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FORMATIVE ASSESSMENT PRACTICES OF SECONDARY SCHOOL TEACHERS IN ABAKALIKI EDUCATION ZONE OF EBONYI STATE

*Athanatius, Ifeanyi IBEH (Ph.D)

Department of Educational Foundations, Ebonyi State College of Education, Ikwo

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Corresponding author:
Athanatius, Ifeanyi IBEH

ABSTRACT

The study was designed to examine formative assessment practice of secondaryschool teachers in Abakaliki education zone of Ebonyi State. The studywas a descriptive survey research design guided with four research questions and four hypotheses. Relevant literatures were reviewed under conceptual framework, theoretical framework, review of empirical studies and summary of literature review. The population of the study is made up of 3,220 teachers from the 110 public secondary schools in Abakaliki Education zone of Ebonyi State. The sample size of this study is 358 teachers. This was done using proportionate and simple random sampling techniques. The instruments that were used for data collection is a checklist (observation) and a rating scale. The checklist contains 14 items that the rating scale is titled "Formative Assessment Practice of Teachers Scale" (UF APTS) which has 29 items.. The, instrument was face-validated by threespecialists: two from Educational Foundations, one from Measurement and Evaluation and the last one from Curriculum Studies. The reliability of the instrument was tested using Cronbach alpha and a reliability index of 0.89 was obtained.Descriptive and inferential statistics were used in data analyses. Frequency, proportion, means, mean of means and standard deviation were used to answer research questions. One sample t-test (i.e. t-test of difference between sample and population means) were used to test the hypotheses 1, 2, and 4 while t-test of proportion were used to test hypotheses 3 at 0.05 level of significance.The major findings of the study includes amongst others: that teachers see formative assessment as a tool that provide for a better evaluation of students than the formal assessment and that it also provides valuable learning experience for students. It was also found that teachers have the knowledge/skills to establish learning targets using formative assessment, can monitor students' progress toward the learning targets and provide feedback and consider observation techniques as the key technique for formative assessment proportion of the teachers using formative assessment. Based on the findings of the study the researcher recommended among others: teachers should endeavor to use the different formative assessment tools/methods to improve learning assessment in schools. Teachers should be adviced on the need to use formative assessment feedback and to let them know its importance on students' performance. School Administrators should emphasize the use of formative assessment by all teachers and they should allow, encourage and provide incentive for them to attend seminars, workshops, conference and in - service training to enhance their performance and to acquire necessary skills to construct formative tests.

INTRODUCTION

In educational backgrounds around the world, secondary schools teachers are typically required to design or select assessment methods, administer assessment tasks, provide feedback, determine grade, record assessment information, report students achievement to the key assessment stake holders in the school system.

In the line of the above statement, Broad foot and Black (2004) submit that classroom assessments are accommodation tools providing information on the quality of students learning, the curriculum, programming, or school. All assessments are fashioned to serve some purpose, whether to diagnose a learning incapacity, to identify who needs remediation, or to identify whether a school has met its accomplishment goals.Popham (2011) defines assessment as encircling a

variety of methods and practices to assess student knowledge. He also sees it as a formal process used to gather information regarding students learning status. More specifically, assessments are learning tools used to gather information on what students are learning which educators attempt to derive valid inference about what students know or are able to do. In order to get that kind of information, teachers need the results provided by the consistent use of class-based formative assessment (FA).Although Formative Assessment is included in government policy document, there has been little classroom- based research to document what teachers do when they undertake formative assessment (Loughran, 1999). Assessment can be one of the most difficult aspects of teaching and judging the work of learner can weigh heavily on the mind of the teachers. In spite of the anxiety assessment poses, knowing how to assess learners in order to improve instructions is a core principle of effective teaching.

Black and Williams (1998) state that, assessment becomes formative when the information is used to adapt teaching and learning to meet students' needs. In a similar vein, Black (2003) defines formative assessment as "those activities that are used to improve students' learning. These activities may be graded or ungraded, but they provide learners with information that allows them to learn something about their own knowledge or skills, make a change, and ultimately improve their learning". Black and Williams (1998)further argue that formative assessment does not only serve as effective classroom assessment tool, but as a high quality in structural feedback tool that is timely, useful and appreciate.The low level of use of formative assessment in the classroom has been detrimental to the enhancement of teaching and learning. This is due to the absence of required instrument for its use. References have been made to the conception of formative processes in the continuous assessment (CA) and school based assessment (SBA) as respectively used in secondary schools. This conception of formative assessment expressed in the CA and SBA are absent from the actual practice of CA and SBA in the educational system (Broadfoot, and Black, 2004).According to Dasuki (2014) feedback in formative assessment is a necessary step in the learning process and enhances learning. Feedback is part of continual process correcting or continuing students' academic knowledge; it is not isolated to one instructional activity, as it should connect to another learning event (Langer, 2011). Onuoha (2002) argues that feedback given as part of formative assessment, helps learners become aware of any gaps that exist between their derived goals and their current knowledge, understanding, or skills guides them through actions necessary to obtain the goals. Black (2003) states that, formative assessment can occur many times in every lesson. It can involve several different methods for encouraging students to express what they are thinking and several different ways of acting on such evidence. It has to be within the control of the individual teachers and, for this reason; change in formative assessment practice is an fundamental and intimate part of teachers' daily work.

Evaluating classroom formative assessment practice is essential as this serves as an agent of feedback to learners on their performance, as well as a means of guiding learners on what they need to do to remedy weaknesses by making relevant changes and determining how learners can be helped further (Kotze, 1999). This implies that for the purpose of better teaching and learning in the classroom, there should be continuous evaluation of formative assessment practices.

But the question is; how do teachers in secondary schools in Abakaliki Education Zones carry out formative assessment. Do their assessment practices tally with standard as well as recommended practice? Could there be a departure? Hence the need for this study.

Statement of the Problem

Formative assessment practice of teachers has been viewed as being influential to effective and efficient teaching and learning in the classroom. It is believed that the result from adequate formative assessment in classroom provides immediate and specific feedback to the learners and teachers for effective learning decision. Effective implementation of formative assessment practice in the classroom can give the learners the capacity to assess themselves more often and effectively. However it is very sad to note that many teachers in secondary schools unarguably have little or no knowledge or understanding of what formative assessment entails and do not have the skills to effectively use it in the classroom like in item construction (Black and Willian, 1998). This may prove that teachers have not been effective in implementing formative assessment in the classroom.Effective learning which must be as a result of feedback from assessment and its appropriate usage and active involvement of students in the assessment learning process are all features of effective formative assessment, but seem not to be present in continuous assessment. One begins to wonder if it could be due to their poor perceptions of the importance of such practice or attributed to inadequate training of the teacher for effective implementation of formative assessment in the classroom. It is against the backdrop that this research is being carried out on formative assessment practice of secondary school teachers in Abakaliki education zones.

