

FORMATIVE ASSESSMENT PRACTICES OF SENIOR HIGH SCHOOL TEACHERS IN THE ASHANTI MAMPONG MUNICIPALITY OF GHANA

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ABSTRACT: *This study investigated the Senior High School (SHS) teachers' formative assessment practices in the Mampong Municipality of Ghana. Three research questions guided the study: What is SHS teachers' knowledge of formative assessment? What are SHS teachers' formative assessment practices? How does formative assessment contribute to improvement in teaching and learning? Stratified and simple random sampling methods were used to select 80 teachers from the four public SHSs in the Municipality for the study. The study used a questionnaire for data collection. The study revealed that about half of the teachers lacked the conception of formative assessment and its sub-concepts. Generally, the teachers were involved in certain practices which unknown to them were formative assessment practices. They saw these practices as norms and daily routines that needed to be done as part of the teaching and learning procedures. To them, these practices contributed to improvement in teaching and learning. From the findings, the researchers recommended that, to increase the understanding of SHS teachers on formative assessment and its sub-concepts, pre-service teacher training must place much emphasis on the theory and practice of formative assessment and in-service training activities should be organised for teachers already in the field. Stakeholders of education need to give this the needed support.*

KEYWORDS: assessment, formative assessment practices, summative assessment, senior high school, continuous assessment, school based assessment

INTRODUCTION

In educational systems worldwide, tests and examinations are a classic way of measuring students' progress and are integral to accountability of schools and the educational system. Assessment is inseparably linked with teaching and learning. The contribution of assessment to an educational system is so significant that it forms the basis for almost all fundamental decision making. Throughout an educational system, decisions have to be made about students, curricula and programmes, and educational policies. According to Nitko (1996), decisions about students include management of classroom instructional delivery, placement of students into different types of programmes, assignment of students into appropriate groups, guidance and counselling of students, selection of students for educational opportunities such as award of scholarship and prizes, and giving them credentials and certificates based on their competence. Decisions about students' learning, curricula and programmes include decisions about their effectiveness (summative assessment) and about ways to improve them (formative assessment).

In many parts of the world and especially in developing countries, the use of assessment for instructional management decisions in the classroom and the school settings have been limited to the norm referenced approach to the interpretation of assessment results where

individual student's results are described in terms of the performance of a whole class or norm group. This is done mainly by ranking of students (Black & William, 1998a; Stiggins, 2002; Stiggins, 2005; Myers, 2004, Garrison & Ehringhaus, 2009). The near absence of classroom based formative assessment practices (assessment for learning) as prescribed by the formative aspect of the Continuous Assessment (CA) and the School Based Assessment (SBA) in many Ghanaian classrooms renders the instructional management decisions function of classroom assessment unrealised to its fullest. The fact here is corroborated by two studies by Asamoah-Gyimah (2003) who evaluated the practice of the CA programme in the Ashanti Region of Ghana and Nugba (2009) who investigated basic school teachers' adherence to laid down rules in the practice of the SBA in the Obuasi Municipality of the Ashanti Region of Ghana. Both researchers concluded that to a greater extent, Ghanaian teachers do not follow the laid down rules in conducting the CA and the SBA programmes. The obvious implication here is that the formative aspect of the CA and SBA which is the main driving force for improvement in classroom instruction is also not given any attention.

Earlier researches in the field of assessment in Ghana investigated into the general testing practices of secondary school teachers in parts of the country and reported that, to a great extent, teachers followed the standard approved principles in their classroom test development (Amedahe, 1989; Quagrain, 1992; Oduro-Okyireh, 2013). These studies focused only on general adherence to laid down testing principles and not formative assessment to be specific. This means that as a country, our educational system has not paid the needed attention to the formative aspect of our classroom assessment and hence the unavailability of enough empirical literature on formative assessment in the country. It also paints the bigger picture that the state of affairs concerning the practice of formative assessment in the Ghanaian classroom is uncertain.

The state of affairs concerning formative assessment in the country is suggestive of the fact that the Ghanaian educational system is losing out on all the probable gains that formative assessment holds in contributing to improvement in the instructional practices of the teacher in the classroom. The connection between good assessment practices and improvement in instruction has been established locally by research (Oduro-Okyireh & Partey, 2014). Earlier empirical studies elsewhere have also proven that the systematic use of assessments, particularly formative assessment has in reality shown promise in improving students' learning and achievement (Black & William, 2006; Earl & Katz, 2006; Assessment Reform Group, 2002). The conclusion to this empirical evidence in the form of a recommendation is given by Black, Harrison, Lee, Marshall & William (2004) upon their review of studies on formative assessment that formative assessment needs to be mostly stressed in the classroom because it has the potential to reduce the achievement gap by helping low achievers the most.

