

## REFLECTING ON THE CHALLENGES ON THE ATTAINMENT OF MDGs IN SCIENCE EDUCATION IN NIGERIA AND THE WAY FORWARD

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**Abstract:** Nigeria as a country has always had highly recommended education programmes which sometimes have no positive effect on the society or often times die natural death due to poor implementation. This paper assesses the implementation related problems that hinders the attainment of MDGs in science education as well as the general goals of education. The paper identifies lack of proper retraining of teachers and supply, large class size, inadequate teaching facilities, deficient curriculum and overloaded syllabus as some of the problems. The paper suggested the roles of government such as the recruitment of more science teachers and support staff, reform of the teacher education programme, the construction of more classroom blocks in the already existing schools as well as self improvement of individual teachers through workshops, seminars and in-service short training programmes in science if the country is to overcome the challenges of the MDGs in science education.

### INTRODUCTION

In 2015, the duration set by the United Nations (UN) for member countries to attain the Millennium Development Goals (MDGs) especially in the area of education elapsed. Recalling, it was on 8<sup>th</sup> September, 2000, that no fewer than 189 heads of state and government gathered at United Nations headquarters in New York, at the dawn of a new Millennium, to reaffirm their faith in the organization and its charter as indispensable foundations of a more peaceful, prosperous and just world. On this day, the member-states adopted for themselves the UN Millennium Declaration. This adoption of the Millennium Declaration by all 189 member-states of the United Nations General Assembly was a defining moment for global co-operation in the 21st century.

Rising from the conference, eighty key Goals and 21 Targets were set to be attained on or before 2015, succinctly, the goals included to eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women; reduce child mortality rates; improve maternal health; combat HIV/AIDS, Malaria and other diseases; ensure environmental sustainability and develop a global partnership for development (Asomba, 2012). Stakeholders of the MDGs are of the view that reducing illiteracy statistics would go a long way to reduce the increasing wave of violence and insecurity currently facing us as a people. However, major avoidable factors that have remained a clog in the wheel of success to the nation's education sector include but not limited to poor budgeting, poor implementation of budgets, examination malpractice, poor performances recorded in National examinations, poor remuneration and welfare packages for teachers, usually leading to industrial strikes. Others are poor quality of teachers, poor quality of graduates, non-conducive learning terrain, unnecessary but complex school curricula. The quest and over consciousness for certificate acquisition instead of quest for knowledge, developmental skills and technical-know among others.

Educational institutions everywhere are established to carry out the tripartite roles of teaching, research and community services, thereby contributing meaningfully to the social, economic, cultural, political, scientific and technological development of any nation (Edukugho, 2012). Institutions of learning are expected to impart high level skills to proportion of the workforce, developing intellectual capacity of the individuals, engaging in training of competent, honest, patriotic and responsible professionals, needed virtually in all spheres of human Endeavour's (iji, C. O; Abah , J.A; & Uka, N. K (2013). Science and technology have been described as the primary drivers of progress of nations and have constituted veritable instruments that make material and human development march forward (Okoro, 2013). Understandably there are no viable alternation to good and functional science and technology education in human growth and development. It is observable that the implementation of science education curriculum to meet the MDGs is faced with series of problems. This paper assesses some of the implementation related problems that hinders the attainment of the MDGs in science Education.

## Teachers Retraining and Supply

Akpan (2013) opined that for any educational system to thrive well, sufficient trained teachers are needed in order to cater for the needs of education. He further observed that the science programme in our schools appear adequate in terms of content. But however good a curriculum plan may be its implementation and their quantity and quality becomes very important. Some of the teachers found in our schools are highly incompetent; they lack content knowledge as well as pedagogical skills as a result of laxity during their undergraduate days. Today, they find themselves in the schools not being able to deliver. Sharehu (2009) observed that in Nigeria, unlike other countries, the retraining of teachers had not received the desire attention from Local, State and Federal Governments. This is because there has not been any systematic attention to update regularly the knowledge and skills of teachers especially the "half baked" in the light of changes in curriculum and the wider society. It is this neglect that in turn affected the quality of teaching in schools. It is in recognition of this that the Federal Government has under the Millennium Development goals project directed the NTI in collaboration with universal Basic Education Commission to retrain primary school teachers in Nigeria. The re-training workshop focus on innovative techniques of teaching on the four core subjects (English, mathematics, basic science and technology and social studies; based assessment; and improvisation of instructional materials, the success or failure of any programmed depends on the teachers. For the science programme to fully succeed there is need for independent monitoring especially as we are of sustainable development goals in the re-training of teachers by stakeholders in the implementation of UBE and other levels of education in Nigeria. Teachers should also attain personal self-improvement programmes like stand workshops and conferences and other short in-service programmes