Scope of the Study

The study focuses on formative assessment practice of senior secondary school teachers in Abakaliki education zone. It looks at the level of formative assessment practice of teachers, their perception and knowledge of formative assessment. It examines the impact of teachers formative assessment practice on learners as well as the instrument/method used in the formative assessment practice, how teachers implement formative assessment in the classroom, and challenges teachers have in formative assessment.

Purpose of the Study: The general purpose of the study is to examine formative assessment practices of secondary school teachers in Abakaliki education zone of Ebonyi State. Specifically, the study is out to:

- Find out the teachers' ratings on formative assessment implementation in the classroom,
- Ascertain the teachers' knowledge and skills in classroom formative assessment,feedback in the classroom,
- Find out the impact of teachers' formative assessment on learners academic achievement, and
- Ascertain the challenges teachers have in formative assessment.

Justification of the Study: This research work will be of great benefit to the Teachers, Students, School Administrator,

Government, and Guidance Counsellors in the following ways:

The study of this kind will help enlighten teachers on their knowledge of assessment in general and formative assessment in particular. This study will thus be a significant reference to point out to the teachers on the best procedures in the implementation of formative assessment.The findings of this study will help curriculum developers, educators and teachers to understand the impact that teacher's formative assessment practice have on instructional practice, students' achievement and goals of practice have on instructional practice, students' achievement and goals of education. The school administration may use this research to develop assessment guideline for their respective schools.This will be of great value to the school administrators as it employed the process of improving quality in the classroom. It will also provide new and more effective way of facilitating teaching and learning process in their schools. It will also enlighten examination bodies like WAEC, NECO etc on the importance of formative assessment and see the need to incorporate it in their assessment format.

Research Questions

In line with the research objectives, the following questions are formulated:

- What are the secondary school teachers' rating on formative assessment implementation in the classroom?
- To what extent do secondary school teachers have the knowledge and skills of formative assessment?
- What is the impact of teachers formative assessment practices on learners academic achievements?
- What are the challenges teachers have in formative assessment?

Hypotheses

The following hypotheses were tested in this study at a level of significant of 0.05:

H01: The mean score of secondary school teachers' perceptions on formative assessment implementation in the classroom is not significantly greater than the criterion mean of 20.

H02: The mean score of secondary school teachers' on the extent of their knowledge and skills of formative assessment is not significantly greater than the criterion mean of 17.50.

H0₃: The mean score of the impact of teachers' formative assessment practices on learners' academic achievements is not significantly greater than the criterion mean of 15.

H04: The mean score of challenges teachers have in formative assessment is not significantly greater than the criterion mean of 20.

Review of Related Literature

Conceptual Framework: Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. Formative assessment refers to tools that identify misconceptions, struggles, and learning gaps along the way

and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

A Brief History of Formative Assessment: As with most effective teaching methods and practices, individual teachers have probably used formative assessment throughout history. Indeed, we could claim Socrates as an early practitioner. Peppering his students with questions that probed and provoked, he used their responses to measure their learning and guide his instruction; this is the primary attribute of formative assessment.Although teachers have long used strategies like the Socratic method and other forms of meaningful questioning, the term "formative assessment" is a relatively new one. Its contemporary use is often traced to Michael Scriven (1967), who used "formative" and "summative" to indicate differences in both the goals for collecting evaluation information and how that information is then used. Scriven explained that while a program is in the planning and developmental stages, it is still malleable, and the information gathered from evaluation can therefore contribute to change in the program. He called evaluation for this purpose of improving "formative." Once a program has been created and implemented, Scriven argued, evaluations can only yield information to determine whether the program has met its intended goals. Scriven called this final gathering of information a "summative evaluation."

Benjamin Bloom was one of the first to apply the concepts of formative versus summative to educational assessment, helping to lay the foundations for the concept of mastery learning (Bloom, Hastings, &Madaus, 1971). The purpose of mastery learning was to ensure that students didn't move forward to the next level of learning until they had demonstrated mastery of the learning objectives set for the current level. This concept, in turn, became the basis for modular instruction, widespread in the 1970s, in which students learned from self-directed packets, or modules of instruction. When a student successfully completed one packet, he or she could move on to the next packet, proceeding through modules until all objectives were met. In theory, mastery learning resembles today's scaffolding, but in practice, students worked mostly in isolation without much teacher support or peer interaction.In the decades following, formative assessment began to be more widely explored. States considered ways to embed it in standardized tests. Bloom continued his theoretical work, examining several issues relating to formative assessment. He identified two essential elements of formative learning: feedback for students and corrective conditions for all important components of learning (Bloom, 1977). He also argued that formative information could be used to divide the class into cooperative groups based on the corrections required. From this point, teachers could differentiate instruction to meet the needs of individual students through selected teaching strategies and corrective responses (Bloom, 1976).In New Zealand, Terry Crooks studied the effect of classroom assessment practices on

students and reported on their potential to emphasize what is important to learn and positively affect student motivation. Crooks (1988) asserted that classroom assessment "appears to be one of the most potent forces influencing education. Accordingly it deserves very careful planning and considerable investment of time from educators" (p. 476).Below is a diagram that shows formative assessment.
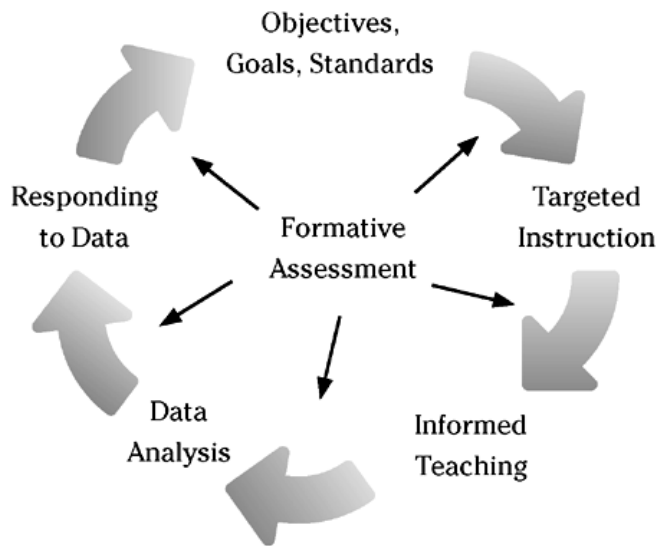

