

Science Education: The Challenges of Free Education in Niger State

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Abstract

The place of science as a tool for development of any nation cannot be over stressed. Nigeria like any other nation of the world has not only become committed to the provision of free education, but also accepted the potency of science education as a tool for effective scientific development. This apparently explains why the Nigerian Government came up with laudable programmes, the most recent of such program is the Universal Basic Education (UBE) programme that has made education free from primary 1 – 6 and Junior secondary 1 – 3. It is in view of this that this paper examined the evolution of free education in Nigeria, with particular reference to Niger State. It also tried to identify some of the challenges that free education poses to the teaching and learning of science in schools in Niger State, such as poor funding, poor laboratories over crowded classes, unqualified science teachers; lack of equipment, facilities and materials. Finally it was recommended that more funds should be allocated to the education sector to the tune of 26% of Niger State annual budget as recommended by UNESCO so that more facilities, equipment and materials could be purchased for effective teaching and learning of science.

Introduction

The role of science and technology in the development of a nation is never in dispute. The current development in science and technology has greatly affected human beings, and to be ignorant of this development is to live on an empty and probably unrealistic life. Greenbury in Inyang and Ekpenyong (2000) also contend that a nation with a scientifically uneducated citizenry cannot be expected to make any reasonable decision on such issues as nuclear energy, and atmospheric pollution due to lack of the rudimentary tools to grasp this argument.

From the on going it can therefore be said that no nation can achieve meaningful scientific development without developing its human and material resources. This is because no matter how rich a nation is in terms of material resources, without relevant manpower, such resources cannot be harnessed and utilized for needed development. It is in recognition of this fact that successive governments in Nigeria since post independence have come up with several educational laws, policies and programmes at different levels of the nations educational system. One of such laudable programme introduced by the Nigerian government is the Universal Primary Education (UPE) launched in 1976 and Universal Basic Education (UBE) launched in 1999. The policy establishing UBE states that it shall as when practicable provide free compulsory universal primary education, free secondary education, free university and adult literacy programmes. The Universal Basic Education which is the most recent and laudable programme on free education, made education free from primary 1 – 6 and junior secondary school one to three. (1 – 3) to include non-payment of school fees, free books, free uniform and free meals as practiced by some states in the country.

In spite of the efforts by past and present leaders in Nigeria towards ensuring that education is free for its citizenry, nothing much has been done in the area of science education in terms of provision of science facilities, equipment, materials, laboratories, training of science teachers, funding, etc.

This paper attempts to examine the concept of free education, evolution of free education in Nigeria. It also discussed some of the challenges free education poses to the teaching and learning of science education in Niger State.

Concept of Free Education

Universal Education is synonymous with free education. Education is said to be universal when no body is denied the opportunity of being educated because of the circumstance of his birth, sex, religion, Culture, financial position or disabilities. Education cannot be universal unless it is free (Agbarevo, 2000).

Free education can therefore be seen as equal opportunity given to a large group of children at all levels including those at the grassroots. Education can be made free by non-payment of school fees, free reading and writing materials, free meal as was practiced before in many states in Nigeria.

Concept of Science Education

Science education is defined as the cultivation and discipline of the mind and faculties of an individual to utilize science for improving his life, cope with an increasingly technological world, or pursue science academically and professionally for dealing responsibly with science related social issues (Abubakar, Gero & Mohammed, 2006).

The main aim of science education as stipulated in the National Policy on Education (2004) is to equip students to be live effectively in our modern age of science and technology. Based on these, the core curriculum for science education indicates the general objectives of science teaching at all levels of the educational system as to:

- produce scientists for national development,
- cultivate, inquiring, knowing and rational mind for the conduct of good life and democracy,
- service studies in technology and cause of technological development and
- provide knowledge and understanding of the complexity of the physical world, the forms and conduct of the life.

