

FORMATIVE ASSESSMENT PRACTICES, ATTITUDE AND LEARNING OUTCOME OF STUDENTS IN MATHEMATICS IN SELECTED SECONDARY SCHOOLS IN SOUTH-SOUTH NIGERIA

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ABSTRACT: *The study was conducted to examine the effect of formative assessment practices, and attitude on learning outcome of students in Mathematics in selected secondary schools in south-south Nigeria. Three research questions and hypotheses were formulated to guide the study. The quasi-experimental design was used in the study with a population of all Senior Secondary school three (SS3) students in Mathematics in selected public secondary schools in south-south (Cross River, Rivers and Akwa Ibom States) of Nigeria numbering 21,657. The sample of the study consisted of 541 (2.5%), SS3 students in Mathematics. The proportionate stratified random sampling technique was employed in the study. The instruments for data collection are; the Formative Assessment Practice Questionnaire (FAPQ), Attitude Scale (AS) and Learning Outcome Test in Mathematics (LOTM) which were validated by experts in Mathematics and Measurement and Evaluation. Internal consistency was established with split half reliability method and the index ranged from .78 to .92 respectively. The stated hypotheses formulated for the study were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA). Findings from the study revealed that there is a significant effect of formative assessment, attitude and gender on learning outcome of students in Mathematics.*

Keywords: formative assessment, practices, attitude, learning outcome, mathematics, South-South Nigeria

INTRODUCTION

Education is an indispensable tool for societal growth and development from the old simple society to modern complex industrial society. This is because of the potency of education in the realization of national goals. Education to all is regarded as a promoter of human development and the centre of any society's life and concern. It is a social artifact embodying aspirations about the welfare and development of the society it deems to serve. In Nigeria, education is expected to contribute towards the social, cultural, political and economic welfare and development of citizens. Students who complete secondary education are expected to have acquired lifelong skills and be competitive in the global village when it comes to their employability.

Fabunmi (2004) observed that it is through education that an individual acquires knowledge, experiences, skills and attitude needed for the development of a civilized, perfect and well

cultured individuals as well as a key to solving the problems of life. To this end, education consists of all efforts (conscious or incidental) made by a society to accomplish set objectives, which are considered to be desirable in terms of the individual (student) as well as the societal needs. In all human societies, particularly in this era of globalization, education remains one of the most powerful instruments for both the development of man and transformation of the human society.

Provision of quality education is a priority that every country will aspire to include amongst the national goals of education. Raising the standard of education is one of Nigerian's national goals therefore, the purpose of education is to equip the citizenry with values, skills and knowledge to reshape their society and eliminate inequality (Hattie & Gan, 2011). This implies that for any Nation to develop the capacity to learn and acquire certain basic skills such as listening, speaking, reading, writing, calculating, observing, analyzing, it must embrace education in totality. In Nigeria, like other countries of the world, efforts are often made to shape the direction and dimension of the educational system for capacity building through articulated policy. In this study, particular attention is paid to a very recent educational policy of the Nigerian Government known as Universal Basic Education.

Eyong (2017) rightly define formative assessment as the kind of assessment used to monitor students learning progress during instruction with the purpose of providing ongoing feedback to students and teachers regarding success and failure of teaching/learning process. Formative assessment strengthens or improves the object being evaluated. Formative assessment includes several assessment types:

- a. Needs assessment: Determines the needs of the program, how great the need is, and what might work to meet the need.
- b. Structured conceptualization: It helps stakeholders define the program or technology, the target population, and the possible outcomes
- c. Implementation evaluation: Monitors the fidelity of the program or technology delivery
- d. Process evaluation: Investigates the process of delivering the program or technology, including alternative delivery procedures
- e. Evaluability assessment: Determines whether an evaluation is feasible and how stakeholders can help shape its usefulness.

In 2009, Igbokwe and Eze observed that the quality of teacher assessment can have a lasting effect on the students' academic achievement. This implies that, students' achievement would continue to decline in Mathematics if teachers continue to use assessment strategies and teaching materials that are not appropriate to the age, interest, aspiration and capabilities of the students concerned. Obviously, when a teacher lacks the necessary skills and competencies needed to assess the students effectively teaching is distorted and this can result in poor academic achievement. For teachers to achieve the goals of classroom teachers students must undergo series of assessment in order to transform students' attitude and promote their learning outcome.

