

Empowerment of Science, Technology and Mathematics (Stm) Teachers: A Strategy for the Realisation of the Millenium Development Goals

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Abstract: *Nigeria has always had commendable education programmes which often times die natural death due to poor implementation. This paper gives an overview of some teacher related problems which can impede the attainment of the MDGs as well as the general goals of education. The paper also suggest individual teachers commitment by way of belonging to STAN and other professional bodies, and government interventions in some of the challenges facing teachers as the way forward.*

I. Introduction

Worldwide, education is considered as an important tool for attaining national goals. Education provides learners with skills needed for survival. It is as a result of the importance of education the Federal Government of Nigeria introduced the Universal Basic Education whereby education is free and compulsory for all citizenry at least to the secondary level of education.

Science technology and mathematics (STM) education is a very important aspect in the development of any nation. STM education has a lot to offer that is why many nations Nigeria inclusive are craving for its advancement.

The curriculum of any education programme is a vital tool which spells out what needs to be done and how it has to be done.

In line with the MDGs the entire UBE and senior secondary school curriculum has been restructured. In the findings of Okoli, Egbononu & Ugbaja (2011), the basic science curriculum contents are very relevant in most areas which are needed for the attainment of the MDGs. Similarly, Ugwu, Ofuebe & Etubon (2011), Onwuachu (2011) indicated that all the areas of science and technology curriculum have been restructured towards the Millennium Development Goals (MDGs) which include to eradicate extreme poverty and hunger, reduce child mortality, combat HIV/AIDs, malaria and other diseases, ensure environment sustainability amongst others.

In the attainment of any curriculum goals the teacher is the central figure. The teacher is the pivot of any educational programme, it is the teacher who translates policies into actions. Afe in Asiriuwa (2011) opines that even with the best of educational policy and design and expenditure of colossal sum of money for education, the ultimate realization of any set of aims for education depends on the teachers as he will ultimately be responsible for translating policy into action and principle into practice in his interaction with the students.

The teacher is an indispensable tool in the attainment of any educational goals. It is what and how a teacher teaches his students will learn. The teachers however are faced with serious challenges. No educational system can rise above the quality of its teachers (FRN 2004). In the light of the foregoing, the teacher needs to be empowered to be able to meet his responsibilities. It is against this background this paper highlight the teacher factors which if not addressed can easily impede the attainment of the MDGs.

II. Challenges Of The Stm Teachers

Teacher supply

Nigeria is facing shortage of STM teachers. This shortage is even worst in the rural schools. Akinsola, Lawal & Oyedokun (2007), Ugwuda (2011) reported that a very low percentage of teachers are found in the rural areas.

The dearth of teachers makes a single teacher handles virtually all the students for that particular subject in that school. This situation makes the teacher worked up each day and can not be effective as he ought to.

The situation makes most teachers avoid the student – centred approaches to teaching like project, field trips, excursions, demonstrations process based approaches they rather resort to the teacher centred methods which are not effective for science teaching. Olorukooba (2007) observed that Nigeria science classrooms are dominated by teacher – centred methods which have been found to be ineffective. Aside the ineffective teaching methods, assessment which are supposed to be by continuous assessment to evaluate teaching effectiveness and also to evaluate the academic progress of each students for feedback has not been properly done.

Large Class Size

The explosive enrolment due to the UBE programme has resulted in overcrowded classes. STM demands that students should always be involved in practical work, Okeke & Chinwe (2006) have emphasised 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 over crowded condition of the classes coupled with the absence of laboratory support staff, teachers in majority of cases carryout practicals 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. The state of affairs will have a negative effect on overall productivity.

Teacher Quality

Some of the teachers found in our school 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. According to Amuzie (2008) these category of students show high level of compromise and when they score 39% or 40% in an examination that is rated to be 100% they celebrate and jubilate with great excitement and enthusiasm. Such teachers do not teach but cheat and bring poor image to teachers, moreso as it is believed that the teaching field is a place for the academically weak and a dumping ground where anybody can fit into. A job for all comers can not be rightly called a profession remarked Borishade in Adedibu & Olayiwola (2005). Again teachers who studied art related subjects are made to teach the sciences and technology subject at both secondary and primary schools especially in the rural areas. All these can lead to a falling standard in education.