Figure 1. The Cycle of Instruction with Formative Assessment

Formative Assessment in Schools: Schools where teachers collaborate adopt evidence-based teaching strategies, have professional conversations about how to improve their teaching, and use evidence to moderate assessment are all using formative assessment. Evidence must be directly observable (the teacher should be able to see it, touch it or hear it8). It provides the qualitative and quantitative data to inform both the teacher and the learner about progress. It should be linked to the Victorian Curriculum F-10 achievement standards. Examples of formative assessment techniques include: hot-seat questioning, all-student response and question shells9. All of these are designed to provide the teacher with evidence of the impact of their teaching on their student's learning. A teacher can then use this to guide the lesson design and pace, select different strategies, differentiate, and give feedback to individual students. Good feedback enables students to move their own learning forward. Using multiple forms of formative assessment in a classroom strengthens assessment practice overall. It provides the structure and process for teachers and students to develop a shared and deep understanding of learning intentions, success criteria and the curriculum standards on which assessment is based.

Purposes of Formative assessment

- To provide feedback for teachers to modify subsequent learning activities and experiences;
- To identify and remediate group or individual deficiencies;
- To move focus away from achieving grades and onto learning processes, in order to increase self-efficacy and reduce the negative impact of extrinsic motivation;
- To improve students' metacognitive awareness of how they learn.

Characteristics of formative assessment

According to Harlen and James (1997), formative assessment:

- Is essentially positive in intent, in that it is directed towards promoting learning; it is therefore part of teaching;
- It takes into account the progress of each individual, the effort put in and other aspects of learning which may be unspecified in the curriculum; in other words, it is not purely criterion-referenced;
- It has to take into account several instances in which certain skills and ideas are used and there will be inconsistencies as well as patterns in behaviour; such inconsistencies would be 'error' in summative evaluation, but in formative evaluation they provide diagnostic information;
- Validity and usefulness are paramount in formative assessment and should take precedence over concerns for reliability;
- Even more than assessment for other purposes, formative assessment requires that pupils have a central part in it; pupils have to be active in their own learning (teachers cannot learn for them) and unless they come to understand their strengths and weaknesses, and how they might deal with them, they will not make progress.

Feedback is the central function of formative assessment. It typically involves a focus on the detailed content of what is being learnt,[2] rather than simply a test score or other measurement of how far a student is falling short of the expected standard. Nicol and Macfarlane-Dick, synthesising from the literature, list seven principles of good feedback practice:

- It clarifies what good performance is (goals, criteria, expected standards);
- It facilitates the development of self-assessment in learning;
- It provides high quality information to students about their learning;
- It encourages teacher and peer dialogue around learning;
- It encourages positive motivational beliefs and self-esteem;
- It provides opportunities to close the gap between current and desired performance;
- It provides information to teachers that can be used to help shape teaching.

Motivational Benefits of Formative Assessment: The effects of formative assessment on motivation are a little more complicated. Feedback is a message, so the effect depends not only on the information itself but also on the characteristics of the people who send (teachers) and receive (students) the message. One student may hear a helpful, clear description of how to improve a paper with gratitude, while another may hear the same feedback as just another confirmation of how stupid he is. Covington (1992) talked about "motivational equity," saying that while no two children come to school with equal academic abilities and backgrounds, there is no reason that they should not all have access to equally motivational feedback. The trick is to find out what is motivating for each

student. When it's right, it's the best part of teaching and learning. As one teacher said, "To our students it's personal. We are influencing their learning process."Student self-assessment satisfies both motivational and achievement needs. Students who can size up their work, figure out how close they are to their goal, and plan what they need to do to improve are, in fact, learning as they do that. Carrying out their plans for improvement not only makes their work better but helps them feel in control, and that is motivating. This process, called self-regulation, has been found to be a characteristic of successful, motivated learners.Student use of formative assessment varies according to students' developmental levels. Younger children can and should participate in evaluating their own work, but they need to be taught how to do that. Research suggests that younger children may focus only on neatness and other surface characteristics of work when they first do self-evaluation. With instruction and practice, however, they learn to focus on the learning target.

Students also have individual differences in their preferences for and use of teacher feedback. Some students may need instruction about how to use feedback and how to do self-assessment. Students who have never experienced self-assessment may at first claim that feedback is solely "the teacher's job." Research suggests, however, that once students realize that information from both teacher feedback and their own self-assessment can help them improve, they will process material more deeply, persist longer, and try harder. In short, they will become more self-regulated learners.For unsuccessful learners, feedback must deal with negative feelings first, to break the cycle of failure. For these students, formative assessment can help identify specific next steps they can take to do better. Once the students see they are making progress toward achievement, they are more likely to think it is worthwhile to continue. Thus, for unsuccessful students, formative feedback should begin with statements of accomplishment and small, doable steps for improvement.

Teachers' Perception of Classroom Formative Assessment:
Teachers' varying approaches to formative assessment implementation are influenced by their perception about teaching and learning. Many studies have shown that teachers' perceptions and attitudes are important keys for understanding and improving educational processes. Teachers' perceptions are closely linked to their strategies for coping with challenges in their professional life and they shape students' learning and environment and influence student motivation and achievement (Heritage, 2010). According to Pajares (1992), teachers' perceptions about assessment and evaluation can directly affect how they design and implement theirstudent assessments and evaluations and how they interpret the results. Few educators argue that the beliefs held by teachers and instructorsinfluence their perceptions and influence their behaviours in their classrooms (Pajares, 1992). Study by Brown, Hui, Flora and Kennedy (2011) showed that teachers' perceptions about assessment reflect their societal and cultural differences and affect their teaching practices. The result showed that the teachers' perceptions are crucial and these perceptions are shaped by cultural and institutional context. Teachers who possess positive perceptions about formative assessment are strongly adhered to use assessment to improve the quality of teaching as well as students learning (Davison, 2004).Many studies have shown that the implementation of formative assessment is related to teachers' beliefs, attitudes and perceptions about teaching and learning. Thus, teachers

need to have appropriate knowledge and skills in order to make formative assessment a pedagogical tool to enhance teaching and learning (Heritage, 2007).research on teachers' perceptions on formative assessment illustrates how these perceptions interact with the cultural milieu present in classrooms. Matese (2005) argues the purpose of assessment (i.e., what to teach and what to assess).Teacher perceptions and their practices in classroom assessment may not be totally aligned. Dasuki (2014) studied the assessment beliefs and practices of language teachers in Kaduna State. While the teachers held positive views of formative assessments on a regular basis, or in an effective way. Schneider &Gowan (2013) found that preservice teachers use of alternative authentic assessments as well as traditional assessments affected their perceptions about assessment. While some preservice teachers accommodated new information about authentic assessment, others either resisted or assimilated their new knowledge into existing belief structures.

