THE ROLE OF MATHEMATICS EDUCATION INTRANSFORMING NIGERIA SOCIETY

BY

ALATA, SHAKIRAT MUHAMMED

DEPARTMENT OF COMPUTER SCIENCE

Abstract

What students learn and how they are being taught goes a long way in transforming their future for better living in Nigerian society. This paper discussed the place of Mathematics in various aspects of human life. It emphasizes the importance of the subject and usefulness of mathematical knowledge in Nigerian society. It pointed out some challenges of Mathematics Education, steps to overcome the challenges. Improving the interest and performance of students in mathematics, and the role of Mathematics Education in transforming Nigerian society. Thus, the researchers recommended among others that government should try and release funds to schools in-order to train and retrain Mathematics teachers through in-service training workshops, seminar to enable them deliver their lesson effectively and also improve their mathematics knowledge in transforming students in Nigerian society.

Introduction

The place of education for the attainment of national objectives and making changes in the society or nation for the better and effective functioning of the society is well recognized. It has always been acknowledged, that, no nation can rise above the quality of the education its citizens get. Similarly, the quality of life in any society depends significantly on its standard of Education (Onwuka &Moseri, 2011) and the educational standard of any nation also has something to do with the quality of Mathematics Education. (Moseri & Onwukasmart, 2010)

Mathematics provides the structure and methodology for the study of virtually all the important modern disciplines. Mathematics provides an important key to the understanding of the world in which we live. Everyday life would be quite difficult if one has no knowledge of mathematics what so ever Agwagah, (1993).

In the National Transformation agenda, no progress will be made without adequate use of mathematics. It is the queen of sciences. It should be used in the National Transformation Agenda as an essential tool in many fields, including natural science, engineering and technology, medicine and social science. Mathematics is an important subject, the knowledge of which enhances a person's reasoning, and problem-solving skills. Mathematics as a tool, its knowledge and skills are the bedrock of all societal transformation and transfer of ideas into reality (Abubakar and Afe buame 2011).

Idahosa, (2005) stated that a nation cannot develop meaningful technology without science, just as science cannot develop without Mathematics. Mathematics Education is the ongoing process of study that facilities teaching learning and acquisition skills of mathematics in order to enhance national development. Mathematics Education is able to bring about qualitative change in everyday life and serves as an important tool in understanding many other subjects more clearly. Otunu-Ogbisi & Ukpebor (2010) defined Mathematics as an indispensable tool for the transformation of technological development to reality, since it communicates the idea of growth, expansion and improvement in goods and services emanating from practical applications of science to reduce poverty, crime and security problems. Solvers Esangbedo, (2008) note that there can be no proper development without Mathematics. Otherwise, it will become development without growth.

As a result of this background, this paper examines the role of Mathematics Education in transforming Nigerian society, specifically, challenges of Mathematics Education towards transforming Nigerian society and improving the interest and performance of students in Mathematics towards transforming Nigerian society.

Challenges of Mathematics Education Towards Transforming Nigerian Society

Mathematics is one of the oldest school subjects that are indispensable for individual and societal development. It is widely used in everyday life such as politics, economics activities, science and technology. However, it is pitiable and a thing to be lamented about, that this very important Queen, king and servant is least desired by the learners. Aminu (2010).

The performance of learners in this very important subject is very poor at all levels, right from primary school. Pupils begin to complain about mathematics despite the importance of mathematics to national development. Its teaching and learning is faced with many problems which have resulted in the consistent poor performance. Eze (2011).

This situation has bothered researchers, parents and mathematics educators, and many reasons have been adduced for this appalling state of poor achievement in mathematics. According to Akolo (2010); Onwuka and Moseri (2011) reveal that most prominent among these problems are:

Students' negative attitude towards mathematics.

Acute shortage of qualified professional mathematics teachers

Adherence to old teaching methods in spite of exposure to more viable alternative

Exhibition of poor knowledge of mathematics contest by many mathematics teachers
Inadequate instructional materials
Undue emphasis on syllabus coverage at the expense of meaningful learning of mathematics concepts.

After and when poor performance is demonstrated in a subject like Mathematics, it is transferred to other related ones. Eze (2011)

Improving the interest and performance of students in Mathematics Towards Transforming Nigerian society.

Having enumerated some of the challenges faced by Mathematics Education in Nigeria, it is normal to examine each of them in order to discover some of the things that could be done to eradicate these problems:

There is the need to reverse the negative tide of poor performance in Mathematics through developing counseling packages for learners to change their attitude.