## Class Size

The explosive enrolment due to the UBE programmed has resulted in overcrowded classes, science teaching and learning demands that students should always be involve in practical work. Okeke and Chinwe (2006) have emphasized the fact that all learning in science must begin and end in the laboratory. The laboratory according to them is a place where students

explore problems, generate and test the related hypotheses and ultimately discover all their newly invented concepts. Due to the overcrowded condition of the classes coupled with the absence of laboratory support staff in some schools, teachers in majority cases carry out practical only two or three weeks to external examinations like the SSCE because they are overburdened with the task of combining their teaching job with that of the laboratory support staff in the face of the large classes. This state of affairs has a negative effect on overall productivity. Beside, large class size goes against the provision of the National Policy on Education (2004) which recommended teacher-students ratio of 1:25. It becomes difficult for the teacher to individualise instruction in a classroom that is tightly packed with students and seats that the teacher hardly move about freely. Students need enough space in the classroom for their diverse activities. Hence, it is generally believed that the fewer the students a teacher has the more attention he/she will be able to give to each of them which would have led to the achievement of the expected MDGs in education.

### **Inadequate Teaching Facilities**

The Nigerian schools under the MDGs programme was seen to lack most of the teaching equipment/facilities necessary for effective teaching and learning to equip our youths with knowledge and skills needed for the achievement of the MDGs for their survival and the nation. Most schools especially in the rural areas lack laboratory spaces let alone the equipment. According to Castaldi (2004) teaching facilities are those things of education which enable a skillful teacher to achieve a level of instructional effectiveness that exceeds what is possible when they are not provided. It should be noted that in schools where the materials and facilities are absent the skills of teachers may be killed and this can go a long way to reducing the output, develop negative work attitude and possibly lead to the non attainment of the school objectives (Mgbomo, 2013). There is a limit to what teachers can improvise and the extensive sourcing for and preparation of teaching materials at every stage, coupled with all the problems like overcrowded classrooms, sometimes administrative work were very cumbersome and an additional stress which lead to the achievement of the MDGs in science education in Nigeria.

## **Deficient Curriculum and Overcrowded Syllabus**

The teacher education programmes are long overdue for reviewing. There seems to be a mismatch between the teacher education programme and the secondary school curriculum requirements which has led to some of the inadequacies found in some graduate teachers (Mgbomo, 2013). Ovute and Ugwanyi (2011) reported that the current minimum standard at the college of Education level seems not adequate for the 9-years basic Education curriculum. According to them, most NCE graduates cannot adequately fit into the new Basic Education classroom for effective delivery of the VBE programme. Similarly, Lesi Awobodu and Adegbamigbe (2009) stated that there is a large mismatch between the skills required for the modern economy (MDGs) and the Education imparted to most of the students in higher learning. Teachers teach according to the way they have been taught or trained.

There is also the need to reduce pressure on the science teachers to be good scientists and innovators that the process skills are needed. However this ingredient is lost because in an attempt to cover much ground for purpose of examinations, effective science teaching is not carried out Lawal (2011) lamented over the overloaded syllabus in each of the sciences. This he pointed out makes the teachers skip or haphazardly treat some topics

## **RECOMMENDATIONS**

From the above discussion the following are recommended for the improvement of science education in Nigeria.

- ❖ Government should recruit more science teachers and laboratory support staff and distribute them evenly to both the rural and urban schools.
- ❖ There should be a reform of the entire teacher Education programme to enable our graduate teachers fit into the new science education programme in Nigeria. Emphasis should be placed on the integration of ICT in science teaching and learning at all levels of education.
- ❖ More classroom blocks should be built in the already existing schools to decongest the classrooms and reduce teacher work load for effectiveness.

- ❖ The existing science curricula should be revisited to see if there exist irrelevances so as to reduce its content to avoid haphazard teaching of topics or concepts.

## CONCLUSION

The sustained prosperity of a nation depends upon the level and quality of its education system. Education empowers individuals and maximizes national intellectual resources in order to sustain social, economic, scientific and technological progress for the benefit of all. The science education programmes in our schools failed the MDGs programme because adequate attention was not given to those sensitive aspects that would have helped in its implementation. As we are in the area of sustainable development, stakeholders in science education should give adequate attention on those areas that will assist in the effective implementation of science education in Nigeria.

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