Sach (2011) discovered that teachers were less confident in implementing formative assessment strategies in the classroom. It was stipulated that the teachers did not recognize the importance of the potential of self-assessment, or pupil voice as part of formative assessment practices to enhance learning. There was a possible link found between teacher's experience and their levels of confidence, with regard to their expectations of students. Based on statistical analysis, there was an emerging relationship between teachers' experience, the grade they taught, and their perceptions. Itwas felt that more work was needed for teachers, in order to ensure that both practice are closely related.The post-modern factor is another contributing factor on the use of formative assessment. Teachers with a critical stand were found to have a lack of trust in formative assessment instruments. The study indicated teachers' ambivalent stance on the place and role of formative assessment in a traditional assessment environment (Inbar-Lourie&Donitsa-Schmdt, 2009). This has resulted in an "incongruence within the system" (Inbar-Lourie&Donitsa-Schmdt, 2009, p.200), where teachers are expected to teach under ambivalent conditions.

Other significant factors influences teachers' perception about formative assessment practice are teachers' previous knowledge, experiences, beliefs and sense of professional identity that directly or indirectly affect their instructional practice (Borko, 2004). These factors are referred to as the constraining effect on practice (Broadfoot, 2001). Additionally, others have identified that the characteristics of the school influence teaching too; in short, context, history and setting impact changes to teachers' pedagogy in practice (McDonald, 2011).The study by Sach (2011) on teachers' perceptions of formative assessment practices in the English Language classroom were found to be positive. This contract with which was reported McNair *et al* (2003), as the teachers in school showed a clear understanding of the term formative assessment. Based on Carless (2011), the understanding needed to implement an innovation is defined by their "ability to engage with theprinciples and an awareness of classroom application principles" (Carless,2011, p.92). The teachers demonstrated that they were able to use the principles of formative assessment during their teaching. Furthermore, the teachers showed awareness on the type of formative strategies they implemented in their teaching, since it must be planned accordingly. Theycan be seen to consider some of the "first-base guiding principles on selecting tasks and procedures for

the assessment of young learners" (McKay, 2006, 109). This is evidently due to their clear understanding of formative assessment practices in the classroom. This warranted positive results from the teachers, in comparison to McNair *et al* (2003), where the teachers were seen to be using the formative assessment strategies in random manner.

Formative Assessment Tools used in the Classroom: Classroom formative assessment tools are veritable techniques used by teachers to improve and enhance their practice in the classroom.According to Brookhart (2010), practical classroom level formative assessment tools are meant to assist teachers striving to improve and enhance their practice.Herrera, Murry and Cabral (2007) listed classroom assessment tools to include:

Diagnostic Assessment: Although some authors view diagnostic assessment separately from formative assessment, the intention is that diagnostic assessments are used for formative purposes. Diagnostic assessment or pre-assessment is used to collect information for planning instruction and acknowledging learners' needs. Wiggins and McTighe (2007) assert that pre-assessments "include checks of prior knowledge and skill levels and surveys of interests or learning-style preferences". The authors maintain that, given the literature, a great number of students come to school with a misconception that they are not talented enough to perform a certain task, such as drawing a picture or writing an analytic memo (Wiggins &McTighe, 2007). Given this scenario, a teacher is responsible for recognizing these misconceptions and finding ways to confront them.

Portfolios: Portfolio development is not a new concept in the history of education. According to William and Thompson (2008), gathering purposeful examples of students' work that demonstrate their effort, progress and level of understanding over a period of tune, compose the main features of portfolio. However, what has changed through the course of time is the format and content, making portfolios meaningful and purposeful. Wiggins and McTighe (2007) maintain that unlike the traditional forms of assessment that take a "snapshot" of students at one point in time, portfolios"function like a photo album containing a variety of photos taken atdifferent times and different contexts". Similarly, Herrera *et al*., (2007)assert that the content of portfolios, which incorporate a collection of student work, "some indications that how student rated him/herself on theprocess and product included and the evidences of how those products met the established criteria. Investigators emphasize the importance of considering the intended purposes for developing portfolios. By establishing the targets for a portfolio, an instructor can decide what kind of student work to incorporate, who should manage it, how often to review it, and more (Wiggins and McTighe, 2007). The instructors regularly assign students to include writing samples, reflections, drawings, reading logs, student self-evaluation, and progress notes, visuals and audio clips, among the many. According to Herrera *et al*., (2007), the common forms of portfolios contain best examples of students' work that illustrate their learning and progress.In addition, portfolios are considered a good alternative to traditional forms of assessment because they incorporate the perspective of students and teachers about learning and assessment. Another significance of a portfolio is that unlike the traditional synoptic evaluations, such as the final exam or any standardized test that happens once, portfolios provide a longitudinal

observation of student progress as they show incremental gainsin knowledge, skills and proficiencies (Herrera, *et al*., 2007).

Self-Assessment: Self-assessment is a valuable tool for learning and measurement. For example, when students' are engaged in assessing their own work, they try to learn the criteria for high quality performance, and they experience a willingness to apply those criteria (Herrera *et al*., 2007). However, Black and William (1998) remain concern about student readiness to self-assess or evaluate peers. They propose that once students acquire a clear picture of the outcome or purpose, "they become more committed and more effective as learners: their own assessment becomes an object discussion with their teachers and with one another.However, agreement exists among educators, in which they recognize the value of self and peer-assessment which helps students exert control over their learning (Chappuis and Stiggins, 2004). Initially, some teachers provide rubrics for student so that they can assess their progress.

