

# SCIENCE EDUCATION FOR ECONOMIC REHABILITATION AND RELIANCE

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## **Abstract**

This paper looks at the purpose of science education for development and self-reliant economy. The paper points out that science can only be relevant to national development when people realize its significance and have positive attitude towards it. The paper concludes that the type of science education needed by Nigeria for her economic rehabilitation and self-reliance is one that can equip the individuals with skills.

## **Introduction**

Science education is founded on creativity and curiosity. It is a nascent field of study, which has width, depth and importance critical to development (Oriaifo, 1997). The scientific capacity of a nation is the social index and determinant for assessing the economic progress, prosperity and power of the nation.

According to Abubakar (1972), the pursuit of science is imperative for any nation that wants to maintain its independence and sovereignty, ensure growing prosperity and hold up its head among civilized nations.

An important aspect of education in general, and science education in particular, is for it to be functional, preparing the individual for life and reforming the community for relevance. There is no gain-saying the fact that education holds the key to economic, human resources development and well being of the society. Bajah (1982) looked at science as the study of the environment. In this regard, science education that is conceptualized as satisfactory and relevant must be able to raise the benefiting society to a position of self-sufficiency. If it falls short of this expectation, then it is largely theoretical.

This paper will therefore, briefly look at the purpose of science education, the factor with which national development can be associated with regard to science and generally how Nigeria can be self-reliant using science education.

## **Purpose of Science Education in Nigeria**

Nigeria cannot develop in the classroom but in the world of work employing science education that is functional and positively oriented. Undoubtedly, Nigeria's vision and purpose of science and technology education are in place as contained in the National Policy on Education (1998 ed). The purpose of science in a programme of general education is the production of enlightened, active and useful citizens.

According to Oriaifo (2002), science education has a threefold purpose: (i) Preparation of the more willing and able students with special abilities for higher studies; (ii) Spreading scientific literacy to all and sundry; acquisition of multidimensional scientific and technological literacy to enable the citizenry appreciate it in their daily lives; (iii) Providing required skills in the workforce needed in the world of work in middle-level scientific and technical manpower as well as upper-level science theoreticians and practitioners.

Historically, according to Urevbu (1983), the demand for school science in Europe and America grew out of various factors of economic and social development, which occurred during the 18<sup>th</sup> and 19<sup>th</sup> centuries. Among these factors are:

- (i) The rapid development of science and technology and their application to industry and everyday life.
- (ii) The growing need for skilled labour to man these industries.
- (iii) The fruitfulness of the laboratory method in technology.

The result of Ashby Commission created an awareness to rethink science education in Nigeria. One of the recommendations for science and technical education was that they require more than teaching of facts and imparting of information and that it should be a process of changing people's attitude.

According to lyobhebhe (2004), the concern of science education is to attempt to impart awareness of the categories and processes of science, frequently directing such knowledge towards options for practical application. lyobhebhe emphasized that, for science education to be meaningful, it must establish a strong link between a society's economic and productive competitiveness.

### **National Development and Science Education**

Development is a complex process and science is clearly a part of it. Science becomes relevant to development only when people realize its importance to their lives and develop positive attitude towards science as a development tool. National development entails producing more and better food to eat, healthier and happier individuals, better living accommodation, improved transportation and communication systems, sound education and enlightenment among the populace.

We live in an age in which science and technology are the dominant and economic forces. Science being an organized system of knowledge, about nature and understandings, which they yield, can be put to use by man to modify his environment and to make it serve him. There is no doubt that science produces technology but improved technology makes further sciencing possible.

It is only the growth of a scientific culture in Nigeria that can liberate the people and throw open the doors of development. Teibo (1988), stressed that for national survival, Nigeria should be able to revolutionize industry and agriculture, since these are the structures on which the economic mainstay of the nation must stand. Revolutionizing agriculture will enable the country to feed her population of over 125 million at the moment and even be in a position to export finished products. Agricultural and rural development in Nigeria cannot be achieved solely by adapting into the pattern of western technology but by self-reliance through modern indigenous technology development (FGN, 1992), Modern indigenous technologies are those technologies conceived, planned, and designed within the framework of modern scientific disciplines.

Agriculture is still basically traditional and has failed to witness any scientific transformation (William, 1994). Appropriate science education is needed to push production function of the rural dwellers (who are predominantly farmers) to higher frontiers.

Agriculture has the strongest potential for bringing the benefits of the biotechnology revolution to the rural poor in Nigeria.

According to Oriaifo (2002), Nigeria has remained an under developed economy mainly because of the unsatisfactory status of science education. The economic growth is stunted because of the impaired nature of the country's technological progress.

### **Self-Reliant Economy Through Science Education**

The triumphs of science represent process of increasing knowledge and a sequence of victory over ignorance and superstition. Nigeria has got all it takes, an intelligent people and abundant natural resources to build a great and self-reliant nation using science education. Products resulting from advances in science are what create wealth. Already, food, drugs and chemical industries in Europe and America are reaping

billions of dollars from products of science. The concept of self-reliance means the reduction of poverty within the context of growing economy. Science education will provide the technologies for food production, processing and preservation.

If the vision of science education in Nigeria is translated to mean:

- (i) Development of knowledge needed for creating wealth through agricultural technology (harnessing of resources) for the well being of society;
- (ii) Enhancing necessary attitudes that foster the effective control and manipulation of the physical and social environment, also for the well being of the society;
- (iii) Exploitation of natural resources for the improvement of society; then the roles of science education can only be realized if the content of science taught in Nigerian schools are tied to these visions. The challenge now is towards ensuring the accomplishment of our science education to intellectual, creative and productive ends for Nigeria to be truly self-reliant.

### **Recommendations**

The current ideology about science, is that science that gives priority to functional learning and its relevance for realities, realities that include science related careers in industry, business, government, military and private foundations. This calls for a change in science education which may be challenging to accomplish. But without change there is little or no growth. The paper therefore recommends that:

- (i) Science educators who wish to contemplate new directions for curriculum and instruction must consider the real world outside school science, where science has meaning. The real world of science-related careers and public interest is a world of dynamic integration of science content.
- (ii) With abundant mineral resources and large acreage of arable land in the country, the time is ripe for Nigerian science educators to rethink science that is loyal only to their discipline towards another identity that celebrates views of relevance for economic rehabilitation and reliance.
- (iii) There is urgent need to see science as culture. Dealing with science as culture in the classroom can lead to relevant content for integrated school science, particularly for the enculturation of pupils into their local and national society.
- (iv) Reformation of school science into a subject that connects with technology and everyday society. In trying to reform school science curriculum, it should not be discipline based but that which is integrated with all aspects of life.

### **Conclusion**

Nigeria is a country endowed with abundant resources. With the notable exception of petroleum, none of the resources is exploited to any appreciable extent. It is the opinion of this paper that science education in Nigeria should be oriented towards eliminating what Combs (1985), referred to as "striking incongruity between purposes of education and the reality of the economy which has been that schools stimulated the aspirations of many young people for a kind of life and work they will never actually live". The economic and socio-political advancement of a nation does not

necessarily depend on its natural resources endowment but increasingly on the level of scientific and technological capability (Lyobhebhe, 2003). Science education is therefore the pathway to the liberation of the mind and its improvement of the socio-economic status of the individual. This paper concludes that the type of science education needed in Nigeria today is one that can equip the recipients with skills for economic rehabilitation and self-reliance.

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