Attitude is seen as one of the most indispensable and distinctive concept in contemporary social psychology. The study of the concept of attitude is important for psychologists and particularly social psychologists and sociologists. As a consequence of interaction between the individual

and the society certain beliefs, opinions, values, norms, customs and traditions grow to which the individual usually conforms (Hattie & Timperley, 2007). The authors' summation is that through the process of socialization the human being conforms to these social norms and traditional values. This is because socialization develops mainly through attitude and confirming behaviour. This confirmation to social traditions, customs and cultural values occurs through the formation of appropriate and positive beliefs and ideas in relation to various socially standardized values, norms, rules, regulations or various other criteria of conduct of his reference groups.

In a study conducted by Fernandez, Carroll and Dornbusch (1975), students the influence of location and attitude on learning in mathematics in Canada. The design was a 2x3 quasi experimental design with Eight urban and three sub-urban high schools. The respondents were interviewed on their attitude towards Mathematics. Three hypotheses were tested with a sample of 201 students drawn with stratified random sampling technique. From the study, 101 urban and 100 were rural students were sampled. The analysis was conducted with Analysis of covariance (ANCOVA). Findings revealed that most students prefer studying other subject to Mathematics due to the attitude and assessment strategies employed by their teachers.

Gleitman (2015) also believe that every attitude is a combination of beliefs, feelings, evaluation and predisposing to act accordingly. This implies that people who differ in attitudes towards teaching and learning of subject at the secondary school level will probably have different beliefs on the subject and evaluate it differently. These differences will also make them more likely to take some actions rather than others, for example, to have a positive or negative attitude towards the teaching and learning of Mathematics. Attitudes give a direction to a students' behaviour and actions. Because a particular positive attitude will help students to approach teaching positively and a particular negative attitude will help students' approach a particular situation negatively. A positive attitude will reinforce the behaviour and help in its continuance. A negative attitude conversely will make the response weak and finally lead to avoidance behavior which are coloured with assessment and evaluative characteristics. A favourable attitude is considered as having some positive values while a negative attitude is looked upon as having unpalatable and negative implications. To this end, students are expected to develop positive attitude to learning which will enhance their academic performance in Mathematics.

Kivuti (2015) investigated "the influence of formative evaluation on learners' performance in Mathematics in secondary school" in Emubu, county, Kenya. The purpose was to determine mathematics teachers approach to formative assessment and to explore the influence of formative evaluation on learner's performance in secondary school mathematics. Four research questions guided the study. The study adopted the descriptive survey design with a sample of 231 respondents. A researchers developed instrument was used for data collection and the findings revealed that students in the study area do not prefer studying Mathematics due to series of algebraic notations, coupled with the assessment strategies used by their teachers. Likewise, James and Folorunso (2012) carried out a study on "The effects of formative assessment strategies and feedback and remediation as instructional strategies on junior secondary school students' achievement in Mathematics" in Akure South Local Government

Area of Ondo State. The study was a quasi-experimental study which sought to answer four research questions and three hypotheses were answered and tested with a sampled of 240 junior secondary two (JSS II) students in intact classes of three co-educational schools that were purposively selected. The results from the study revealed a significant effect of treatment on students' achievement in Mathematics. However, there were no significant effects of gender and socio economic status on achievement in mathematics. The major weakness of this study is the use of "Formative Test without feedback and remediation as the control group" this indicates the failure of the study to include the conventional classroom that is in practices in the study.

Moroso, Teresa- de- Sousa (2007) study on the effect of formative assessment and attitude on student achievement in Mathematics" in New Britain, the state used the experimental design with two hypotheses. Data for the study which was analyzed using 2x2 ANCOVA and Pearson correlation co-efficient and the findings revealed that students in the experimental group scored higher on all assessments throughout the unit. It was also revealed that the experimental group assessed using summative assessment performed significantly better than their counterparts assessed with formative method of assessment. The major surprises of the study were the lack of well-designed instrument by the researcher which may have accounted for the discrepancies in their results.

Gleitman (2005) assert that while attitudes have certain reliance, their stability is threatened at every turn, especially in the modern mass society whereby attitude and beliefs are under constant assault. The author explains that social psychologists have spent a great deal of effort in trying to understand how such attitudinal changes come about. Newcomb (2006) agrees that attitude changes

that, "attitudes are enduring in a sense that such residues are carried over to new situation, but they change in so far as new residues are acquired through new situations" (p.22). Change in attitudes may be brought about in various ways. Some involve shifting group membership or change in the individual situation (Krech & Crutchfield, 2008). In discussion the ways by which attitude change, many writers have it that the attitudes of the person's groups help determine his own attitude.

