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Formative and Summative Assessment: Trends and Practices in Basic Education

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Abstract
At the basic education level, multiple perspectives on the purposes of assessment and the relationships between effective summative and formative assessments together present real, practical dilemmas and challenges for teachers, who are tasked with promoting pupils learning as well as certifying their performance. 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 while Summative assessment sums up what a student has achieved at the end of a period of time, relative to the learning aims and the relevant state/national standards. In practice of balanced assessment, both summative and formative assessments are an essential part of information gathering. Depend too much on one at the expense of the other, the reality of pupils' achievement in your classroom becomes unclear. A point to make about formative and summative at the basic education level is to question whether there is any value in making a distinction between them or whether the relationship is better considered as a dimension rather than a dichotomy.
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Introduction

In view of some contemporary and national concerns and to make curriculum content more practical, relevant, interest generating to the young learners, Federal Government of Nigeria, through the Nigerian Educational Research and Development Council (NERDC) developed and introduced the 9-Year Basic Education Curriculum (BEC) in 1999. Basic education in Nigeria which include the Lower Basic (Primaries 1-3), Middle Basic (Primaries 4-6) and Upper Basic (Junior Secondaries 1-3) are the basic features of the Revised Basic Education Curriculum. According to Igbokwe (2015), it was developed in response to Nigeria's need for relevant, dynamic and globally competitive education that would ensure that learners at the Basic Education level are capable to compete favourably anywhere in the world in terms of knowledge, skills, techniques, values and aptitude. Promoting pupils' learning is the primary goal of Basic Education Curriculum Assessment is central to this process. This is because assessment provides the context in which educational objectives could be set, and students' progress monitored and expressed to ascertain the depth of learning that have taken place. Hence, pupils' assessment has taken an increasingly prominent role in the basic education system. Assessing learning is a prelude to learning more and allows both teachers and pupils to monitor progress towards achieving set objectives. Assessment is therefore, one of the many classroom instructional strategies at basic education that are part of the repertoire of good teaching. The word 'assess' comes from the Latin verb 'assidere' meaning 'to sit with'. In assessment one is supposed to sit with the learner (Green, 1999). This implies that it is something we do 'with' and 'for' students and not 'to' students. In action word, to assess is to determine, estimate or judge the value of a phenomenon. In all-purposes, educational assessment at basic education is the organized practice of documenting and using empirical data on the knowledge, skill, attitudes, and beliefs to refine programs and improve pupils' learning. Data for assessment can be obtained by directly investigating student work to judge the achievement of learning outcomes or can be based on data from which one can make inferences about learning (Boud & Soler (2015).

Assessment in basic education is therefore the systematic process of collecting, recording, interpreting and using information about pupils' responses to an educational task in order to help teachers and pupils adjust their respective efforts which should be qualitative at least as often as it is quantitative. This suggests that assessment precedes feedback and is at the heart of good teaching and learning at the basic education level. Nworgu (2015) understands assessment to be the systematic process of gathering data from a variety of sources in order to understand, describe and improve learning. According to Anikweze (2013), the term "assessment" is used to refer to the process of investigating the status or standard of a learner's achievement/attainment or the achievement of a group of learners, where group instruction prevails, with reference to expected outcomes which must have been specified as objectives. This covers classroom-based assessment as well as large-scale, external tests and examinations. Assessment in an educational context is defined differently by various authors. However, common to these definitions is gathering of feedback on the learning process, understanding the meaning of this feedback, and using the feedback to improve the teaching-learning process (Steward, Brumm & Mickelson,

2004).

