



**AN ASSESSMENT OF SENIOR SECONDARY SCHOOLS MATHEMATICS  
CURRICULUM IMPLEMENTATION IN FEDERAL CAPITAL TERRITORY  
ABUJA NIGERIA**

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**Abstract**

The research work is carried out on an assessment of senior secondary schools mathematics curriculum implementation in Federal Capital Territory Abuja. Research design used for this study was descriptive survey. Population of the study comprised of 917 mathematics teachers which include supervisors from inspectorate, out of which 270 mathematics teachers and 30 inspectors totalling 300 respondents were randomly selected for this study. Data collected were analyzed using simple frequency and percentage for demographic information of the respondents and chi-square statistics for research hypotheses which were tested at 0.05 level of significance. From the findings, suggested methodologies in mathematics curriculum were not appropriate for the effective implementation of mathematics curriculum; most of the suggested instructional materials were not suitable for mathematics contents; teachers' qualification had significant effect on implementation of mathematics curriculum and overcrowded classroom also had effect on implementation of mathematics curriculum in senior secondary schools Abuja, Nigeria. Based on the findings, it was recommended, among others, that schools should have all the means necessary for a curriculum to be implemented the way it is originally intended. Hence, teachers should be supported with rich and satisfactory conditions in classrooms.

**Keywords:** Assessment, Senior Secondary Schools, Mathematics Curriculum and Implementation

**Introduction**

The selection of Mathematics as one of the core subjects offered in primary and secondary schools in Nigeria, as well as its status as part of mandatory requirement for admission into Post-Secondary Institutions in the country (i.e. attainment of pass at credit level) are clear indications of the importance of the subject in Nigeria education system. In addition, job opportunities and recruitment exercises into agencies are accessible with good performance or success in Mathematics. Most aptitude tests for employment, promotion and

placement are made up of questions that are based on Mathematics. These are significant justification of the importance of Mathematics for individual personal development and success. At national and global levels, there is a general consensus that economic development, viability and stability are solely, in the 21st century, scientific and technologically based. This means that, economic prosperity of a nation depends largely on the scientific and technological development, which cannot be possibly achieved without sound, effective and strong Mathematics education (Aminu, 2005). The importance of Mathematics is therefore multi-dimensional, global and undisputable.

Stakeholders in education and relevant established examination bodies like WAEC, NECO, and NABTEB have been worrying over the poor performance of students in Mathematics. Similarly, students' negative attitudes towards the subject coupled with their poor academic achievement in the subject have also warranted discussion among scholars especially on possible precipitating factors. Evidences that are obviously abound in the existing literature are the traditionally aged-long factors like, unqualified teaching staff, lack of teaching and learning facilities, large class size, as well as, teachers and students attitude as the much quoted reasons. But as life and society are dynamic, other precipitating factors can be highly influential in affecting Mathematics teaching and learning processes in schools, especially factors that relate to curriculum content completion.

Evidence abounds to justify that many candidates (during standardize examination) could not answer fifty percent of the questions, not because of time factors, but inability to confidently and independently attempt the questions (Aminu, 2005). Many candidates therefore resort to examination malpractice. Based on these seeming problems, one begins to ask, "Did teachers really teach their students all the necessary topics provided in the Mathematics curriculum?" This question is fundamentally the basic background to this study. The study is therefore an attempt to find out the level of Secondary Schools Mathematics curriculum implementation.

Factors related to curriculum contents, activities and successful completion of all the topics that are expected to be taught to students at different levels of education, within a stipulated period of time are found to be very effective in students' academic performance, attitude to learning and achievements (Hamisu, 2008). Consequently, students' poor academic performance, attitude to learning and achievements are influenced by factors related to curriculum contents and the level of curriculum implementation. Scott (2001) is of the view that curriculum contents that are heavily characterized by factors of traditional approaches are detrimental to teaching process as according to him, such curriculum limits learners' active participation in learning and equally makes teaching and learning flower. In the same vein, Tobin (2000) opines that, poor implementation of curriculum contents results in learners' poor academic performance in examination as well as formation of negative attitude to learning. In view of the scholars assessment and prevalent social realities relating to students academic incompetence in Mathematics, poor attitude to learning and massive students failure are also imparts to the study of this nature.