On the part of Oduro-Okyireh & Partey (2014), to ensure that the gains of formative assessment are fully realised, teachers must approach classroom assessment with a comprehensive view and also vary their interpretation of assessment results, to focus more on criterion referenced interpretation which is diagnostic in nature with the tendency to help students identify problem areas in their learning and also know the extent to which they have achieved stated instructional objectives. The effective integration of formative assessment with classroom instruction and the subsequent realisation of the gains that it holds for instruction and learning are a matter of necessity in the classroom if there must be any improvement in instructional delivery and learning. It is therefore highly justified in carrying out a study to investigate into the formative assessment practices of SHS teachers in one of

the educational municipalities of Ghana to ascertain the state of affairs with respect to formative assessment.

Theoretical framework of the study

Looking for a working description for formative assessment alongside summative assessment in the school setting, Madison-Harris, Muoneke and Times (2012) reviewed series of literature on formative assessment and concluded that “it is a systematic, continuous process used during instruction that provides a feedback loop to check for progress and detect learning gains, identify strengths and weaknesses and narrow gaps in learning” (p. 1). Magno and Lizada (2015) in their review, also cite some of the important reports that centred on issues on formative assessment at the start of the 21st century and included that of Clark (2012a) who disclosed that formative assessment is an instructional process that builds lasting learning competencies. On the part of Heritage (2010), formative assessment is explained as an essential part of facilitating the learning process stemming from Vygotsky’s (1978) Zone of Proximal Development. Magno and Lizada (2015) again cite Yorke (2003) who emphasized that formative assessment is a way of refining the instructional process in higher education.

According to Clark (2012a), the theory of formative assessment is best perceived to be a unifying theory of instruction, which guides instructional practice and improves the classroom learning process by developing Self-Regulated Learning (SRL) strategies among learners. Theoreticians in educational assessment agree that SRL is predictive of improved academic outcomes and motivation due to the fact that students gain the needed adaptive and self-directed learning characteristics required for an enhanced commitment to the learning process and consequent successful performance.

SRL is a self-regulatory behaviour which refers to a process of taking absolute charge of one’s own learning behaviour and possessing the ability to evaluate it. The main aim of formative evaluation is improvement in classroom instruction and Clark (2012a) posits that this is best achieved if formative assessment is used strategically to develop SRL in learners in which through metacognition, strategic action, and motivation to learn, will later result in the development of lifelong learning capabilities in the learner.

Statement of the problem

The new reforms in education in Ghana introduced in the 1987/1988 academic year which brought into forth the Junior Secondary School (JSS), which was later changed to Junior High School (JHS), and the Senior High school (SSS), which was later changed to Senior High School (SHS) was accompanied with a new assessment system. This was termed Continuous Assessment (CA) which was originally meant for both the Basic School and the SSS. Due to the tediousness of the work involved in the CA, the basic school upon consensus with the Ministry of Education (MoE) and the West Africa Examinations Council (WAEC) was given another rendition of the CA which is called the School Based Assessment (SBA). A major characteristic of both the CA and the SBA which is the main driving force of instructional improvement in the classroom is that it is formative.

From general observation as practicing teachers in the Ashanti Mampong Municipality for about a decade, we give credence to the fact that many SHS teachers do not practice the CA with the formative perspective as expected. The dominant characteristics of formative

assessment when used together with classroom instruction put forward by Magno & Lizada (2015) and Black & William (1998a) which are listed below are not usually seen in the Ghanaian classroom. These are, formative assessment:

- i. works along with the perspectives of assessment “for” and “as” learning;
- ii. is rooted with instruction;
- iii. evaluates instruction as it is ongoing by use of feedback;
- iv. involves self and peer assessment;
- v. helps the students focus on the learning goal;
- vi. moves from determining discrete skills to integrated skills;
- vii. uses continuous and multiple forms of assessment; and
- viii. involves teachers working out with students to reach the learning goal.

The general absence of these features of formative assessment in the Ghanaian classroom is substantiated in the studies of Asamoah-Gyimah (2003) and Nugba (2009) who evaluated the practice of the CA and the SBA respectively. The CA and SBA thrives on formative assessment and they concluded that generally, teachers do not follow the laid down principles. This present study was therefore undertaken in the Mampong Municipality to ascertain the state of formative assessment which is an integral part of the CA, as a confirmation or otherwise to the findings of Asamoah-Gyimah (2003) and Nugba (2009).

Objective of the study

The main objective of this study was to examine the formative assessment practices of SHS teachers in the Mampong Municipality of Ghana. It was specifically to:

1. assess the extent of SHS teachers’ knowledge of formative assessment;
2. find the kind of formative assessment strategies that are used in the classroom; and
3. identify teachers’ perceptions about how their formative assessment practices contribute to improvement in teaching and learning.