Therefore, all assessment of pupils' learning at the basic education implicates the generation, interpretation, communication and use of data for some purpose. Teachers and policy makers thus use assessment data to identify strengths and weaknesses in pupil and school performance, and to improve the quality of teaching and learning. The data so gotten from assessment can be judged in relation to norms - in which the standard of comparison is the performance of other students (norm-referenced), criteria - in which the standard of comparison is a description of aspects of performance (criterion referenced) or students' previous performance - in which an individual's performance is judged in relation to the student's other or earlier performance (student-referenced) (*Suskie, 2004)*. It is best to keep the purpose of gathering data in mind and to choose methods that are practical as well as technically appropriate. With any of the purposes in mind, there is room for an enormous range of pupil and teacher activities in assessment, but each will involve a) students being engaged in some activity, b) the collection of data from that activity by some agent, c) the judgement of the data by comparing them with some standard and d) some means of describing and communicating the judgement (Ertl, 2006).

In basic education, assessment takes place not only at institutional and curriculum levels, but most often in the classroom. Classroom assessment involves teachers determining what pupils are learning and how and to what extent they are learning in the classroom (Steward, Brumm and Mickelson, 2004). The overall purpose of classroom assessment at the basic education is to explore how evaluation practices can be used to improve the quality and efficiency of teaching and learning with the objective of improving student outcomes. As a continuous process, *Suskie (2004) opine that classroom* assessment establishes measurable and clear student learning outcomes for learning, provisioning a sufficient amount of learning opportunities to achieve these outcomes, implementing a systematic way of gathering, analyzing and interpreting evidence to determine how well student learning matches expectations, and using the collected information to inform improvement in student learning. Classroom assessment is thus at the heart of teaching and learning. At basic education level, an obvious desirable characteristic of good practice in it is that every assessment should be valid for its purpose - that it assesses what it is intended to assess and should provide accountable or reliable data to all stakeholders.

When the above conditions are met at the basic education, assessment allows both teachers and pupils to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. Hence, educational literature is avers with the concept of formative and summative assessment. Formative and summative assessments are usually distinguished in terms of function and purpose. Formative assessment is sometimes referred to as assessment for learning, and summative assessment, as assessment of learning (Looney, 2011). The former is about aiding learning, the latter has a primary function of grading or measuring. According to Theal and Franklin (2010), when the cook tastes the soup, that's formative, when the guests taste the soup, that's summative. 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 pupils' abilities to take ownership of their learning when they understand that the goal is to improve learning and not to apply decisive grading. It can entail pupil assessing themselves, peers or even the teacher, through writing, graded or ungraded quizzes, conversation and more.

In contrast, summative assessments evaluate pupils' learning, knowledge, proficiency or success at the conclusion of an instructional period, like a unit, course or programme. Summative assessments at the basic education level are almost always formally graded and often heavily weighted (though they do not need to be). Trumbull and Lash (2013) observe that summative assessments receive the lion's share of students' attention because they tend to weigh heavily upon students' grades. They also tend to occur at key inflection points and/or endpoints within the overall scheme of the course, whether that be the end of a unit, at the midterm, or at the conclusion of the programme. As such, summative assessments tend to be opportunities to synthesize large amounts of content and/or skills and to engage with course material creatively. Some of the most common types of summative assessment at the basic education level include exams, term papers, portfolios, seminar presentations, project defense, etc. Summative assessments of individual learner may be used for promotion, certification or admission to higher levels of education (Nworgu, 2015). Formative assessment by contrast, draws on information gathered in the assessment process to identify learning needs and adjust teaching. Some educational researchers suggest that information gathered by teachers could be used for both formative and summative purpose. It might however, be considered unhealthy or unfair to use information from a formative task for a summative purpose (Harlen, 2006). One finds support here from Scriven (1967), generally seen as the originator of formative/summative terminology, when he states that formative evaluators should ideally exclude themselves from the role of judge in the summative evaluation. A key challenge is accommodating and balancing summative assessment of learning and formative assessment to support future learning beyond the course of study.