Curriculum development is not a new concept in Nigeria education system. However, issues of curriculum, either in an explicit or an implicit are inextricably linked to current thinking and action on educational system around the world (Ajibola, 2008). According to Kelly (2008), curriculum is all the learning which is planned and guided by the school, whether it is carried out in groups or individually, inside or outside the school. In other

words, curriculum specifies in advance what we are seeking to achieve and how we are to go about it. In his own submission, Blenkin (2012) defined curriculum as a body of knowledge contents and or subjects. Curriculum in fact is an organized plan of course outlined with the objectives and learning experiences to be used for achievement of these objectives. In a wider perspective, it is a way of preparing individuals to become productive citizens and useful members of the society to which they belong. Thus, curriculum is a tool of education to educate and humanize the whole man. The effort put in place by the teachers and the students during teaching and learning process is curriculum implementation. Ughamadu (2002) defines curriculum implementation as the task of translating curriculum document into the operating curriculum by the combine efforts of the students, teachers and others concerned. Similarly, Onyeachu (2008) viewed curriculum implementation as the process of putting all that have been planned as a curriculum document into practice in the classroom through the combined effort of the teachers, instructional materials, psychological and social environment.

All the definitions show that curriculum implementation is the interaction between the teachers, learners and other stakeholders in education geared towards achieving the stated objectives. The various suggested definitions have indicated that curriculum implementation requires the combined effort of many in order to succeed; as such it is not an inclusive responsibility of teachers alone. In addition, many variables as indicated by scholars are needed and apply for the effective evaluation of the level of curriculum implementation. Such variables include; curriculum content, instructional materials, teachers' competence, as well as learners' population size in a given learning environment or context. The study is therefore an attempt to investigate the level of implementation of Mathematics curriculum in Secondary Schools Abuja and its relation to various factors considered viable to learners performance, interest, attitude and motivation.

### **Statement of the Problem**

Poor implementation of curriculum contents can lead to multiple problems. One of the problems is students' poor performance in both internal and external examinations. This is because all the questions set are based on the syllabus or curriculum contents. But in a situation where students are not adequately taught and prepared, they will find it difficult, if not impossible to answer questions, as such failure is unavoidable. Another seeming problem is that which involves students' future performance or learning in tertiary institutions. Courses and topics at that level are continuation of what students learnt at the Senior Secondary School level, as such poor implementation of curriculum content makes students incapable to cope appropriately with the academic challenges at the post Secondary Schools level. Problems associated with curriculum contents and designs are also part of the identified factors that negatively affect full implementation of curriculum in secondary schools. This issue is also part of the problems being investigated in the study. Curriculum contents and activities that are based on traditional approach are considered by constructivists as teacher-dominated, less appealing, with little or no provision of learners' active participation, these factors are according to constructivists, problem that negate full implementation of curriculum contents in schools (MacDonald, 2000 & Mehmet, 2005).

## Research Questions

The following are research questions that will be answered at the end of this study:

1. What is the relevance of suggested methodology to content in the effective implementation of mathematics curriculum in Senior Secondary Schools in Abuja?
2. What is the appropriateness of instructional materials in the effective implementation of mathematics curriculum contents?
3. What is the relevance of teacher's qualification/competence in the effective implementation of curriculum content in Senior Secondary Schools in Abuja?
4. What is the role of student's population in the implementation of Senior Secondary Schools mathematics curriculum contents in Abuja?

## Research Hypotheses

The following null hypotheses were formulated to guide this study:

**H<sub>01</sub>:** There is no significant difference between suggested methodology and content in Senior Secondary School Mathematics Curriculum and effective implementation of Mathematics Curriculum in Senior Secondary Schools in Abuja.

**H<sub>02</sub>:** There is no significant difference between instructional materials and effective implementation of curriculum content in Senior Secondary Schools in Abuja.

