

BIOLOGY EDUCATION AND NATIONAL PRODUCTIVITY: IMPLICATION FOR TRANSFORMING NIGERIAN EDUCATIONAL SYSTEM

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Abstract

Quality education eradicates growth and developmental slavery but enhances national productivity which of course is built upon knowledge and skill acquisition. Biology education aims at training and marketability of essential skills for the wellbeing of man and his productivity. This paper therefore attempts a review of national productivity and x-rayed the present Nigeria educational system as the supposed enabling environment for greater productivity of her citizen but yet to be available. It emphasizes the contributions of qualitative biology education to promote productivity by equipping its learners with acceptable skills for improving oneself and the society at large. Government is advised to proactively support education through a steady and well supervised funding in the areas of improved teacher incentives and prompt salary payment; biological science research in the right order without prejudice, critical review of the size, quality of the human resources and educational infrastructure and knowledge transfer from the biology classroom towards bio-entrepreneurship, among others.

Keywords: *Quality education, national productivity, biology education.*

Introduction

Knowledge of biology is intrinsically connected to building a sustainable interaction between nature and human society. Education as defined by Georgewill (2006) is simply the development of the totality of man and the natural world, the first world of man; implying that, through education, man develops mentally, physically, morally and spiritually. Thus, she puts biology education as the education that serves both individual and social roles by inculcating knowledge and right types of attitudes for the survival of both the individual and the society at large. Education, particularly biology education is central to sustainable livelihood hence Teng (2012) opined that biology is a pivotal knowledge component to meeting humankind's requirements and thereby contributing to sustainable development.

According to Araoye (2015) biology education is a typical education which aims at training and marketability of essential skills for the well-being of man. As a matter of fact, the knowledge of plant and animal, their use and management represent one of the few opportunities of the nation's state of well-being, development and of course, productivity.

Productivity, as defined by Adeniyi (2000), is regarded as a key factor in human resources development and improving economy growth in a competitive environment. Improving

productivity therefore requires an adequate conceptual approach and positive incentive to inculcate the right attitude in employees and employers regarding new working practices. Government all over the world recognized that building and enhancing productive capacity is the only long-term means of improving and sustaining national wealth (Araoye and Araoye, 2011).

Productivity as put by Bakoye and Tijani (2011) is an economic term frequently used in the industrial sector for efficient and effective production of goods and services for the consumers. Essentially, productivity occupies the central nerves of a meaningful national growth and development of any society. Expanding more, they offered that many factors determine the national productivity level among which are, quality education, technological capability of the nation's labour force, viable economic policy and that, it is the communication of the impact of quality education in all sectors of Nigerian life that is referred to as national productivity.

According to Oduwaiye (2000), National Productivity Centre in its information booklet defines productivity as doing the right things the right way, getting more output, punctuality and promptness, elimination of wastes in all forms, justifying your pay, improvement in all aspects of life, producing more and more of better quality. In his opinion, staff personnel are the essential in all organizations, especially the educational sector, the effective management of staff personnel no doubt has a great influence on productivity.

For a healthy measure of productivity in Nigeria, the human potential must be harnessed and developed and this would only be possible through public access to quantitative and qualitative science education, particularly biology education, which is highly instrumental to human development.

Nigerian Educational System

Education is a dynamic instrument that can be used to effect economic, political and social development of people and their societies [Alimba and Isah, 2007 in Mshelbila, 2012]. Mshelbila (2012) quoting Locihead and Verspour (1994), stated that education improves the productive capacity of societies and their political, economic and scientific institutions.

The Nigerian education system over the years has witnessed various forms of distractions from the government and government policies resulting in inappropriate education and training of the populace. According to Araoye and Araoye (2011), Nigeria has toiled with some educational programs, which have only served as conduits to transfer money to the corrupt political leaders and their cronies. For instance, the nation launched the Universal Primary Education (UPE) in 1976, but as noted, the program failed due to lack of funds necessitated by corruption, among other factors. Nigeria has again embarked on another mass-oriented education program, the Universal Basic Education (UBE). In their observation, the then president, Olusegun Obasanjo, had affirmed during the inauguration of the UBE program and assured the Nigerian people, that it would not fail, but not long after that, the Federal government reported that the failing standard of education in Nigeria was caused by "acute shortage of qualified teachers in the primary school level with the report that about 23 percent of the over 400,000 teachers employed in the nation's primary schools do not possess the Teacher's Grade Two Certificate, and so the problem continues.

As observed by Mshelbila (2012), the shortage of qualified teachers in some States and surplus of qualified teachers without jobs in other States could not be properly addressed. According to Owodunmi, Mohammed and Owodunmi (2012) in spite of all the efforts made

by the Nigerian governments on the UBE programme aimed at providing free and compulsory basic education for every Nigerian child of school going age, the implementation of the programme is still being faced with a lot of challenges such as lack of qualified personnel, infrastructural facilities, instructional materials, gross inadequate teacher strength, poor condition of services for teachers, unstable political atmosphere, etc.