In another study by Shug (2012) who sought to examine junior high school students' attitude towards Mathematics and their learning outcome compared to other subjects in California with a sample of 1,243 respondents into experimental and control groups for the purpose of analysis. The finding shows that, students who see Mathematics as less important and uninteresting as compared to other subjects would dodge Mathematics lessons to read other subjects of their interest. The major challenge encountered in the study large number of students used in the study which gave room for extraneous variables to contaminate the study findings. This is a major gap the present study intends to fill. Also, Akiri and Ugborugbo (2009) who carried a study on Mathematics teachers and students attitudes toward Cooperative Learning Method (CLM) in Junior Secondary Schools (JSS) in Port Harcourt Local Government Area (LGA) of Rivers State, Nigeria with a sizable sample population of 240 JSS II students with an average age of 12 years and 11 Mathematics teachers participated in the study. The findings of the study

were that both teachers and students had positive attitudes towards CLM. However, teachers had more positive attitudes toward CLM than the students. The study failed to establish whether teachers of Mathematics should adopt the CLM in their instructions in the classroom so as to impact on the attitudes of the students.

According to Newcomb (2006) “attitudes are enduring in a sense that such residues are carried over to new situation, but they change in so far as new residues are acquired through new situations” (p.22). This implies that positive or negative attitudes may be brought about in various ways. Some involve shifting group membership or change in the individual situation. Others have to do with the impact of persuasive effort of educators and propagandist. Therefore, the ways by which attitude change, many writers have it that the attitudes of the person’s groups help determine his own attitude. Furthermore, attitudes are often modified by changes in the personal situation, which may be favorable or unfavorable.

Ciftci (2013) conducted a study on the topic “the relationship between student’s attitude towards Mathematics and their perceptions of democracy” in the cape Coast metropolis. The aim was to determine the relationship between students’ attitude and their perception of democracy. Three research questions guided the research work. The findings from the study revealed that students do not attach much seriousness to the study of Mathematics which results to negative attitude towards the subject matter. Hansberry and Moroz (2001) investigated the effect of gender on attitude towards Mathematics. Gender was categorized in to male and female while attitude was also categorized into positive and negative attitude toward Mathematics in Western Australian. The study utilized descriptive survey design with three research questions and two hypotheses stated in the course of the study. A standadised instrument on attitude was employed in the study and the analysis was executed with Two-way ANOVA. Results revealed that there was a significant difference in attitude toward Mathematics based on student gender. Male students had a more positive attitude towards Mathematics than their female counterparts. The result also found that most female students feel Mathematics is a course meant for male students alone with a negative attitude of total reliance on their male student to assist them during examination that deals with numerals. However, the surprise of their study was that the instrument used was a standadised instrument that lack validity and reliability especially n the basis of gender on learning outcome. Finally, the efficacy of formative assessment as an assessment strategy has not been fully tested by scholars and researchers in various disciplines. It is on the basis of this backdrop that the study sought to examine the effects of formative assessment practices, attitude and learning outcome of students in Mathematics in south-south, Nigeria.

Statement of the Problem

The poor performance of senior secondary students in Mathematics in south-south Nigeria has been of much concern to all and sundry. The problem is so much that it has led to the widely reported fallen standard of education in the South-South Geopolitical Zone and Nigeria at large. The researchers’ observation and personal interaction seem to link the abysmal Mathematics performance to the use of inappropriate approaches by the teachers in instructional practices and assessment strategies. The regular use of instructional evaluation in Mathematics classroom that focus exclusively on the cognitive learning outcomes to the utter disregard of

the affective and psychomotor outcomes, is suspected to have contributed to the decline in the achievement.

Also, various attempts have been made by past researchers to identify the root cause of the poor performance in Mathematics examination. Efforts by the government to improve Mathematics teaching in secondary schools in Nigeria has laid much emphasis on infrastructural facilities, such as classroom furniture, good buildings, staff recruitment and teacher motivation. In spite of these laudable efforts made by government, there still lingers continuous poor achievement of secondary students' learning outcome in Mathematics. The persistent rise in the failure rate of students from 2012 to 2017 who sat for the Senior secondary school examination as presented in percentage is as thus: 2012 (60.00%), 2013 (64.73%), 2014 (69.05%), 2015 (71.54%) 2016 (80.43%) and 2017 (84.25%) respectively.