**H<sub>03</sub>:** There is no significant difference between Teachers qualification and effective implementation of mathematics curriculum in Senior Secondary School in Abuja.

**H<sub>04</sub>:** There is no significant difference between student's class size and effective implementation of mathematics curriculum content in Senior Secondary School in Abuja.

## Significance of the Study

The research will be beneficial by explicitly exposing the level or extent by which Mathematics curriculum contents are covered by teachers. The findings of this study will be of significant importance to supervisors in clarifying those topics or areas of Mathematics curriculum that are fully implemented by the teachers or otherwise. Findings of this study will also provide clear insight to examining bodies on the extent of coverage, so that questions can be set on those areas covered by teachers. The findings of this study is expected to be of significant importance to both teachers and educational administrators alike by means of intimating and expanding their awareness on those areas in Mathematics curriculum that are not fully implemented (if any) as well as the possible negative repercussion on poor implementation on both students and teaching-learning processes. This will serve as a viable major yardstick in solving problems precipitated by poor implementation of Mathematics curriculum in Senior Secondary Schools. The findings of this study will help to facilitate research interest in areas related to curriculum content implementation, as well as evaluation or innovation.

## Methodology

Research design for this study is a descriptive survey design. The targeted population for this study was entire mathematics teachers and inspectors of Government Senior Secondary Schools in Federal Capital Territory Abuja estimated about 834 mathematics teachers and 83 inspectors totalling 917 that served as population for this study.

However, twenty four (24) secondary schools were selected randomly from the six (6) Area Councils of F.C.T Abuja. Two hundred and seventy (270) mathematics teachers and thirty (30) inspectors were selected from these schools using simple random sampling. These inspectors were experience teachers redeploy from classroom to inspectorate.

The instrument used for data collection was questionnaire distributed personally by the researcher with the permission of the school authority and relevant agencies.

Simple percentage and frequency were used for demographic information of respondents and chi-square statistics was used to analyze research hypotheses.

## Findings

**Figure 1: Pie Chart Distribution of Respondents by Gender**

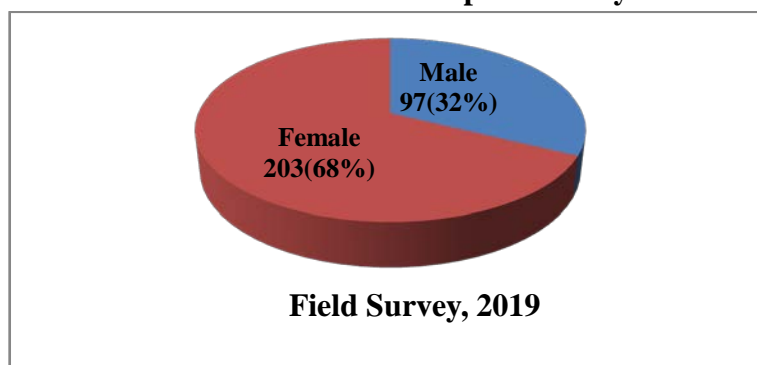
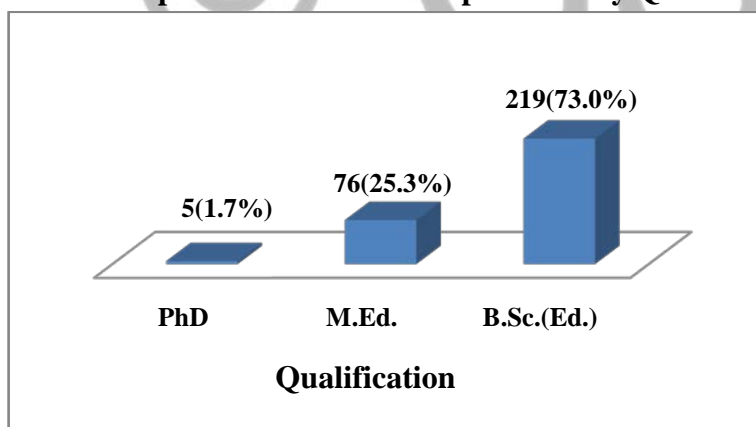


Figure 1 above describes pie chart distribution of respondents by gender. Majority (68%) of the respondents were female while 97 (32%) respondents were male teachers.