The Nigerian educational system in the 21st century is highly characterized by lack of quality teaching materials, lack of adequate and uniform training and funding, corruption, student examination malpractice and strike actions and the likes resulting in low productivity in all its ramifications.

Orji and Job (2013) observed that, educational policy decisions in Nigeria are highly political orders, directives and assertions bereft of synergy as the envisaged educational plans and objectives are being politically manipulated to suit the whims and caprices of policy formulators. Sadly also, Odinkalu (2013) reported that Nigeria ranks last (136th) of 136 countries surveyed by UNESCO with reference to public spending on education as a proportion of GDP. The proportion of public spending on education in Nigeria as a percentage of our GDP is 0.89% and that education expenditure as a proportion of Gross National Income (GNI) is not much better – 0.85% - or 167th out of 168 countries. Indeed, the policy environment for education as a generator of our national development needs a fresh look by all interested in the future of Nigeria. And as put by Araoye and Araoye (2011), given Nigeria's considerable resource and endowment and costal location, there is potential for strong growth as we undertake all measures to enhance productivity. This analysis, coupled with the various observations of the state of the nation's educational system and the noted measures of national productivity, clearly reveal that there is an urgent need to re-order the Nigerian educational system.

Biology Education and National Productivity

As put by Teng 2012, Biology Education has to be viewed in the broader context of science education, and in particular, science education for development. In this broader context, science (Biology) education, must be considered for creating science literacy in adult populations and not just in schools. A scientifically literate society in this wise, enhances rapid economic growth in all sectors, thus promoting national development and national productivity. In the world today, science and its concomitant technology have become such an integral part of our lives and as such generalized science (biology) literacy is needed to form a basis for society to make informed decisions [Teng 2012].

Biological literacy has the potential of specific training and meeting the needs and challenges of the learners, in that the acquired literacy skills are immediately applied to improve learner's livelihood. Human society has tapped biological knowledge since ancient times to produce food and other human needs for survival. This is so because Biology is an applied field of study built upon many disciplines for the purpose of achieving and maintaining the well-being of individuals in an ever changing society. Series of professions that are of vital importance to man especially human and veterinary medicine, agriculture, breweries and food industries make use of biological principles and most basic problem on earth are biological (Ejilebe, 2012).

The human society has greatly explored and exploited biological knowledge over time to produce food, feed, beverages and fibre, and the advent of modern technologies and new biological knowledge has vastly expanded the application of biology (Teng, 2012). There is

no doubt that a biological skilled-work force is a key to knowledge-based economy and productivity at large, hence the need to embrace the essentiality of a healthy productive nation.

There is indeed a growing anxiety in Nigeria about the low level of productivity of the economy as is being manifested in the manufacturing service, public utilities, public service and others, [Araoye and Araoye, 2011]. As opined by Teng (2012), a comparative advantage among nations come less from cheap labor and more from technical innovations and the competitive use of knowledge. Education including scientific literacy, contributes to improved productivity which in theory should lead to higher income and improved economic performance.

The discipline of biology promotes productivity generally in the learners as it enables the individual to discover, create, innovates, build skill, generate ideas, etc. In addition, a biology laboratory instruction enables the learners to inculcate 'team work spirit'. Team work amongst students develops in them skills in group dynamics, persuasion, organization, leadership and management skills. These are all harnessed towards improving oneself, and the society at large.

To therefore make biological science education impactful on the nation's citizenry, we must advocate for the right thinking in the right direction in the present educational system in Nigeria. The emphasis on 'science for all' demands a sound and productive educational approach. Attempt to make science popular must not water down the package. For biology education to produce the right manpower and thus a healthy national productivity in Nigeria, the government and the mass of people, all need a re-orientation. Olatunji (2011) made an allusion to a statement that Ernest Gellner has provocatively observed that "it is nationalism which engenders nations and not the other way round". A positive nationalism and patriotism is needed in the classroom and the society at large. Biology education with all it embraces therefore has the potential of equipping individuals with acceptable skills for national productivity.

Conclusion

This paper has discussed in details the relevance of biology education for national development with a view to improving the Nigerian educational system for the benefits of her citizens. Attempt was made to highlight the present state of the nation's educational system and what goes for national productivity and thus inferred that national productivity is a function of the quality of education available to the people and of course, the incredible influence of the knowledge of Biology.

Recommendations

It is clear that, a close association exist between education, science education particularly biological science education and national productivity. To therefore stimulate the Nigerian educational system to achieving the needed accelerated growth, the following are recommended:

Government has need to proactively support education through a steady and well supervised funding in the areas of:

- Improved teacher incentives and prompt salary payment; biological science research in the right order without prejudice.

- Stimulating, nurturing and training scientifically and technically talented young minds.
- Critical review of the size, quality of the human resources and educational infrastructure.
- Knowledge transfer from the biology classroom to social and livelihood sustainability of young graduate through building the biology curriculum towards Bioentrepreneurship.

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