Table 1: Mathematics performance of Senior Secondary Students' Learning

Outcome in south-south Nigeria from 2012- 2017

Year	Entry	Distinction/alpha	%	Credit	%	Pass	%	Fail	%
2012	3,489	245	7.02	540	15.48	603	17.28	2,101	60.00
2013	4,094	203	4.96	410	10.01	831	20.30	2,650	64.73
2014	4,802	196	4.08	369	7.68	921	19.18	3,316	69.05
2015	5,032	145	2.88	305	6.06	982	19.52	3,600	71.54
2016	6,754	123	1.82	453	6.71	564	8.35	5,432	80.43
2017	11,852	346	2.92	508	4.29	1013	8.55	9,985	84.25

Source: Ministry of Education Cross River, Rivers and Akwa Ibom States, September, 2017

A critical assessment of Table 1 revealed that students' enrolment kept on increasing but with a drastic decline in students' achievement in Mathematics between 2012 -2017. To the best of the researchers' knowledge, no quality research conducted on how students' will perform in Mathematics when exposed to formative assessment and students' attitude towards learning in Mathematics. This gap underscores the central need that this research work sought to address. Therefore, the problem of this study is: What is the effect of formative assessment practices and attitude on learning outcome of students in Mathematics in selected secondary schools in south-south Nigeria?

Purpose of the Study

The purpose of the study was to find out the effect of formative assessment practices and attitude on learning outcome in Mathematics in selected secondary schools in south-south Nigeria. Specifically, the study was guided by the following objectives:

1. Find out the main effect of formative assessment on students' learning outcome in Mathematics.
2. Determine the main effect of attitude on students' learning outcome in Mathematics.
3. Ascertain the main effect of gender on students' learning outcome in Mathematics?
4. Examine the interaction effect of formative assessment and attitude on students' learning outcome in Mathematics.

Research Questions

The following research questions were answered in this study:

1. What is the effect of formative assessment on students' learning outcome in Mathematics?
2. What is the effect of attitude on students' learning outcome in Mathematics?
3. What is the main effect of gender on students' learning outcome in Mathematics?
4. What is the interaction effect of formative assessment, attitude and gender on students' learning outcome in Mathematics?

Statement of hypotheses

The following hypotheses were formulated for the study which was tested at .05 alpha level.

1. There is no significant main effect of formative assessment on students' learning outcome in Mathematics.
2. There is no significant main effect of attitude on students' learning outcome in Mathematics.
3. There is no significant main effect of gender on students' learning outcome in Mathematics?
4. There is no significant interaction effect of formative assessment, attitude and gender on students' learning outcome in Mathematics.

PROCEDURE AND METHODS

The study adopted the quasi-experimental design. The design was a modification of the Non-equivalent group pretest-posttest control group design with two treatment variables (formative assessment and attitude) and one moderator variable (gender). The quasi-experimental design which allows the use of intact classes because the selection and assigning of subjects to either of experimental and control groups will not be possible. Moreover, true experimental design may not be acceptable to the secondary school administrators because of classroom groupings and strict time tabling. The design is simply arranged as follows:

Table 2: 2x3 factorial design classified by treatment level and gender

Group	Pretest	Treatment	Posttest	Experimental Group
Experimental Group I (Y ₁)	O ₁	X ₁	O ₂	E ₁
Experimental Group II (Y ₂)	O ₁	X ₂	O ₂	E ₂
Control group	O ₁	~	O ₂	C

Where: E₁, E₂ = Experimental Groups, X₁ = Treatment strategy which involve formative assessment, X₂ = Treatment strategy which involve attitude, ~ Control group, O₁= Pre-test Measurement, O₂= Post-test Measurement and Y₁, Y₂= Moderator Variables