Peer Assessment: Similar to self-assessment, educators consider peer-assessment advantageous, as it furthers opportunities for students to identify targeted learning goals (Herrera *et al*., 2007 &Chappuis&Stiggins, 2004). In peer-assessment, students often assess other students' work compared to the criteria developed by the instructor, or both students and the class instructor. An important aspect of peer assessment is that it engages students in dialogue with their classmates, commenting on each other's' work rather than a one-way feedback system from instructor to student. To enrich peer-assessment and use it productively, Black and William (1998) propose that students be trained to assess their peers purposefully, with the goal of improving learning.

Questioning: The concept of questioning has a long history in the area of classroom assessment; however, what has changed over the course of time is a shift from close-ended questions to more informative, open-ended formats. Black, Harrison, Lee, Marshal and William (2003) encourage teachers not only to develop more effective questions but also to facilitate an environment where students must think analytically and provide their own answers to their questions. The change that these authors introduce is as, "some people describe friction as the opposite of slipperiness. Do you agree or disagree? Was quickly changed to 'some people describe friction as the opposite of slipperiness. What do you think?'" (Black *et al*., 2003, p.34).

Interview-Based Assessment: Interview-based assessment is another form of alternative assessment the teachers use to gather data about students' experiences, interests, background, thoughts, beliefs, activities etc. Teacher-student interviews vary from highly structured to informal conversations. Herrera *et al*., (2007) agree that unstructured detailed interviews with students help teachers to adapt the lesson based on the information gathered from students. These authors note that, through a teacher's interview held with a student, the instructor realized that "linguistic differences can interfere with the development of deeper connections with students" (Herrera *et al*., 2007, p.36).

Co-operative Group Assessment: The concept of group work or team work varies, depending on the context. In the West, particularly in the United States, an individual's success

attracts more attention than the accomplishments of team work, such as in sports (Herrera, et al., 2007). However, recent recognition of collaborative or team work is increasing among educators, realizing that strengths and skills of some students are well-defined when they are engaged in group activities such as cooperative learning or assessment. Herrera et al., (2007) observe that "collaborative or group activities oftenculminate in projects or experiments that may or may not require oral orwritten reporting".Slavin (2006) argues that planning for group assessment requires educators to consider both group efforts and individual liability.

Teachers' Formative Assessment Practices and Students' Academic Achievement: The ultimate goal of most schools initiative is increased students' performance. The low performance of students in academics has led to a myriad of educational interventions to improve student achievement. Dum and Mulvenon (2009) are of the view that the common method required to improve student achievement is the use of formative assessments, both to improve the pedagogical practices of teachers and to provide specific instructional support for lower performing students. Filseckar and Kerres (2012) suggests that student learning increased when teachers made students part of the learning process. Teachers could do this by showing students how to self-assess.In other words, students would formatively assess their work. He goes on to say that teachers had to show students models of proficiency so students would know the standards to which they aspired.Fuchs and Fuchs (2006) explored the effectiveness of formative assessment (or evaluation) in a meta-analysis of 21 separate studies. The researchers hypothesized that individualized instruction helped special education students learn more and learn better. Their results suggested that students who received intentional individualized instruction resulting from frequent formative evaluation of individual education plans (lEPs) performed 0.7 standard deviations units higher than their peers whose lEPs were not regularly formatively assessed.The researchers were of the opinion that, "although some special education practitioners may object to systematic formative assessment because of its time consuming nature, the magnitude of effect size associated with this methodology suggests that systematic formative assessment may be worth additional teachers time "(Fuchs & Fuchs, 2006).According to Crooks (2008), a number of studies have attempted to prove the instructional importance of student summative evaluations. Comparatively little research supported the effectiveness of formative assessment. Crooks however notes that "students spend greatest amount of time engaging in classroom assessment activities than in standardized testing" (Schneider & Go wan, 2013).

A meta-analysis by Crooks (2008) reported results from 14 research studies that explained the relationships between classroom assessment practices and students outcomes, made the author to conclude that "too much emphasis has been placed on the grading function of evaluation, and too little on its role in assisting student to learn. The author, therefore, suggested that formative assessment practices were "powerful" and deserving of necessary time to plan and initiate in the classroom because formative assessment had greater impact on student learning than summative assessment. Perrenoud (2011) suggested formative assessments' instructional impact when effectively practiced in classrooms. However, it was not until Black and William (1998) extensively synthesized previous research findings that the effectiveness of classroom-level formative assessment in students achievement was class.

Theoretical Framework

The Social Development Theory: The social development theory was propounded by Vygotsky in the year (1978). The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental-role in the development of cognitive. In it every function in the child's cultural development appears twice. First on the social level and later, on the individual level; first between people (inter-psychological) and then inside the child (intra-psychological). This implies equally to voluntary attention, to logical memory and to the formation of concept. A second aspect of Vygotsky's theory is the idea that the potential for cognitive development depends open the "zone of proximal development" (ZPD) a level of development attained when children engage in social behaviour. Full development of the ZPD depend open full social interaction. The range of skill that can be developed with adult guidance or peer collaboration exceeds what can be attained alone. Vygotsky's theory was an attempt to explain consciousness as the end product of socialization.Vygotsky's theory is important to this research work by advocating the use of observation as a method of deriving feedback from students by teachers. He would determine the extent to which a students is capable of solving a problem on his or her own as well the extent to which he or she is capable of solving problem with assistance from a more knowledgeable person. Knowledge of this theory helps the teacher to properly use observation regularly to evaluate students working on their own and those interact with others. Vygotsky would examine the artefacts that students produced as a way to gain insight to their capabilities and accomplishment. This portfolio assessment would be consistent with Vygotsky.

Review of Empirical Studies

Olagunju (2015) investigated the effect of formative Assessment on students' achievement in secondary school Mathematics. Three hypotheses guided the study. The experimental research design was employed.. One hundred and twenty (120) Mathematics students in secondary II Art classes in two public schools in Iseyin Local Government of Oyo State, Nigeria. purposive sampling technique was adopted for the study. Formative Test I, II and III and Mathematics Achievement Test (MAT) were used for data collection. Data were analysed using paired sample t-test and independent sample t-test statistical tools. Findings from analysis revealed that formative assessment has a strong significant difference in the mean achievement score of Mathematics students that are exposed to it ($t = 36.54$, $p = 000$) while there is no significant difference in the mean achievement scores of student who are not expose to formative assessment ($t=2.053$, $p = 0.045$). Also, there is no gender difference in the achievement scores of Mathematics students that are exposed to formative assessment ($t=0.112$, $p = 0.053$). The study recommended that all School Administrators should emphasis the use of formative assessment by all teachers and they should allow, encourage and provide incentives for them to attend seminars, workshops, conference and in-services training to enhance their performance and to acquire necessary skills to constructing formative tests. The above study is related to the present study in the aspect of formative assessment, but the above study is an

experimental study. Amakiri and Ukwuije (2016) investigated effect of Assessment for Learning (AFL) on Biology academic achievement of Senior Secondary Students in Rivers State. The researchers adopted a non-randomized pretest-posttest control group quasi-experimental research design.