Sufficient and Qualified Teachers: Government should try and provide sufficient and qualified mathematics teachers to our schools that would make students have a good understanding of mathematics concepts, easily connect the abstract of mathematics with reality.

Mathematics teachers should use concrete materials in order to provide tangible ways for students to explore mathematics ideas.

Mathematics teachers should try to analyze the concepts of Mathematics to its minutest level and they should stop jumping steps in problem solving assuming students would know the steps by themselves.

Students should be given opportunity to participate in the teaching learning process to build their confidence in Mathematics. According to Eze, (2011) quoting a particular Chinese adage and Ukeje, (1979) states that, "what I hear, I forget, "What I see, I remember," What I do, I understand."

The Role of Mathematics Education Towards Transforming Nigerian Society.

Mathematics is the bedrock of science and technology, which is the springboard of national development. Mathematics today is having an enormous impact on science and society. The influence may be silent and appears hidden yet it has shaped our world in many ways. Mathematical ideas have helped the revolution in electronics, which has transformed the ways we think and live today. The following areas are highlighted as some of the vital role mathematics play in transforming Nigerian society.

Information and Communication Technology (I.C.T): - The information and communication technology (ICT) of today has transformed the world into a global village. These advances in science and technology are made possible by the numerous developments in pure mathematics. Mathematical sciences have helped improve the ability to predict weather, to measure the effects of environmental hazards, project the outcome of electrons etc. Mathematics methods, structures and concepts have become indispensable to the functioning of the technological society. Indeed, in this period of hi-technology and internet, super highways, no nation can make any meaningful achievement, particularly in Economic development without technology whose foundation are science and mathematics. In this present age of science and technology, the achievement of any meaningful economic development is largely dependent on science and technology which is also dependent on mathematics. (Zakama 2013)

Government: Mathematics assists the government in knowing the population of people in country in order to know the social amenities to be provided. It also creates ability and readiness to think as leaders in solving social, political and the economic problems.

Law: lawyers argue cases using complicated line of reasoning. They also use knowledge of mathematics in sharing property.

Engineering: (chemical, electrical, civil industrial and material). Any field of engineering cannot escape the frequent use of calculus. i.e. travel by aero plane would not be possible without mathematics of airflow and of control systems. Mathematics provides models, symbols, physics, and logic that are needed in process on mechanization. Fakinde (1999).

Agriculture: Mathematics helps farmers to measure their land and estimate particular harvest in a particular land. It allows the farmers to determine the number of seeds, amount of water, proper amount fertilizers and equal amount of chemical to produce good crops. According to Ibidapo Obe (2011) sound mathematics knowledge is fundamental in addressing the critical issues of economic transformation and globalization, reduction of unemployment, poverty alleviation, hunger and disease and sustaining effective use of natural resources facing the world today.

Medicine: mathematics is used for analyzing data on the causes of illness and how medical doctors carefully administer the proper amount of drugs for patients.

Entrepreneurship: The success of entrepreneurs requires some levels of mathematical skills. According to Scott (2013), entrepreneurs with sound knowledge of mathematics manage their entrepreneurial work more efficiently than their counterparts who are not proficient in the

subject. If the Mathematics teachers have the herculean task of developing those basic skills that the concerned students need, then the current wave of unemployment being witnessed globally will be reduced, and also, it will minimize overdependence on white collar jobs.

Physical Sciences: (chemistry, physics, oceanography, astronomy) require Mathematics for the development of their theories.

Mathematics is needed by everybody. The level of Mathematical knowledge needed depends on the profession, goal and stage of life of the learners. Tradesmen e.g. (carpenters, electricians, mechanics and plumbers estimate their job cost using technical Mathematics skills specific to their field.) The hairdresser develops an ability to match heads with new hair styles using Mathematics. Esangbedo (2014)

Conclusion

Mathematics Education has become a veritable and indispensable tool in the transformation of Nigeria society. So, it is time for the Government to find everlasting solution to all the problems and challenges facing the teaching of Mathematics Education.

Recommendations

Teachers should try to sustain students' interest in Mathematics by making the subject practical and experimental, because a good teaching job is judged based on the extent the student have been inspired to think and create ideas.

Government should try and release funds to schools in order to train and retrain Mathematics teachers through in-service training, workshop, seminars to enable them deliver their lesson effectively, use recent and appropriate teaching methods and instructional materials.

Enough time should be allotted to Mathematics lesson in schools in order to give enough room for problem solving in the classroom.

Parents, teachers and counselors need to guide students to be more committed and develop good study habits in Mathematics.

The standard teacher-pupil ratio of 1:40 as stated in the national policy of Education should be maintained.

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