The population for this study comprised all Senior Secondary school three (SS3) students in Mathematics in selected public secondary schools in south-south (Cross River, Rivers and Akwa Ibom states) of Nigeria numbering 21,657 SS3. The justification of SS3 students is informed by the fact that the students at this level are assumed to have acquired some basic

concepts, knowledge and skills in Mathematics which enabled the students to answer the pretest questions on the topic being considered. The sample of the study consisted of 541 (2.5%), SS3 Mathematics students in the selected schools. A breakdown of this figure gave 304 male and 337 female students in 16 intact classes from 15 schools in the zone. Also 276 were in the experimental group while the remaining 265 constituted the control group for the study. The proportionate stratified random sampling technique was employed in the study as each of the schools in south-south was considered as stratum. Thus, 16 (6%) out of the 270 public schools in south-south were randomly selected by balloting. Three Instruments were used for data collection of the study viz; the Formative Assessment Practice Questionnaire (FAPQ), attitude scale (AS) and Learning Outcome Test in Mathematics (LOTM) Both the FAPQ, AS and LOTM were administered as pretest and posttest to both the experimental and the control groups, before and after the intervention. Before using the instrument, the items in the FAPQ, AS and LOTM were validated using content and construct validity by experts in Mathematics and Measurement and Evaluation respectively in Cross River University of Technology and University of Port Harcourt. They were specifically required to assess:

- i. The ability to comprehend each of the items in relation to the cognitive level of the respondents
- ii. The adequacy of the items to measure the construct they purport to measure.

Also a table of specification for the LOTM was developed, covering all the topics considered in the study. The researchers' trial tested the instruments with internal consistency method using split half reliability method and the index ranged from .78 to .92 respectively. Both descriptive and inferential statistics with the aid of SPSS Version 22.0 software were employed for data analysis. Hypotheses formulated for the study were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA).

Table 3: descriptive statistics with formative assessment, attitude and gender on learning outcome in Mathematics

Groups	N	Mean	Std. Deviation
Formative	224	15.84	3.35
Attitude	100	17.59	3.40
Gender	171	19.40	4.01
Total	495	17.42	3.93

Table 3 shows the descriptive statistics (mean and standard deviation) of formative assessment, attitude and gender and the total for these three categories. While formative assessment has 224 respondents with mean of 15.84 and standard deviation of 3.35, attitude has a total of 100 respondents with mean of 17.59 and standard deviation of 3.40 and gender has a total of 171 with mean of 19.40 and standard deviation of 4.01. This implies that gender dominated the trends in terms of students learning outcome in Mathematics.

Table 4: Test of between subject effect

Source	Type III Sum of Squares	df	Mean Square	F	p-value	Partial Eta Squared
Corrected Model	1841.814 ^a	3	613.938	52.253	.000	.242
Intercept (Formative assessment)	5124.604	1	5124.604	436.160	.000	.470
Attitude	610.422	1	610.422	51.954	.000	.096
Gender	885.615	2	442.808	37.688	.000	.133
Error	5768.942	491	11.749			
Total	157860.000	495				
Corrected Total	7610.756	494				

a. R Squared = .242 (Adjusted R Squared = .237)

Table 4 shows the actual result of the effect of between group (gender) and error or within group (attitude). Gender has a type III sum of squares of 885.615 at 2 degrees of freedom, 442.808 sum of squares, 37.688 F-ratio and a p-value of .000. Therefore, with the effect of formative assessment on learning outcome of students in Mathematics is rejected as (p-value .000 < .05), the effect of formative attitude on learning outcome of students in Mathematics is rejected as (p-value .000 < .05), also the effect of co-varied (gender) on learning outcome of students in Mathematics is also rejected as (p-value .000 < .05). This implies that there is a significant effect among the three groups (formative assessment, attitude and gender) on learning outcome of students in Mathematics. To further explain the direction of differences, a pairwise comparison was executed and presented in Table 4.

Table 5: Pairwise comparison with the effect of formative assessment, attitude and gender on learning outcome of students in Mathematics

Categories		Mean Difference	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
Formative assessment	Attitude	-1.177*	.420	.005	-2.002	-.352
	Gender	-3.071*	.355	.000	-3.768	-2.374
Attitude	Formative assessment	1.177*	.420	.005	.352	2.002
	Gender	-1.894*	.432	.000	-2.742	-1.046
Gender	Formative assessment	3.071*	.355	.000	2.374	3.768
	Attitude	1.894*	.432	.000	1.046	2.742

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

It is very clear from Table 5 that haven co-varied out the effect of the pretest (the covariate), the fir group formative assessment and attitude differs significantly (p-value of .005 < .05), the second group formative assessment and gender is also significant as (p-value of .000 < .05). This implies that there is a significant mean difference for all the categories.