Summative Assessment

Summative assessment sums up what a student has achieved at the end of a period of time, relative to the

learning aims and the relevant state/national standards. The period of time may vary, depending on what the teacher wants to find out. There may be an assessment at the end of a topic, at the end of a term or mid-term, at the end of a year or, as in the case of the national curriculum tests, at the end of a key stage. *Summative assessment* at the basic education provides pupils, teachers and parents with an understanding of the pupil's overall learning. Most commonly thought of as formal, time-specific exams, these assessments may include major essays, projects, presentations, art works, creative portfolios, reports or research experiments. These assessments are designed to measure the pupil's achievement relative to the subject's overall learning goals as set out in the relevant curriculum standards. According to Lane (2018), the design and goals of summative assessments are generally standardized so they can be applied to large numbers of pupils, multiple cohorts and time periods. Data collected on individual pupil, cohort, school or system performance provides schools and administrators with a tool to evaluate student knowledge relative to the learning objectives. They can also compare them with previous cohorts and other schools.

At basic education, summative assessments are typically used to evaluate the effectiveness of instructional programmes and services at the end of an academic term, year or at a pre-determined intermittent time. The goal of summative assessments is to make a judgment of pupils' competency after an instructional phase is completed. Although information gained from summative assessments may be used to improve *future* teaching performance, but most often, it is not provided in a timely fashion to provide opportunities for revision or modification of instructional strategies while the teaching and learning is still in progress. Because summative assessments are usually higher-stakes than formative assessments, it is especially important to insure that the assessment is congruent with the goals and expected outcomes of the instruction. To achieve this, Nicol and Macfarlane-Dick (2007) outlined five approaches that can guide instructors as follows:

- ***Use a Rubric or Table of Specifications*** - Instructors can use a rubric to lay out expected performance criteria for a range of grades. Rubrics will describe what an ideal assignment looks like, and "summarize" expected performance at the beginning of term, providing students with a trajectory and sense of completion.
- ***Design Clear, Effective Questions*** - If designing essay questions, instructors can insure that questions meet criteria while allowing students freedom to express their knowledge creatively and in ways that honour how they digested, constructed, or mastered meaning.
- ***Assess Comprehensiveness*** - Effective summative assessments provide an opportunity for students to consider the totality of a course's content, making broad connections, demonstrating synthesized skills, and exploring deeper concepts that drive a course's ideas and content.
- ***Make Parameters Clear*** - When approaching a final assessment, instructors can insure that parameters are well defined (length of assessment, depth of response, time and date, grading standards); knowledge assessed relates clearly to content covered in course; and students with disabilities are provided required space and support.
- ***Consider Blind Grading*** - Instructors may wish to know whose work they grade, in order to provide feedback that speaks to a student's term-long trajectory. If instructors wish to provide truly unbiased summative assessment, they can also consider a variety of blind grading techniques.

Summative assessments at basic education are also tools to help evaluate the effectiveness of programs, school improvement goals, alignment of curriculum, or student placement in specific programs. **It is therefore** given periodically to determine at a particular point in time what instructional objectives pupils have aachieved. Many associate summative assessments only with standardized tests such as state assessments, but they are also used at and are an important part of classroom continuous assessment. Summative assessment at the zonal/classroom level is an accountability measure that is generally used as part of the grading process. The key is to think of summative assessment as a means to gauge, at a particular point in time, pupils learning relative to curriculum content standards. Although the information that is gathered from this type of assessment is important, it can only help in evaluating certain aspects of the learning process because they are spread out and occur after instruction every few weeks, months, or once a year *(Garrison and Ehringhaus, 2016).* Summative assessments happen too far down the learning path to provide information at the classroom level and to make instructional adjustments and interventions during the learning process. It takes formative assessment to accomplish this.