The population of the study consists of 34,825, Senior Secondary Two (SS2) students duly registered in public secondary schools (2013/2014 Session) in the 23 Local Government Areas of Rivers State, Nigeria. A total of 400 Senior Secondary Two (SS2) students' (200 males and females respectively) were sampled through multistage sampling technique in Ikwerre, Obio/Akpor, Ogu/Bolo, Okrika and Port Harcourt Local Government Areas. Students' in intact classes were assigned to four experimental groups and one control group. Students' in the experimental groups were subjected to the following Assessment ForLearning strategies: use of questioning, comment only marking, self/peer assessment and formative use of summative assessment, while students' in the control group were subjected to the traditional assessment method. Two research questions and two hypotheses were postulated for the study. A 40 item instrument titled: "Assessment For Learning Biology Achievement Test" (AFLBAT) developed by the researchers was used for data collection. The instrument was duly validated by three subject specialists and two experts in educational measurement and evaluation. An internal consistency coefficient of 0.71 was obtained using Rulon formula. Data for the study were analyzed using descriptive statistics (mean, and standard deviation), analysis of covariance (ANCOVA) and paired sample t-test. The analysis of data was done using SPSS software. The result of the study revealed that: Assessment For Learning strategies effectively improved biology achievement of students'; biology academic achievement of students was enhanced by the following AFL strategies: use of questioning, comment only marking and self/peer assessment but the most effective is comment only marking; AFL has a significant effect onbiology academic achievement of students. Based on the results of the study, the following recommendation among others was made by the researchers: a critical review of classroom assessment methods is advocated, especially in the aspect of comments made by teachers concerning learning outcome of students'. The above study is related to the present study in the aspect of formative assessment, but they differed in the number of research questions and hypotheses.

MATERIALS AND METHODS

Research Design: This study adopted the descriptive survey research design. This enabled the researcher to source data from a population of people who have experienced certain phenomenon of interest to the study. According to Ndagi (1984), a descriptive survey research is concerned with the collection of data for the purpose of describing and interpreting existing conditions. This is, therefore, relevant for this study because it looked at the variables associated with formative assessment practices of teachers.

Area of the Study: The research was carried out in public senior secondary schools in Abakaliki Education Zone of Ebonyi State. The area is characterized by urban, semi-urban and rural areas.

Population of the Study: The population of this study comprises all the secondary schools from the nine local government areas of Abakaliki Education Zones. The number of schools in the zones are one hundred and ten (110) with three thousand, two hundred and twenty (3,220) teachers.

Sample and Sampling Technique: The sample size of this study is 358 teachers. This sample size of 358 was selected from the population using proportionate and simple random sampling techniques, representing about 11% of the population.

Instrument for Data Collection: The instrument for data collection is an adopted rating scale developed by Nwaonu (2017). The rating scale is titled "Formative Assessment Practice of Teachers Scale" (UFAPTS) applied to 30 teachers in 30 schools. The rating scale were divided into sections A and B. Section A aimed to elicit information on the demographic features of the respondents; whereas section B contains items designed in line with the research questions posed in this study so as to attain the study's purpose. The section B of the scale consisted of 29 items distributed to reflect each of the research questions, 1, 2, 3 and 4. The rating scale has four point interval scale of, "Strongly Agree (SA)" (4 points), "Agree (A)" (3 points), "Disagree (D)" (2 points) and "Strongly Disagree (SD)" (1 point) on the other hand, VHE = Very High Extent (4 points); HE = High Extent (3 points); LE = Low Extent (2 points); and VLE = Very Low Extent (1 point).

Validation of the Instrument: The instrument were face-validated by three specialists: one from Educational foundations, one fromMeasurement and Evaluation and the last one from Curriculum Studies, Faculty of Education, Ebonyi State University Abakaliki.

Reliability of the Instrument: To obtain the reliability of the instrument, copies of the rating scale were trial-tested by administering 30 copies to teachers in four junior secondary schools in Afikpo Education Zone which was suitable due to a number of common factors in education, socio-economic and geographical characteristics with the zone under study.Cronbach alpha reliability method was used. The data obtained from the administered rating scale yielded a Cronbach alpha Co-efficient method. The result of the analysis yielded a co-efficient of 0.89 using SPSS. The coefficient was considered high and positive which was an indication that the instrument was reliable enough for use in this study. The choice of Cronbach Alpha is in line with Howith and Cranner (2011) who recommended Cronbach Alpha as a very useful statistical tool for determining the internal consistency of a homogenous instrument. They also recommended that co-efficient correlation index of 40 or above are high for any instrument.

Method of Data Collection: The researcher administered the instrument using Direct Delivery Technique (DDT) with the help of three well trained research assistants from the Education Zones in the State. Each research assistant covered his or her own education zone. The researcher and the assistants visited the respondents in their schools and administered the instrument. The direct method were adopted in the data collection to minimize the loss of the instrument. The research assistants were instructed on how to distribute and collect copies of the instrument from the respondents and thereafter hand them over to the researcher for analysis.

Method of Data Analysis: Frequency, proportion, means, mean of means and standard deviation were used to answer the research questions. Mean scores above 2.50 were considered as Agreed/High Extent while 2.50 and below were considered as Disagreed/Low extent. One sample t-test (i.e. t-test of difference between sample and population means) were used to test the hypotheses 1, 2, and 4 while t-test of different between proportion were used to test hypotheses 3 at 0.05 level of significance using of SPSS version 21.

PRESENTATION OF RESULTS

Research Question 1: What are the secondary school teachers ratings on formative assessment implementation in the classroom?

extent due t3 the fact that their mean scores were below the criterion mean of 2.50.

The mean of means is 2.79, thus leading to theconclusion that teacherstargets using formative the learning targetshave the knowledge/skills to establish learning assessment, can monitor students' progress toward and provide feedback and consider observation technique as the key for formative assessment.