Evolution of Free Education in Nigeria

The advent of free education in the geo-political entity called Nigeria was first launched in 1952 in the Western region by Chief Obafemi Awolowo. In July of the same year the Minister of Education Chief S. O. Awoloye presented a compressive proposal for the introduction of a free universal education for the Western-region by 1955. In February 1957 the Eastern regional government led by Dr. Nnamdi Azikwe launched the Universal Primary Education in the Eastern region. While the Western and Eastern region vied to be the first region to give its people free and Universal Primary Education between 1952 and 1958, the Northern region was unable to join the race for financial and religious reason. In 1958 the Northern Government plan primary education on a provincial basis to ensure that an increase in school population would take place when qualified teachers are available (Fafunwa, 2002).

In 1978, the then Federal Military Government of Nigeria launched the Universal Primary Education (UPE). The programme is believed to be the oldest and the most ambitions step ever taken by the Federal government of Nigeria towards educational development in the country. According to Akinyemi (1983), UPE objectives are laudable and well spelt out in the third national developmental plan.

The Universal Basic Education (UBE) programme was launched by the Federal government in 1999 twenty three years after UPE was launched. According to Agbarevo (2000), the UBE programme in its objectives is not different from the 1950s and the 1976 UPE programme. Basically the scheme in his opinion has been introduced with a view to arresting the decaying trend of education and to give equal opportunity to all children of school age.

In 2007 the Chief Servant of Niger State, Dr. Mua'zu Babangida Aliyu, in his drive to make Niger State one of the three most developed state in Nigeria by the year 2020 (3:20:20) declared free education in the state from Primary School to Senior Secondary School. He marched his words with action by paying the National Examination Council NECO and West African Examination Council WAEC registration fees for the 2007 and 2008 for the Senior Secondary School three (SSIII) students in the state irrespective of their state of origin. He also directed that non-payment of school fees and other levies in all government schools and provided teaching and learning materials to schools in the state. This is further buttressed in a speech he delivered in the 60th anniversary of the University of Ibadan in 2008. In the words of Babangida (2008).

"We have made education our number one priority because we appreciate that education is the bedrock of development. Hence we have declared free education from primary to secondary education levels, free NECO/WAEC for all final year secondary schools regardless of states of origin..."

This vision of the chief servant of Niger State is a clear testimony of the fact that the present civilian administration is very much concerned about the complete development of the state and this he intends to achieve by ensuring that the people get good quality and affordable education. It is also a clear demonstration of the Chief Servants' vision and mission to make Niger State one of the three most developed economies in Nigeria by the year 2020 in the area of science and technology.

Challenges of Science Education in Niger State

Despite the good intention of the present administration to make education free for the people of Niger State, there are many challenges still facing the teaching and learning of science in schools at all levels of education in Niger State. Some of the challenges are examined as follows:

- Overcrowded science classroom.
 - Lack of Qualified Science Teachers.
 - Inadequate Science Instructional Materials and Equipment.
 - Poorly Equipped Laboratories
 - Poor Funding
 - Poor Science Teachers' Remuneration
1. **Overcrowded Science Classrooms:** Although there have been increment in the enrolment in the number of science students in schools in the Niger State no provision has been made to cater for such populations. This has resulted in overcrowded science classrooms, thus making independent science activities and practicals impossible. The large students' population also lead to poor classroom management by the science teachers. This makes effective monitoring of students learning activities difficult. This is buttressed by Dube (1985) who observed that there is a negative correlation between class size and students achievement. He further opines that it is important to have an ideal number of students per class which should be upheld without compromise for example 30 – 40 students per class. This he believes will enable the teacher to get adequate control of the students to improve students' learning.
 2. **Lack Qualified Science Teachers:** The teaching of science in schools requires specialized skill but most of the teachers in the schools especially at the primary school and Junior Secondary School level are not specialist in any of science subjects. Some of these science teachers have not been exposed to any training in the teaching of science and its methodology. Because of their poor grasp of the science subject matter content these unspecialized science teachers are reluctant to deviate from the prescribe students activities even there are situations that calls for improvisation. Thus science classes are generally characterized by reading and memorization of facts.
 3. **Inadequate Science Instructional Materials and Equipment:** Most of the schools in Niger State where science subjects are taught lack science teaching and learning materials, laboratory equipment and chemicals, and where they are available it is not adequate to cater for the large number of science students we have in schools especially at the primary school level. This makes the teaching and learning of science difficult. This also leads to poor performance of students in external examination like WAEC, NECO and JAMB.
 4. **Poorly Equipped Laboratories:** Most of the schools especially schools in the rural areas have problems of dilapidated laboratories, while some of the schools do not have at all. While some of the schools that have the structures are not equipped, the absence of this in schools made adequate science practical orientation to be difficult for students. This also makes science activities difficult to arrange and the science teachers resort to using traditional methods in the teaching of science concepts.
 5. **Poor Funding:** Science education, no doubt, is an expensive venture which requires providing funds for the purchase of science instructional materials, laboratory equipment and consumables. Although, Niger State Government in last two years have released funds for the purchase of the science materials like science textbooks, writing materials, some laboratory