Formative Assessment

Formative assessment refers to the recurrent, interactive valuation of pupil progress to identify learning needs and shape teaching. Formative assessment at the basic education includes a range of strategies such as classroom discussions and quizzes designed to generate feedback on student performance. This is done so teachers can make changes in teaching and learning based on needs of pupils. It involves the teacher using a communicative process to finding out what pupils know and do not know, and continually monitoring student progress during learning. Both teachers and pupils are involved in decisions about the next steps in learning while teachers use the feedback from formative tasks to identify what students are struggling with and adjust instruction

appropriately (Lane, 2018). This could necessitate the teacher re-teaching key concepts, changing how he/she teach or modifying teaching resources to provide pupils with additional support. Students also use feedback from formative tasks to reflect on and improve their own work.

Formative assessment takes place on a day-to-day basis during teaching and learning, allowing teachers and pupils to assess attainment and progress more frequently. It begins with diagnostic assessment, indicating what is already known and what gaps may exist in skills or knowledge. If teachers and pupils understand what has been achieved to date, it is easier to plan the next step. As the learning continues, further formative assessments indicate whether teaching plans need to be amended to reinforce or extend learning. Formative assessments may be questions, tasks, quizzes or more formal assessments. Often formative assessments may not be recorded at all, except perhaps in the lesson plans drawn up to address the next steps indicated. According to Looney (2011), formative assessment, which emphasizes the importance of actively engaging students in their own learning processes, resonates with countries' goals for the development of students' higher-order thinking skills and skills for learning-to-learn. It also fits well with countries' emphasis on the use of assessment and evaluation data to shape improvements in teaching and learning.

At the basic education level, formative assessment should be seen as an integrated part of the teaching and learning process, rather than as a separate activity occurring after a phase of teaching. Two-way feedback - from students to teacher and teacher to students - is an indispensible feature of it. The merit of such feedback lies in the evidence of its effectiveness in diagnosing pupils' difficulty to improve learning. This denotes learning as a practice in which understanding is actively constructed by students. But when teaching is likened to "impartation of knowledge" and learning as "being taught", feedback from teacher to the student is merely watered down to the price of students work. Formative assessment loses its meaning in teaching and learning seen this way.

Putting Formative Assessment into Practice at Basic Education Level

Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence elicited. There are many logistical barriers to making formative assessment a regular part of classroom practice at the basic education level, such as large class size, extensive curriculum requirements, external pressure for accountability and the difficulty of meeting diverse and challenging pupils individual need. The quality of formative assessment therefore rests, in part, on strategies teachers use to elicit evidence of student learning related to goals and with the appropriate level of detail to shape subsequent instruction (Heritage, 2010).

Classroom cultures are therefore important to effective formative assessment practice at the level ofbasic education. They encompass relationships between and among pupils and teachers, as well as beliefs about learning and learners. A fundamental goal for formative assessment is to help pupils develop skills for self- and peer assessment (Herman, Osmundson and Silver, 2010). To achieve this, teachers need to establish clear learning goals and share criteria for assessing the quality of work with learners. Pupils thus develop skills to monitor their own work so they can gauge how well they are doing in relation to a set standard. They may develop new understandings of who they are as learners, and strengthen self-efficacy (belief in the ability to accomplish specific tasks). Again, the focus is on the process of learning as much as it is on the outcome so that pupils could build skills for learning to learn.

Ideally, formative assessment strategies improve teaching and learning simultaneously. Through it, instructors can help students grow as learners by actively encouraging them to self-assess their own skills and knowledge retention, and by giving clear instructions and feedback. In practice, Nicol and Macfarlane-Dick (2007) outlined seven principles that can guide teacher strategies for an effective f**ormative assessment** as follows:

- ***Keep clear criteria for what defines good performance -*** Instructors can explain criteria for A-F graded papers, and encourage student discussion and reflection about these criteria (this can be accomplished through, rubrics, post-grade peer review, or exam/assignment. Instructors may also hold class-wide conversations on performance criteria at strategic moments throughout term.
- ***Encourage students' self-reflection*** - Instructors can ask students to utilize course criteria to evaluate their own or a peer's work, and to share what kinds of feedback they find most valuable. In addition, instructors can ask students to describe the qualities of their best work, either through writing or group discussion.
- ***Give students detailed, actionable feedback*** - Instructors can consistently provide specific feedback tied to predefined criteria, with opportunities to revise or apply feedback before final submission. Feedback may be corrective and forward-looking, rather than just evaluative. Examples include comments on multiple paper drafts, criterion discussions during 1-on-1 conferences, and regular online quizzes.
- ***Encourage teacher and peer dialogue around learning*** - Instructors can invite students to discuss the formative learning process together. This practice primarily revolves around midterm evaluations and

small group feedback sessions, where students reflect on the course and instructors respond to student concerns. Students can also identify examples of feedback comments they found useful and explain how they helped. A particularly useful strategy, instructors can invite students to discuss learning goals and assignment criteria, and weave student hopes into the syllabus.

- ***Promote positive motivational beliefs and self-esteem*** - Students will be more motivated and engaged when they are assured that an instructor cares for their development. Instructors can allow for rewrites/resubmissions to signal that an assignment is designed to promote development of learning. These rewrites might utilize low-stakes assessments, or even automated online testing that is anonymous, and (if appropriate) allows for unlimited resubmissions.
- ***Provide opportunities to close the gap between current and desired performance*** **-** Related to the above, instructors can improve student motivation and engagement by making visible any opportunities to close gaps between current and desired performance. Examples include opportunities for resubmission, specific action points for writing or task-based assignments, and sharing study or process strategies that an instructor would use in order to succeed.
- ***Collect information which can be used to help shape teaching*** - Instructors can feel free to collect useful information from students in order to provide targeted feedback and instruction. Students can identify where they are having difficulties, either on an assignment or test, or in written submissions. This approach also promotes metacognition, as students are asked to think about their own learning. School staff can also perform a classroom observation or conduct a small group feedback session that can provide instructors with potential student struggles.

According to *Garrison and Ehringhaus (2016), s*ome of the instructional strategies that can be used formatively include the following:

- *Criteria and goal setting* with students engages them in instruction and the learning process by creating clear expectations. In order to be successful, students need to understand and know the learning target/goal and the criteria for reaching it. Establishing and defining quality work together, asking students to participate in establishing norm behaviors for classroom culture, and determining what should be included in criteria for success are all examples of this strategy. Using student work, classroom tests, or exemplars of what is expected helps students understand where they are, where they need to be, and an effective process for getting there.
- *Observations* go beyond walking around the room to see if students are on task or need clarification. Observations assist teachers in gathering evidence of student learning to inform instructional planning. This evidence can be recorded and used as feedback for students about their learning or as anecdotal data shared with them during conferences.
- *Questioning strategies* should be embedded in lesson/unit planning. Asking better questions allows an opportunity for deeper thinking and provides teachers with significant insight into the degree and depth of understanding. Questions of this nature engage students in classroom dialogue that both uncovers and expands learning. An "exit slip" at the end of a class period to determine students' understanding of the day's lesson or quick checks during instruction such as "thumbs up/down" or "red/green" (stop/go) cards are also examples of questioning strategies that elicit immediate information about student learning. Helping students ask better questions is another aspect of this formative assessment strategy.
- *Self and peer assessment* helps to create a learning community within a classroom. Students who can reflect while engaged in metacognitive thinking are involved in their learning. When students have been involved in criteria and goal setting, self-evaluation is a logical step in the learning process. With peer evaluation, students see each other as resources for understanding and checking for quality work against previously established criteria.
- *Student record keeping* helps students better understand their own learning as evidenced by their classroom work. This process of students keeping ongoing records of their work not only engages students, it also helps them, beyond a "grade," to see where they started and the progress they are making toward the learning goal.

