POOR PERFORMANCE OF NIGERIAN STUDENTS IN MATHEMATICS IN SENIOR SECONDARY CERTIFICATE EXAMINATION (SSCE): WHAT IS NOT WORKING?

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Abstract  
This paper considered the importance of mathematics to the individual as well as to the nation. It noted that students’ performance in this all important subject has been dismal especially in the Senior School Certificate Examination (SSCE). The poor performance trend is indeed worrisome as seen from the summary of students’ result in SSCE mathematics covering many years. This is despite various efforts by government and its agencies, private organizations and other stakeholders in the education business to boost achievement of students in the subject. It becomes, therefore, a clear indication that certain things have still not been put in place. The paper considered these problems yet unsolved and proposed a way forward.

Keywords: Mathematics, importance, performance, way forward.

Introduction  
Every individual needs mathematical knowledge to function intelligently and efficiently in his or her world. Mathematics is one subject that is an integral part of everyone’s life and affects virtually every field of human endeavour. An average man needs mathematics to survive no matter how rudimentary. There is no doubt about the fact that an individual can get on sometimes without knowing how to read and write, but can never push on smoothly without knowing how to count, measure, add and subtract. The many uses and applications of mathematics in the home, office, in business, in industries, in agriculture, in decision making and even in governance abound and are innumerable. Usman (2002) noted that in everywhere we go, everything we do or propose to do, either the structure of mathematics or its applications play a vital role and this is why most countries, races and peoples put emphasis in all aspects of studying, developing, and applying mathematics.

Mathematics is also a body of knowledge essential for the achievement of a scientific/technological nation. Ale and Lawal (2010) stated that the line of demarcation between the developed and the underdeveloped nations is based on their level of mathematical attainment and ingenuity. According to them, mathematics is an undisputed agent of national development and wealth creation. Confirming this statement, Nosa and Ohenhen (1998) stated that evidence abound to show that nations that embrace mathematics, science and technology enjoy better standard of living and are less dependent on others.

The word is speedily becoming a global village and that makes it even more imperative that all individuals have a better understanding and appreciation of mathematical procedures and methods of reasoning to be carried along. Adedayo (1997) stated that knowledge of mathematics promotes the habit of accuracy, logical, systematic and orderly arrangements of facts in the individual learner. It also, he said, encourages the habit of self-reliance and assists learners to think and solve their problems themselves. Mathematical knowledge indeed equips individuals with the skill to solve a wide range of practical tasks and problems they may encounter in life. Saint Paul Public School (2007) commenting on the importance of mathematics stated that the study of mathematics helps the mind to reason and organize complicated situations or problems into clear, simple and logical steps. The reality, they noted, is that in a society such as ours, high paying jobs often demand someone who can simplify complicated situations and reduce them to the level everyone can understand. They therefore insisted that by knowing more mathematics, students give themselves the competitive edge they need to vie for such high paying jobs.

It is, thus, vitally important both to the nation and to the individual that all students receive a quality mathematics education. Mathematics is no longer important just in so far as it is a basic requirement
for entry into institutions of higher learning. It is now more than ever before an essential ingredient in the education of every Nigerian child especially in this technological era.

Unfortunately, students’ performance in this all important subject has been consistently poor especially in the Senior Secondary Certificate Examination (SSCE) organized by the West African Examination Council (WAEC) and the National Examination Council (NECO). SSCE is the examination written by Nigerian students at the end of their secondary education and it is used to measure the extent of knowledge and skills the students have acquired at that level of education. The result of this examination is also used as prerequisite for admission into institutions of higher learning where students could go to pursue courses in their areas of interest. In most Nigerian institutions, a credit pass in mathematics and English language is required to read any course whatsoever. However, students’ results released yearly by the examination bodies continue to show a steady trend of mass failure of the students in mathematics. The table below gives credence to this fact.

Table 1: Students Performance in May/June SSCE (WAEC) 2000-2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Total No of Candidates</th>
<th>No with Credit (A1-C6)</th>
<th>% (A1-C6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>643,371</td>
<td>11,090</td>
<td>32.81</td>
</tr>
<tr>
<td>2001</td>
<td>1,023,102</td>
<td>383,955</td>
<td>37.53</td>
</tr>
<tr>
<td>2002</td>
<td>908,235</td>
<td>309,409</td>
<td>34.06</td>
</tr>
<tr>
<td>2003</td>
<td>926,212</td>
<td>341,928</td>
<td>36.91</td>
</tr>
<tr>
<td>2004</td>
<td>832,689</td>
<td>287,484</td>
<td>34.52</td>
</tr>
<tr>
<td>2005</td>
<td>402,982</td>
<td>38.20</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>482,123</td>
<td>41.73</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>598,129</td>
<td>46.90</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>779,863</td>
<td>56.96</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>622,384</td>
<td>45.33</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>560,974</td>
<td>41.51</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>587,630</td>
<td>38.15</td>
<td></td>
</tr>
</tbody>
</table>

Consequently, the number of students meeting University requirement yearly in the country is very low. A greater majority of students fail the subject each year as can be seen from the Table, and so end up forfeiting the pursuit of many careers that should have benefitted them and the country better. This poor performance trend is despite all efforts by the government and other stakeholders to boost students’ achievement in the subject. It is therefore a clear indication that there are still problems yet unsolved.