materials and equipment, a lot still needs to be done. These materials provided are not enough going by the increasing number of science students in our schools. And because of the increasing students enrolment in our schools the effort made by the government in the last two years is not felt especially by schools in the rural areas as these materials and equipment never get to those places.

6. **Poor Science Teachers Remuneration:** In spite of all efforts by the Niger State Government to make education free for its people, not much was done in the area of teachers' welfare especially the science teachers. The so called Teachers Special Salary (TSS) scale did not. Science teachers are exposed to lots of danger and hazards in the laboratory or field. They still receive the same pay with their contemporaries that teach the art subjects. This, invariably, has affected the way science subjects are handled by the science teachers as they not motivated to do their work effectively. This has also led to poor performance of students especially in external examinations like WAEC and NECO.

The Way Forward

For Niger State to achieve the desired goals in its mission and vision to make education free for its people, the following have been recommended:

1. Having recognized the importance of science education in the development of Niger State there is the need to establish more science based Primary and Secondary Schools. This will assist in the reduction of over crowded science classes in our schools so that student will be able to carry out science activities in the class.
2. To achieve the objectives of free education in Niger State in the area of science education, serving science teachers should be massively trained on the job on regular basis to keep them abreast of current methods, strategies and techniques in the teaching and learning of science in schools. Science teachers should also be encouraged to attend conferences, workshops and seminars. Although Niger State Government has provided learning materials to some schools in the state, a lot still need to be done going by the increasing enrolment of students, especially for schools in the rural areas. More science laboratory equipment and materials should be provided to schools in the State.
3. Provision of well-equipped laboratories and rehabilitation of the existing ones should be rigorously pursued, to cater for the large students enrolment in our science classes.
4. In order to motivate the science teachers there is the need to provide them with especial salary scale that would make them to be more dedicated to their work and consequently retain them on their jobs rather than they looking for greener pastures.
5. To make education free in Niger State especially in the area of science education, Niger State should devote 26% of its annual budget to education as recommended by UNESCO. There should be improved funding for the purchase of science teaching and learning materials, laboratory facilities and equipment to make the teaching of science activity - based.

Conclusion

The Chief Servant of Niger State declared education free in the State to address the numerous educational problems confronting the state. Although effort have been made by the government in last two years towards making education free by non-payment of school fees by parents, provision of teaching and learning materials to schools, the programme is yet to achieve its desired goal. This is because the pit falls of the past educational programmes are not being addressed especially in the area of science education. However, the paper looked at the concept of free education in Nigeria, the relevance of science education to the development of the country and also identified some of the challenges of free education as they affect the teaching and learning of science in Niger State. Some recommendations were made so that the vision and mission of the Niger State Government of free education programme will be a reality rather than a mirage.

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