Deficient Curriculum

The teacher education programmes are long over due for reviewing. There seems to be a mismatch between the teacher education programmes and the secondary school curriculum requirements which has led to some of the inadequacies found in some graduate teachers. Ovute in Ovute & 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 Ovute most N.C.E graduates can not adequately fit into the new Basic Education classroom for effective delivery of the U.B.E programme. Similarly Lesi, Awobodu & Adegbamigbe (2009) stated that there is a large mismatch between the skills required for the modern economy and the education imparted to most of the students in higher learning. Teachers, teach according to the way they have been taught or trained.

Unavailability Of Teaching Facilities

The Nigerian schools lack teaching equipments/facilities necessary for effective teaching and learning to equip our youths with knowledge and skills needed for their survival and the nation. Most schools especially in the rural areas lack laboratory spaces let alone the equipments.

There is a limit to what teachers can improvise and the extensive sourcing for and preparation of teaching materials at every stage couple with all the problems like overcrowded classrooms, sometimes administrative work etc is very cumbersome and an additional stress.

Overloaded Syllabus

There is need to reduce pressure on the science teachers. To be good scientist and innovators 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) found out in a survey she concluded that the SSCE biology curriculum is overloaded. Similarly Ofoegbu (2003), Adeyegbe & Oke in Lawal (2011) lamented over the overloaded syllabus in each of the science. This they pointed out makes the teachers skip or haphazardly treat some topics.

Capacity Building

Science is dynamic in nature and new methods and strategies are continually being evolved to facilitate its teaching hence teachers need to update and upgrade themselves by attending training programmes. These updates will enable them live up to expectation by exhibiting mastery of subject matter as well as distinguish themselves as experts in pedagogy.

However, teachers due to personal financial constrains and lack of sponsorship from their various state government hardly belong to professional bodies like STAN and SAN neither do they attend seminars, workshops and conferences or go for further studies where they can update themselves.

Awosika (2006) in a survey found out that only 25% of his subjects had attended workshops, seminars, conferences and symposia. It is through these type of training programmes teachers are afforded the opportunity to learn and use various tools and techniques.

Remunerations

The sciences have mostly to do with practical work in and out of the laboratories, it involves some hazardous exercises and the use of poisonous chemicals.

In the oil companies and firms, workers who do hazardous jobs are covered by insurance policies either in cases of injuries or death and are also paid some special allowances.

In the case of the science teachers no recognition is given, in some states they are paid peanuts like ₦1,000. This uncompensated working condition does not motivate the teachers and so they can choose to do their work haphazardly. Good reward begets hard work.

Work Environment

Teachers need to be accorded respect and honour for the work they do. In some schools it is observed that teachers work in harsh conditions, teachers stand and teach in classrooms and sit and work in offices without fans. Some teachers do not have tables to work on, in some cases they even manage half broken chairs in over congested staff rooms, in majority of situations they manage with dirty non functional toilets and many more which can make them less productive.

The Way Forward

From the discussion above, the following are suggested as the possible way forward.

- In some states there has been no employment for over ten years. Government should recruit more STM teachers and laboratory support staff and evenly distribute them between the urban and rural schools. Secondly there should be reshuffling from time to time to avoid the rural-urban migration.
- Thorough screening examinations should be conducted for applicants so as to avoid the selection of the unqualified who got their papers by treacherous means. The Post University Matriculation Examination (U.M.E) for teacher education should also be handled with strictness. This will make teachers to be taken serious.
- The entire teacher education programmes should be reformed so as to enable our graduates fit into the existing primary and secondary education programmes.
- More classroom blocks should be erected within existing schools to decongest the classrooms and reduce teachers workload. Where need be, more schools should be established in neighbouring communities.
- Government in collaboration with other stakeholders should ensure adequate provision of instructional facilities. This will ensure effective realization of the objectives of science and technology education.
- The existing primary and secondary school curriculum should be revisited to see if there exist irrelevancies so as to reduce its content to avoid haphazard teaching of topics.
- Teachers should endeavour to be members of professional bodies like STAN and also develop the habit of buying and reading journals to update themselves. The state ministries of education likewise should be organizing workshops, seminars and symposia for teachers, this will help in promoting the effectiveness of the teachers of STM.
- Payment of teachers allowances should be revisited and enhanced.
- Government should improve the working environment of the teachers by providing adequate staff offices, as well as provide all other things for their comfort.

III. Conclusion

It is known that the teacher is an indispensable tool in the attainment of any educational goal hence government should be more serious in strengthening them to ensure the workability of the national education reforms.

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