish a common purpose. Dike (2009) added that collaboration here can be referred to as two or more people or organizations working jointly to achieve a particular task.

### **Reasons for Collaborative Re-Engineering through Biology Education.**

The usefulness of Biology in research and in the development of new tools and techniques has undoubtedly improved the quality of our lives (Ramalingam, 2007). According to Ramalingam (2007) Biology finds application in

- I. Medicine, dentistry and veterinary science;
- II. Agriculture and horticulture;
- III. Food production industries and
- IV. Biotechnology, such as genetic engineering and hybridoma technology

The above mentioned are some of the many career field open to students of biology. However, effective biology education can make students become self-productive through the use of some important achievement of applied biological research such as:-

- i. Production of hybrid crop plants with desirable qualities;
- ii. Production of hybrid farm animals with desirable qualities;
- iii. The use of biological pesticides instead of chemical pesticides in the control of agricultural pests;
- iv. Alternative energy source from organic wastes e.g use of methane gas as energy for cooking;
- v. Cheese and yoghurt making as diary products.

## *Pristine*

Therefore, effective biology education through collaborative re-engineering will surely produce people who can cater for themselves and become effective and useful members of the society. Such people will be able to develop and create jobs for themselves and for others within the society. As such, it has become very imperative for stakeholders in collaboration with members of the society to contribute in this regard.

### **Areas of Collaborative Re-Engineering**

There are areas in Biology curriculum where the school administrators, the Parent - Teachers ' Association (P.T.A), the community and other Non-Governmental Organizations (NGOs) can collaborate effectively to train the students for job creation and self-productivity. The areas include:

#### **1. Cell Structure and its Relation to the Environment**

This enables the students to learn the techniques of biotechnology and agricultural activities. However, materials and equipment for this study are costly so there should be effective collaboration.

#### **2. Plant and Animal Nutrition**

This area discusses about the causes, effects and remedies of nutrition disorder. Effective collaborative re-engineering can contribute a lot to the training of nurses, nutritionist and doctors.

#### **3. Genetics and Variations** are areas which discuss about genetics of mono hybrid and dihybrid inheritance used in plants and animals selection for better quality hybrids; and morphological variation which is. Used for crime detection.

#### **4. Micro - Organisms** This discusses about different disease causing micro-organisms and methods of controlling harmful micro-organism to maintain good health.

#### **5. Conservation of Natural Resources** This highlights the wise use of natural resources such as plants, animals, water and land. As a collective decision, this can develop alternative source of energy from organic waste through biotechnology research e.g use of methane gas as alternative source of energy for cooking (Mete, 2007).

### **Approaches for Successful Collaboration**

1. Biology teachers are the curriculum implementers so they should be knowledgeable enough in the areas mentioned above. Therefore, they should further their studies through schooling and attendance of workshops and conferences.
2. Teachers should collaborate with laboratory assistants to practice how to handle laboratory/practical materials and equipment.
3. Local, State and Federal governments should collaborate in equipping the biology/science laboratories.
4. The community should collaborate with the schools in terms of material supplies such as consumable materials like onions, yam. e.t.c.
5. P.T.A. to be financing outdoor practical activities with their students.
6. Non-governmental organizations (NGO) such as cooperative societies, carpenters

*Saminu Ado*

and metal workshops associations should collaborate in funding/supporting practical activities in the schools.

## **Conclusion**

Considering the dynamic situation in Nigeria' in terms of vocational activities, there is the need for education stakeholders and the community to collaborate effectively in re-designing, conduct and control of Biology education for job creation and self- productivity.

## **References**

- Dike, N. (2009). Collaborative Involvement in funding Biology Laboratory equipment and facilities in tertiary institutions in Nigeria: Issues and approaches. *Nigerian Journal of Science and Educational Research*. 5:1 86-93
- Dikko, M.I. (2008). Career Opportunity in Exercise and sports science education: An antecedent for a sustainable Human Health and economic prospects in *Nigeria*. *Nigerian Journal of Science and Education Research*. 4:1.200-205.
- Harnby, A.S. (2005). *Oxford Advanced learners' Dictionary*. 7<sup>th</sup> edition. Oxford University press.
- Ipusu, K. A. & Ukuma, S. (2008). Vocational education: a key driver to achieving Federal Government's Seven Point Agenda in line with the millennium development goals (MDGs) for National development. *Nigerian journal of science and educational research*. 4:1.211-218.
- Kalu, U.U. & Ezeaghasi, E.N. (2007). Review of factors which influence the attitude of students Towards Effective study of Biology in senior secondary schools in Nigeria. *Nigerian Journal of Science and Educational Research*. 1:1.239-247
- Mohammed, A. & Jongur, I. V. (2008) Effective Biology Education: a key driver to achieving Federal Government 7- point Agenda for sustainable Development. *Nigerian Journal of Science and Educational Research*. 4:1.187.
- Mete, S.G. (2007). Research in Biotechnology findings into the secondary school Biology curriculum in Nigeria for economic empowerment and development. *Nigerian Journal of science and educational Research*. 1:1.134- 141.
- Ramalingam, S.T. (2007). *Modern Biology for Senior Secondary Schools*. Revised edition. African first publishers.
- Uduma, M.B. (2007). Reforms in Biology education for sustainable development. *African Journal of material and Natural science*. 4:4.67-71.