Improving performance of students in mathematics

1. Research Efforts
   Over the years, mathematics educators have not relented in searching for better ways of teaching the subject. There have consequently been a myriad of research studies that have sought to identify the numerous factors affecting the teaching and learning of mathematics and address the problem of poor achievement of students in the subject. However, despite their findings and recommendations, the problem of poor performance of students in mathematics still persists.

2. Seminars, Conferences and Workshops for teachers
   Faculties of Education and some of their departments in Colleges of Education and Universities in Nigeria, Federal and State Ministries of Education, government agencies like the Teachers Registration Council of Nigeria and the Universal Basic Education Board, the Mathematical Association of Nigeria (MAN) and some other non Governmental Organizations regularly organize conferences where the plight of teachers as well as other burning educational issues are always discussed. Frequently too, seminars and workshops are organized by these and other groups including private organizations like the Macmillan Publishing Company, where teachers are pulled together to be exposed to innovative instructional strategies and resources that can be used to make mathematics learning meaningful. The effect of such efforts has not shown itself in the
performance of the students as can be seen from Table.

3. Activities of the National Mathematical Centre(NMC) and its Mathematics Improvement Project(MIP)

Ale and Lawal (2010) listed three major activities of the NMC to include

a. Training and developing high level manpower in mathematics sciences
b. Identifying, encouraging and in fact training young talents in mathematical sciences
c. Encouraging and supporting activities leading to the improvement of the teaching and learning of mathematical sciences at all levels.

The Mathematics Improvement Project according to them is an attempt by the centre to revamp mathematics teaching and learning at the lower and secondary school levels. They stated, is to promote, reawaken, reactivate and re-energize the roles of mathematics teachers (class teaching, students’ assessment and managerial activities) effectively and efficiently as well as the roles of the students to learn mathematics with ease. This they said will translate to students’ greater performance measurable by the number of credit passes in public mathematics examinations (WASSCE/SSCE).

The NMC was established by the Federal Government in 1989 and judging from the analysis in Table 1, it does not seem as if the centre and its programme has made any noticeable impact in the overall performance of Nigerian students in mathematics. It seems, however, to be working in only a few MIP pilot schools and States.

4. Mathematics Competitions for Students

The Mathematical Association of Nigeria (MAN), the National Mathematical Centre and even some private organizations/companies like the Promasidor Nigeria Limited (Makers of Cowbell Milk) frequently organize mathematics competitions to help encourage the study of mathematics. Some of these competitions have become an annual event, yet the story of poor performance in mathematics remains unchanged.

The following are still issues yet unresolved that are still contributing to the poor performance of students in mathematics.

1. Method of teaching employed by some teachers in Schools

One problem with Mathematics teaching and learning is that most teachers continue to keep faith with the old system of teaching that has nothing interesting or enjoyable to offer to the learners. Eniayeju and Azuka (2010) noted that over 90% of the teachers that attended the National Mathematical Centre workshops from 2002 to 2010 still use the traditional method of teaching. Happenings in some Nigerian classrooms still present a situation where topics are just simply introduced and exercises are selected from the textbook and solved for the students who are expected to learn by rote memory of formula and facts. Some of the time, the students are not even encouraged to ask questions. Results of studies conducted on mathematics achievement and the deteriorating students’ achievement in the subject clearly demonstrates the failure of this delivery system.

2. Lack of passion for the profession occasioned by poor pay and low respect from the society

Many teachers are not able to boost students’ morale in learning mathematics or any other subject for that matter, because their own morale as teachers is low and no one can give what he or she does not have. The Nigerian society does not regard teachers and yet expect the best from them. Frequently, parents insult and maltreat teachers who dare raise a finger on their children, and most of the time this is done in front of the children. Teachers therefore discharge their duties with care making sure no one is hurt so as to retain their ego. Things end up not going very properly the way they should as a result of this. No child, for instance, in this scenario is cautioned for not doing assignments or school work. They children then grow to become lazy and this is not checked at any point. Furthermore, teachers are generally poorly paid and do not command the same respect people in some other professions command financially. This also forces some of them to find other means of livelihood sometimes alongside the teaching job and obviously,

Problems pending
one of the jobs in this circumstance must definitely suffer.