Research Question 3: What is the impact of teachers formative assessment practices on learners academic achievements?

Table 1. Mean ratingsof teachers on formative assessment implantation in the classroom

S/n	Item statement	n	X	s	Decision
1	Formative assessment has an impact on student learning when used in the classroom	3.58	2.8	.818	Agreed
2	Teachers use formative assessment result to modify their results	3.58	3.08	.746	Agreed
3	Formative assessment provide for a better evaluation of students than the formal	3.58	3.00	.750	Agreed
4	Formative assessments provide valuable learning experience for students.	3.58	2.91	.757	Agreed
5	Formative assessment allows one to determine if students are incorporated in the learning objectives	3.58	3.20	.746	Agreed
6	Teachers need a variety of formative assessment methods to assess the students	3.58	3.04	.796	Agreed
7	Formative assessment are not all that important for instruction	3.58	3.04	.734	Agreed
8	Teachers carry out formative assessment practices on a daily basis	3.58	2.93	.723	Agreed
	Mean of means		3.02		Agreed

Table 2. Mean ratings of teachers on their extent of knowledge and skills of formative assessment

S/n	Item statement	n	X	s	Decision
9	Teachers have the knowledge/skills to establish leaving targets using formative assessment	3.58	2.8	.818	Agreed
10	Teachers monitor students' progress toward the learning targets and provide feedback	3.58	3.08	.746	Agreed
11	Teachers consider observation techniques as the key technique for formative assessment	3.58	3.00	.750	Agreed
12	Teachers have the knowledge of formative assessment principle and strategies with cognitive domain understanding	3.58	2.91	.757	Agreed
13	Teacher have received adequate training in classroom formative assessment	3.58	3.20	.746	Agreed
14	Teachers have the knowledge and skills in grading practices	3.58	3.04	.796	Agreed
15	Teachers do not experience difficulty in effectively using formative assessment to guide teaching	3.58	3.04	.734	Agreed
	Mean of means		3.02		Agreed

Table 3. Mean ratings of teachers on the impact of teachers formative assessment practices on learners academic achievements

S/n	Item statement	n	X	s	Decision
16	Formative assessment leads to higher quality learning	3.58	3.20	.712	Agreed
17	It provides information to be used as feedback to improve teaching and learning	3.58	3.06	.776	Agreed
18	It is used to establish students achievement and measure their performance	3.58	3.04	.727	Agreed
19	Formative assessment motivate learners in the classroom	3.58	2.93	.724	Agreed
20	It is used to provide specific instructional support for lower performing students	3.58	3.03	.725	Agreed
21	It is used to guide learners on what they need to do to remedy their weaknesses	3.58	2.92	.804	Agreed
	Mean of means		3.03		

Table 1 shows the mean ratings of teachers on formative assessment implementation in the classroom. The result of the table shows that all the items (1-8) were regarded as agreed since their mean scores were above the criterion mean of 2.50. The mean of means is 3.02, the conclusion is thus: teachers see formative assessment as a tool that provide for a betterevaluation of students than tfye formal and that it also provides valuablelearning experience for students.

Research Question 2: To what extent do secondary school teachers have the knowledge and skills of formative assessment.Table 2 shows the mean ratings of teachers on their extent of knowledge and skills of formative assessment. The result of the table shows that items 9, 10, 11, 12 and 14 were regarded as high extent since their mean scores were above the criterion mean of 2.50. But items 13 and 15 were seen as low

Table 3 shows the mean ratings of teachers on the impact of teachersformative assessment practices on learners academic achievements. The result of the table shows that all the items (16-21) were regarded as agreed since their mean scores were above the criterion mean of 2.50. The mean of means is 3.03, thus leading to the conclusion that formative assessmentleads to higher quality learning feedback to improve teaching and learning.

Research Question 4: What are the challenges teachers have in formative assessment?

Table 4 shows the mean ratings of teachers on the challenges teachers have in formative assessment. The result of the table shows that all the items (22-29) were regarded as agreed since their mean scores were above the criterion mean of 2.50. Lack of formative assessment knowledge, Shortage of textbooks and

Table 4. Mean ratings of teachers on the challenges teachers have in formative assessment

S/N	Item Statement:		n	X	S	Decision
22	Lack of formative	Assessment	358	3.09	.747	Agreed
	Knowledge					
23	Shortage of textbooks and practical resources like tools and materials		358	3.04	.713	Agreed
24	Lack of training for teachers		358	2.82	.718	Agreed
25	Big class size		358	3.37	.643	Agreed
26	Extensive curriculum requirement		358	3.09	.804	Agreed
27	Lack of attention and	resources in	358	3.00	.716	Agreed
	developing the formativ	e assessment				
	Process					
28	Absence of learners from	School	358	2.97	.705	Agreed
29	Shortage of computers create computer	to learn and and diagrams	358	3.13	.682	Agreed
	lessons of shapes in structure less	311S				
	Mean of Means			3.06		

Table 5. One sample t-test for hypothesis I

n	x	μ	s	S.E	Df	t_{cal}	t_{tab}	Decision
358	24.18	20	2.37	.13	357	33.37	1.645	Ho not retained

Table 6. One sample t-test for hypothesis 2

n	X	μ	s	S.E	Df	t_{cal}	t_{tab}	Decision
358	19.56	17.50	2.57	.14	357	15.20	1.645	Ho not retained

Table 7. One sample t-test for Hypothesis 3

n	x	μ	s	S.E	Df	T_{cal}	t_{tab}	Decision
358	18.18	15	1.78	.09	357	357	33.74	Ho not retained

Table 8. One sample t-test for Hypothesis 4

n	x	μ	s	S.E	Df	T_{cal}	t_{tab}	Decision
358	24.50	20	2.24	.12	357	38.01	1.645	Ho not retained

practical resources like tools and materials, Lack of training for teachers among others are the challenges teachers have in formative assessment.

Test of Hypotheses

Hypothesis 1

H01: The mean score of secondary school teachers' perceptions on formative assessment implementation in the classroom is not significantly greater than the criterion mean of 20.

From Table 5, The t-calculated of 33.37 is greater than the t-tabulated of 1.645, it is concluded that the mean score of secondary school teachers' perceptions on formative assessment implementation in the classroom is significantly greater than the criterion mean of 20.

Hypothesis 2

H0₂: The mean score of secondary school teachers' on the extent of their knowledge and skills of formative assessment is not significantly greater than the criterion mean of 17.50.