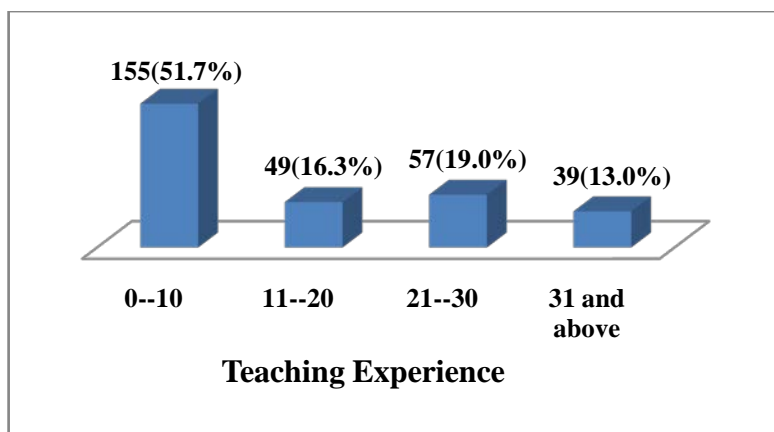
**Figure 2: Bar Graph Distribution of Respondents by Qualification**



**Field Survey, 2019**

Figure 2 above reveals the responses of respondents by academic qualifications. 219 (73.0%) respondents had first degree; 76 (25.3%) respondents had master degree and 5 (1.7%) respondents had PhD as their highest qualification.

**Figure 3: Bar Graph Distribution of Respondents by Teaching Experience**



### Field Survey, 2019

Figure 3 above shows the responses of respondents by teaching experience. 155 representing 51.7% had been teaching between 0-10 years; 49 (16.3%) respondents had 11-20 years teaching experience; 57 (19.0%) had 21-30 years teaching experience and 39 (13.0%) respondents had 31 years and above teaching experience.

### Testing of Hypotheses

**H<sub>01</sub>:** There is no significant difference between suggested methodology and content in Senior Secondary School Mathematics Curriculum and effective implementation of Mathematics Curriculum in Senior Secondary Schools in Abuja.

**Table 1: Contingency Frequency Values of Suggested Methodology and Effective Implementation of Mathematics Curriculum**

Item1	Item2	Item3	Item4	Item5
78(75.2)	97(75.2)	80(75.2)	31(75.2)	90(75.2)
70(60.8)	40(60.8)	42(60.8)	90(60.8)	62(60.8)
102(100)	112(100)	100(100)	99(100)	87(100)
50(64)	51(64)	78(64)	80(64)	61(64)

Table 1 above shows the differences in observed and expected frequency values of suggested methodology and effective implementation of mathematics curriculum. The calculated chi-square value ( $X_{cal}$ ) = 80.07 and tabulated chi-square value ( $X_{tab}$ ) = 21.03 at 0.05 level of significance with 12 degree of freedom. Since  $X_{cal} > X_{tab}$ , the null hypothesis which stated that there was no significant difference between suggested methodology and content in Senior Secondary School Mathematics Curriculum and effective implementation of mathematics curriculum in Abuja is rejected.

**H<sub>02</sub>:** There is no significant difference between instructional materials and effective implementation of curriculum content in Senior Secondary Schools in Abuja.

**Table 2: Contingency Frequency Values of Instructional Materials and Effective Implementation of Curriculum Content**

Item1	Item2	Item3	Item4	Item5
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102(91.2)	98(91.2)	80(91.2)	72(91.2)	104(91.2)
109(113.6)	105(113.6)	110(113.6)	137(113.6)	107(113.6)
49(61)	50(61)	90(61)	62(61)	54(61)
40(34.2)	47(34.2)	20(34.2)	29(34.2)	35(34.2)

Table 2 above shows the differences in observed and expected frequency values of instructional materials and effective implementation of curriculum content. From the table, calculated chi-square of 46.57 is significantly greater than the tabulated value of 21.03 at 0.05 level of significance. Therefore, there was significant difference between instructional materials and effective implementation of curriculum content in Senior Secondary Schools Abuja.