3. **Not enough quality and seasoned teachers to teach the subject**

The teaching job in Nigeria apparently is not an attractive one and so students graduate as mathematics educators and set out to find other things to do apart from teaching. The few that remain in the job are therefore over stretched and that often affects their productivity. Some of the time, some schools go out of their way to employ non experts to teach mathematics. This is a very serious problem that has continued to linger and is part of the reason we have all the problems of poor performance we have today in schools. Adaramola (2012) found that majority of teachers teaching mathematics in secondary schools in Port Harcourt are not qualified. Anene and Okpala (2012) in a similar study in Anambra State also found that mathematics teacher provision in the State is not adequate. In another study in a rural area in Delta State, Ekwue and Umukoro (2009) sampled 47 mathematics teachers out of which 17 (36.2%) were of chemistry, physics, business education and other specializations. A teacher should be well trained for the job and anyone who wishes to teach must undergo that training for maximum performance.

4. **Lack of Mastery of Subject Matter by some Mathematics teachers**

Non mathematics experts are employed to teach mathematics in schools and so expectedly they lack knowledge of the subject matter and the methodologies for teaching it. Surprising too, some trained mathematics teachers also display lack of knowledge of mathematics concepts which raises doubts about the process by which they acquired the certificates they possess.

5. **Politicizing Training and Re-training of teachers and recommendation of textbooks**

Politics is brought into everything in the country even in training and re-training of teachers. Some of the time, the same individuals attend workshops and seminars from schools perhaps because they are the heads of mathematics departments in their schools and the invitation letters come to them. They also return from these workshops and make no effort to call the teachers under them together to share the knowledge gained. At the end, it does amount to a wasted effort organizing a seminar as the information disseminated there only gets to a handful of individuals who may not even put it into practice. Other times too, textbooks are recommended for use in schools not based on their contents and how much of the features of a good mathematics textbook they possess, but because the publishers are able to push their way through more than others. All these continue to pose problems and affect the performance of students in the subject.

6. **Research Results not getting to the Implementers of the findings**

Research results are tucked away in shelves in Universities, Colleges of Education and other places where researches are conducted. They do not get to the implementers of the curriculum who ought to be made aware of the findings so as to be able to effect changes consequently.

7. **Most teachers are not Computer literate**

It is sad to note that most teachers in secondary schools are not computer literate and so cannot assess information on their own from the internet. Innovative teaching methods and best approaches for teaching mathematics are posted daily on the net but these teachers cannot assess them. Except for what they get in workshops, and that is if they attend, some teachers have no other means of updating their knowledge base.

**The way forward**

Sule (2009) noted that instructional strategies in mathematics will improve if some of the problems plaguing the study of mathematics in Nigeria are solved. In view of this, the following suggestions are made for a way forward

1. First and foremost, the teaching job considering what it entails and what a poor job at it can bring about should be made attractive by the government and other owners of schools. This will enable teachers to be dedicated to the job and do their best to succeed. Moreover, many students are enrolled yearly in Colleges and Universities to study mathematics and they also graduate in their numbers yearly. The issue, therefore about not having enough qualified
mathematics teachers in schools is a clear indication that most of these graduates go in search of other jobs and this is simply because teaching is not lucrative.

2. The NMC’s Mathematics Improvement Project should be taken to more schools and more States in the federation so that its impact would become more noticeable in the SSCE mathematics results of students.

3. Efforts made at carrying out researches should not be allowed to waste away. Research results should be made to reach the implementers of the findings to be able to achieve the desired results.

4. The recommendation of mathematics textbooks for use in schools should be taken very seriously and should be based on nothing other than the text satisfying the features of a good mathematics textbook that will secure students’ interest in learning mathematics.

5. Mathematics teachers should take turns in attending workshops and seminars and each person on return should expose others in the school to the knowledge he or she gained.

6. All teachers should as a matter of urgency seek computer literacy and not wait for their schools or anyone else to organize training for them. Mathematics Education students should concentrate on their studies in school and endeavour to acquire knowledge and not seek certificates by fair or foul means with nothing to show for it.

Conclusion
Mathematics is not a subject to be toyed with by any individual that wants to be productive or any nation that strives for scientific/technological development. The poor performance of Nigerian students in the subject portrays danger for a country in quest of technological advancement. All hands should therefore be on deck to make the acquisition of mathematical knowledge possible for all students for the benefit of all.

References


Eniayeju, A. A. & Azuka, B. F. (2010). Impediments to mathematics teaching at the universal basic education level in Nigeria. Journal of Mathematical Sciences Education. 1(1)54-71