From Table 6, the result indicated that t-calculated of 15.20 is greater than the t-tabulated of 1.645, it is therefore concluded that the mean score of secondary school teachers' on the extent of their knowledge and skills of formative assessment is significantly greater than the criterion mean of 17.50.

Hypothesis 3

H03: The mean score of the impact of teachers' formative assessment practices on learners' academic achievements is not significantly greater than the criterion mean of 15.From Table 7, the t-calculated of 33.74 is greater than the t-tabulated of 1.645, thus the mean score of the impact of teachers' formative assessment practices on learners' academic achievements is significantly greater than the criterion mean of 15.

Hypothesis 4

H0₄: The mean score of challenges teachers have in formative evaluation is not significantly greater than the criterion mean of 20.

From Table 8, the t-calculated of 38.01 is greater than the t-tabulated of 1.645. Hence the mean score of challenges teachers have in formative assessment is significantly greater than the criterion mean of 20.

DISCUSSION OF FINDINGS

Teachers' rating on formative assessment implementation in the classroom: It was found in this study that teachers see formative assessment as atool that provide for a better evaluation of students than the formal and that it also provides valuable learning experience for students. When this result was tested, it proved significant. In accordance with this finding, Adeneye, Awofala and Babajide (2013) Results showed that a

higher proportion of the pre-service STM teachers seemed to display positive attitudes toward most of the continuous assessment practices tended to performance in social studiespractices while their attitudes toward some be either negative or neutral. To this effect, Udoukpong and Okon (2012) found out that students' academic performance in social studies differed significantly on the basis of their perception of teachers' formative evaluation practices. Students who perceived their teachers' formative evaluation practices as "enhancing to learning" (positive) performed better than their counterparts who viewed same as "not enhancing to learning" (negative). Husain (2013) study shows that majority of ESL teachers! understand the main concepts of formative assessment although some of their teachers have misconceptions on formative assessment. In relation to the present study, it is obvious that most of the teachers in the present study have positive perception about formative assessment.

Extent of teachers' knowledge and skills of formative assessment: It was also revealed in this study that teachers have the knowledge/skills to establish learning targets using formative assessment, can monitor students' progress toward the learning targets and provide feedback and consider observation techniques as the key technique for formative assessment. But when this result was tested, it proved significant. In contrast to this study, Morlgezi and Almon (2011) found that teachers had no knowledge of how to implement Formative Assessment in their classrooms and had a negative attitude towards it. Also Smith &Gorard (2005) study found that teachers in the study had no knowledge of how to implement formative assessment in their classrooms and had a negative attitude towards it. The contradictions recorded in the findings, could be attributed to the fact that thd studies were carried out in different locations.

Impact of teachers' formative assessment practices on learners' academic achievements: Further findings revealed that formative assessment leads to higherquality learning and provides information to be used as feedback to improve teaching and learning. But when this result was tested, it proved significant. Supporting this finding, Moyospre (2015) study revealed that formative assessment has a strong significant difference in the achievement scores of mathematics students that are exposed to it. Also Ojugo, Ugboh, Onochie, Eboka, Yerokun and lyawa (2013) results shows that formative test (with reference to close book formative testing) contributed significantly to students' achievement in mathematics. Amakiri and Ukwuije (2016) study revealed that: Assessment For Learning strategies effectively improved biology achievement of students'; biology academic achievement of students was enhanced by the following AFL strategies: use of questioning, comment only marking and self/peer assessment but the most effective is comment only marking; AFL has a significant effect on biology academic achievement of students. The Similarities recorded in this studied could be attributed to the efficacy of formative assessment on students irrespective of their distinct characteristics or background.

Challenges teachers have in formative assessment: The study finally revealed that; Lack of formative assessment knowledge, Shortage of textbooks and practical resources like tools andmaterials, Lack of training for teachers among others were the challenges teachers have in formative

assessment. But when this result was tested, proved significant. This finding is in consonance with Lumadi (2011) results which revealed major challenges such as policy interpretation, assessment planning, Implementation of informative assessment, the use of variety of methods in formative assessment among others. However, Anderson (2014), study shows that the formative assessment practice is very complex, demanding and difficult task for the teacher in several ways. Similarly, Brown (2006) exposed that the major obstacles to implementation of formative assessment are the big class size, extensive curriculum requirement and the lack of attention and resources in developing the formative assessment process. The similarities recorded among the findings could be attributed to similarities in the socio-political background of the location of the studies.

Educational Implications of the Findings: The results of the study have obvious educational implications. The implication of this study is hinged on the improvement of formative assessment practice in teaching and learning. The findings of this study imply that formative evaluation is diagnostic in nature as it identifies what learners do not know, as well as that which they do well enough. And feedback is vital to formative assessment. Feedback will inform students how well they are progressing. Feedback needs to be timely and specific, and should include suggestions for ways to improve future performance. In the process of bringing about progressive change through formative assessment in students learning abilities, teachers are to give students assessment feedback which will help to improve the students' performance and also help the student to know his area of strength and weakness.

Summary of Findings

From the analyses of the study, the following findings were made;

- Teachers see formative assessment as a tool that provide for a better evaluation of student than the formal and that it also provides valuable learning experience for students.
- Teachers have the knowledge/skills to establish learning targets using formative assessment, can monitor students' progress toward the learning targets and provide feedback and consider observation techniques as the key techniques for formative assessment.
- Formative assessment leads to higher quality learning and provides information to be used as feedback to improve teaching and learning. But when this result was tested, it proved significant.
- Lack of formative assessment knowledge, Shortage of Textbooks, and practical resources like tools and materials, Lack of training for teachers among others are the challenges teachers have in formative assessment.

Recommendations

Based on the findings of this study, the researcher made the following recommendations:

- Teachers should endeavour to use the different formative assessment tools/method to improve learning assessment in schools.

- Teachers should be advised on the need to use formative assessment feedback and to let them know its importance on students' performance.
- School Administrators should emphasize the use of formative assessment by all teachers and they should allow, encourage and provide incentive for them to attend seminars, workshops, conference and in - service training to enhance their performance and to acquire necessary skills to construct formative tests.
- A critical review of classroom assessment methods is advocated, especially in the aspect of Comments made by teachers concerning learning outcome of students.
- Educational administrators/implementers, publishers and policy makers, should endeavour to always emphasize on teachers to always use formative assessment and ensure their implementation.

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