Balanced Assessment

Formative and summative assessments have different purposes and both have an important role to play in a balanced assessment exercise. But in a period of increasing external pressure for certification and accountability at basic education, the language of summative assessment became common and the connection to formative assessment seems to be lost. More recently, discussions have refocused on the potential complementary features of formative and summative purposes of assessment. In consequence, assessment was repositioned as a communication process about learning (Houston and Thompson, 2017). Communication processes can begin from the same assessment event. The formative communication channel contributes to sense-making from the

event, while the summative channel contributes to claim making about the event. Seen in this context, the false dichotomy – "formative good, summative bad", as Lau (2016) labels it dissolves. Formative and summative become interdependent, as formative assessment feeds into summative and enhances the quality of information on which final judgements are made and communicated.

Balanced assessment at basic education therefore refers to integrating both formative and summative assessments seamlessly into the instructional process. A long-held ambition for many educators and assessment specialists has been to integrate summative and formative assessments so that data from external assessments used for system monitoring may also be used to shape teaching and learning in classrooms (Looney, 2011). Since any assessment aotcome is only a sample of what has been learned and an approximation of how well it has been learned and the result of several subjective judgements, assessment literature and classroom practice makes clear that the distinction between the two types of assessment is not as rigid as many people believe.

As a result, classroom practices such as student centered approaches which promote affirmative links between formative and summative functions of assessment are sorely desirable at the basic education. Some researchers thus suggests two such schemes of pre-emptive formative assessment which involves teacher schedules of clarifying student understandings before misconceptions could lead to ineffective learning outcomes or loss of grades in summative tests; and the formative use of summative assessment (Black, 2003). So that in turn, classroom-based assessments may provide valuable data for decision makers at school and system levels. Currently, there are important technical barriers to this kind of seamless integration at basic education level. Nevertheless there are a number of promising developments in the field. Ongoing research and development aims at improving testing and measurement technologies, as well strengthening classroom-based formative assessment practices (Heritage (2010). Nonetheless, improved integration of formative and summative assessment at the basic education will require investments in new testing technologies, teacher training and professional development, and further research and development.

In brief, formative assessment cannot be viewed in isolation from summative assessment. An ideal is for formative and summative tasks to be profitably used to inform or support each other. But obstacles in classroom implementation remain a huge task for teachers. A key challenge is the influence of summative assessment looming over formative assessment (Carless, 2006). Cultures of testing and pressure of accountability from major stakeholders may also crowd out formative assessment or prompt teachers to downplay it. Thus, an argument for separating them is that summative assessment is more powerful and that formative risks being swamped by summative assessment. As Harlen (2005) puts it, if we fuse formative and summative, the latter will dominate. But this can also be an argument for synergy.

Conclusion

There are two major types of assessments being used in basic education classrooms today-summative and formative. These assessments have very obvious differences in purpose but also share some similarities depending on how they are administered and evaluated. The primary goal of summative assessment is to be able to provide an overall measure of pupils' performance at a particular point in time in a grade or score format. This report can be communicated to parents, districts, states, and others and can have serious consequences attached to it for both the student and the school, such as students not being promoted to the next grade, not getting into university of choice or the school not receiving funding. The primary goal of formative assessment is to provide feedback within the classroom with no real consequences attached. Another way to distinguish between formative and summative assessments is that formative assessments can be considered a type of practice for students because they are not being graded, whereas summative assessments depend completely on a grade or score.

Formative assessments are generally considered part of the instructional process and are intended to provide information needed to help instructors adjust their instruction and help pupils learn while instruction is occurring. Whereas formative assessments usually provide feedback for the student to review and develop their learning, summative assessments are rarely returned to students. When assessments provide only a numerical grade and little or no feedback, as the Common Entrance Examination (CEE) and West African Examination Council's (WAEC) Senior School Certificate Examination (SSCE) does, it is hard for pupils and teachers to pinpoint learning needs and determine the way forward. Additionally, being a form of "high stakes" assessment, results may be perceived as a way of profiling students - for high achieving pupils there is recognition and reward, while for the lower performing pupils there is potential stigma and humiliation. The later should not be associated with basic education system.

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