**H<sub>03</sub>:** There is no significant difference between Teachers qualification and mathematics curriculum implementation in Senior Secondary Schools in Abuja.

**Table: Contingency Frequency Values of Teachers' Qualification and Effective Implementation of Mathematics Curriculum**

Item1	Item2	Item3	Item4	Item5
108(104.8)	106(104.8)	112(104.8)	106(104.8)	92(104.8)
119(107.2)	99(107.2)	92(107.2)	103(107.2)	123(107.2)
37(54)	53(54)	77(54)	59(54)	44(54)
36(34)	42(34)	19(34)	32(34)	41(34)

Table 3 above shows the differences in observed and expected frequency values of teachers' qualification and effective implementation of mathematics curriculum in Senior Secondary Schools Abuja. Since calculated chi-square value of 36.42 is greater than tabulated value of 21.03 at 0.05 significance value, the null hypothesis which stated that there was no significant difference between teachers' qualification and mathematics curriculum implementation in Senior Secondary Schools in Abuja is rejected.

**H<sub>04</sub>:** There is no significant difference between student's class size and effective implementation of mathematics curriculum content in Senior Secondary Schools in Abuja.

**Table 4: Contingency Frequency Values of Students' Class Size and Effective Implementation of Mathematics Curriculum**

Item1	Item2	Item3	Item4	Item5
111(38)	18(38)	17(38)	28(38)	16(38)
104(39.4)	34(39.4)	31(39.4)	20(39.4)	8(39.4)
27(95.6)	98(95.6)	100(95.6)	130(95.6)	123(95.6)
28(97)	120(97)	122(97)	92(97)	123(97)

Table 4 describes the differences in observed and expected frequency values of students' class size and effective implementation of mathematics curriculum content in Senior Secondary Schools in Abuja. From the table, calculated chi-square value of 458.68 is

significantly greater than tabulated value of 21.03 at 0.05 significance level. Therefore, the null hypothesis is rejected.

### Discussion of Findings

The study revealed that there was significant difference between suggested methodologies and mathematics curriculum implementation. In other words, the suggested methodologies were inappropriate in motivating the level of mathematics curriculum implementation in Senior Secondary Schools. It was also established that instructional materials were not adequately provided and the few suggested ones were less motivating, one-sided and incapable of satisfying the nature of individual differences, effective teaching and learning are grossly unavailable. These multiple problems associated with the use of the suggested instructional materials could not enhance speedy coverage.

The study also showed that there was significant relationship between teachers' qualification and mathematics curriculum implementation in Senior Secondary Schools Abuja. Most of the respondents that participated in the study had teaching qualification which made them qualified for teaching mathematics at that level. This is so because they had undergone different teaching pedagogies during their training in the university. Over-crowded classroom setting was also discovered as a serious impediment to implementation of curriculum content, as conducive atmosphere for effective learning was jeopardized. If the number of students exceeds the required number expected in each class, as such effective teaching and learning could not take place in such over-crowded class, and this also affects mathematics curriculum implementation in Senior Secondary Schools Abuja. In support to the findings, Adeleke (2006) opined that poor implementation of the secondary school curriculum in Nigeria has caused the missing link between the goals of Nigeria education and the achievement of the goals.

### Recommendations

Based on the findings, researchers recommend the following:

1. Schools should have all the means necessary for a curriculum to be implemented the way it is originally intended. Hence, teachers should be supported with rich and satisfactory conditions in classrooms.
2. Teachers should be allowed to have hands-on experience with the materials they are going to use while teaching.
3. There should be instructional interaction among teachers as this will provide them with rich opportunities for increasing the efficiency of instruction.
4. Government should endeavour to organize seminar/workshop, through education agencies, for teachers on effective implementation of secondary school curriculum.
5. Teachers should be encouraged to read and to continue to learn about diverse approaches in their profession and to develop effective classroom strategies.

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