DISCUSSION

From the study it was found that there is a significant effect of formative assessment, attitude and gender on students' learning outcome in Mathematics. The kind of assessment practice employed by a teacher has an effect of the performance of the students. The finding agrees with Fernandez, Carroll and Dornbusch (1975) whose finding revealed that most students prefer

studying other subject to Mathematics due to the attitude and assessment strategies employed by their teachers. Also study by Kivuti (2015) result is in consonance with the present finding as the author revealed that students in the study area do not prefer studying Mathematics due to series of algebraic notations, coupled with the assessment strategies used by their teachers. Teresa- de- Sousa (2007) found that the experimental group assessed using summative assessment performed significantly better than their counterparts assessed with formative method of assessment. The major surprises of the study were the lack of well designed instrument by the researcher which may have accounted for the discrepancies in their results. Attitude was also found to have a significant effect on learning outcome in Mathematics. This implies that the teachers' attitude can increase the students' quest for mathematics as a course of study. Obviously, most students do not prefer teachers who are harsh with negative attitude towards the subject matter. The finding agrees with that by Shug (2012) whose study revealed that most students view Mathematics as less important and uninteresting as compared to other subjects. Such students would dodge Mathematics lessons to read other subjects of their interest. Also, Akiri and Ugborugbo's (2009) findings revealed that both teachers and students had positive attitudes towards CLM. However, teachers had more positive attitudes toward CLM than the students. The study failed to establish whether teachers of Mathematics should adopt the CLM in their instructions in the classroom so as to impact on the attitudes of the students. The present finding is also in accordance with Ciftci (2013) whose study revealed that students do not attach much seriousness to the study of Mathematics which results to negative attitude towards the subject matter.

On the basis of gender, it was found that gender has a significant effect on students' learning in Mathematics. Hansberry and Moroz's (2001) investigation revealed that there was a significant difference in attitude toward Mathematics based on student gender. Male students had a more positive attitude towards Mathematics than their female counterparts. The results also indicated that most female students felt Mathematics was a course meant for male students alone with a negative attitude of total reliance on their male students to assist them during examination that deals with numerals.

Justification of the Study

The findings of this study may hopefully be of benefit to the following stakeholders in the field of education: Mathematics teachers/students, school administrators, educational researchers, curriculum developers and government.

The findings of the study may contribute effectively to imparting knowledge in the area of teaching and learning of Mathematics in South-South as a whole. It may assist Mathematics teachers to be able to effectively and appropriately impart knowledge and utilize the most relevant forms of assessment of their students because teachers get to know and understand the attitudinal differences among students about the subject which provides the opportunity for new knowledge. Also, it is hope that the findings of the study may expose the teacher to the use of formative assessment as they would have a more detailed understanding of the students' abilities which can be used for remediation and re-teaching.

It is expected that the findings of this study may equally provide useful information to educational researchers on the effectiveness of formative assessment which can help them carry out similar studies as well as provide other information for possible replication of the study in other places and subject areas. In addition to the above stakeholders, it is hoped that the findings of this study may provide the platform upon which curriculum developers will consolidate formative assessment in policy development on classroom practices in the curriculum.

It is also hoped that the findings of this study may provide the Government with data on the effectiveness of formative assessment practices and with which to address the challenge of students' attitudes towards Mathematics and learning outcome in mathematics. This can serve as the platform upon which Government may adopt formative assessment in the curriculum to help improve the attitude and learning outcome of students in Mathematics.

Summary

Most teachers feel that students should only be assessed after instruction (summative assessment), most especially for test and examination purposes alone. Although, this is a good form of assessing what the student has mastered so far during a given period of learning. To be candid and truly effective in the assessment practices, formative assessment is also relevant. This is because it gives the teachers the opportunity to make frequent, interactive assessments of student understanding of all their educational challenges. This will to a large extent assist in providing solutions to students who may have learning deficiencies. Teachers on their part will adjust their teaching to meet individual student needs, and to better help all students to achieve high academic excellence. Teachers' active utilization of formative assessment will help students develop listening skills that will enable them to learn better and promote positive attitude towards the study of Mathematics.

In most secondary schools in Nigeria, teachers incorporate aspects of formative assessment into their teaching, but it is less common to find it practiced in totality especially at the primary and secondary school levels. If formative assessment is used as a framework for teaching, teachers change the way they interact with students, how they set up learning situations and guide students toward learning goals, even how they define student success which have yielded quality result in countries like Canada, England, Finland, Italy, New Zealand, Scotland to mention but a few. The study has also brought together conceptual and empirical literatures in Mathematics as a core subject in schools in south-south, Nigeria. This calls for the need for formative assessment to be inculcated into the curriculum with strict adherence to its implementation.

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