Research questions

The following questions were formulated to facilitate the attainment of the study’s objectives.

1. What is SHS teachers’ knowledge of formative assessment?
2. What are SHS teachers’ formative assessment strategies?
3. What are SHS teachers’ perception of how their formative assessment practices contribute to improvement in teaching and learning?

Significance of the study

Firstly, a study of this kind will help inform teachers on their knowledge of the practices of formative assessment in their classroom. This study will therefore be a relevant reference that will add to the scanty formative assessment literature in the country. Secondly, the literature on which the study is pinned will inform educational planners and teachers on the potentials that formative assessment holds in classroom instruction as an incentive for teachers to engage in it. Thirdly, the Ghana Education Service (GES) and school administrators may use the research findings to develop assessment guidelines for their respective schools. The training of teachers on assessment in teacher training institutions in the country can only be effective if the designers of the training programmes know what teachers are already doing and what they are not doing well. Research in this area can inform the design of such training programmes. Finally, the results of this study may provide insight for educational assessment policy regarding formative assessments.

METHODOLOGY

Research Design

The design used was the descriptive research design. This was based on the claim of Cohen and Manion (2007) that the descriptive research design has the potential to generate useful and analysable data that represent a wider target population; generate numerical data for ease of comparison; and provide descriptive, inferential and explanatory information. This design was used to obtain information concerning the current status of formative assessment and to describe “what exists” with respect to variables or conditions in this situation. The researcher adopted the descriptive research design because it had the advantage of producing a good amount of responses from a large number of respondents on the practice of formative assessment.

Population, Sample and Sampling Procedure

The target population for the study was teachers in the four (4) Public Senior High Schools in the Mampong Municipality. The population was made up of the 325 teachers in the Municipality who were teachers of all the subjects studied at the SHS level. A total of 80 teachers were used as respondents for the study. Stratified and simple random sampling methods were used to select the sample. Proportionate number of respondents in each school was determined by dividing the number of subjects needed for the study, which was 80, by the total number of teachers in all the schools, which was 325, and then multiplied by the number of teachers in a given school. After this, simple random sampling method was used to select the subjects in each school.

Instrumentation

The main instrument used to collect data was a questionnaire. Items used were well structured and close-ended and with only one item being open ended. The items on the questionnaire asked for teachers’ views on their knowledge of formative assessment; their assessment practices that can be termed formative; and their perception as to whether these formative practices contribute to improvement in teaching and learning. The questionnaires

were administered by the researchers to the respondents in each school on given days and collected after completion.

Data Analysis Procedure

Data were analysed using descriptive statistics which were mainly the arithmetic means and standard deviations of responses which showed the degree of indulgence in given practices; and the extent of agreement to statements of ideas. The binomial test of proportions was also used to test whether given proportions are significantly higher or lower than a hypothesized proportion of 50%. The analyses were arranged on the basis of the research questions.

RESULTS

Research Question 1: What is SHS teachers' knowledge of formative assessment?

This research question sought to find out SHS teachers' knowledge of formative assessment. Items in this section focused on the meaning of formative assessment, when it is used and the formative assessment procedures often used by SHS teachers. The analyses are shown in Tables 1 to 3.

Table 1: Binomial Test of Proportions for Meaning of Formative Assessment

Meaning of Formative Assessment	N	Observed Proportion	Test Proportion	P-value
1. It is the type of assessment which takes place in a systematic form throughout a course. OR 2. It is a set of assessment tools used after a programme to measure students' achievement which provides evidence of students' competence and or programme effectiveness.	35	0.44		
3. It is a set of assessment procedures used by the teachers and students during instruction in a given programme that provides feedback to adjust ongoing teaching and learning to aid students improve their achievement of intended instructional outcomes.	45	0.56	0.50	0.314

From Table 1, the observed proportion of 56% for the third meaning of formative assessment which is the correct answer is higher than but not significantly different from the hypothesized proportion of 50% ($p > 0.05$). It can therefore be concluded that approximately half of the respondents in the study have knowledge of what formative assessment is. Approximately half (44%) on the other hand, have no idea about formative assessment.

On the question of when formative assessment is used in the classroom, Table 2 gives the

analysis of respondents' responses.

Table 2: Binomial Test of Proportions for the Timing of Formative Assessment

Timing	N	Observed Proportion	Test Proportion	P-value
Before instruction in a given programme or at the end of a programme.	28	0.35		
During and after instruction within a given course or programme.	52	0.65	.50	0.010

From Table 2, it could be seen that the proportion of 65% who indicated that they used formative assessment only during and after instruction within a given programme, is significantly higher than the test proportion of 50% ($p < 0.05$). The conclusion therefore is that most of the teachers in the study who practiced formative assessment do so at the right timing.

When the 52 (65%) of the respondents in Table 2 who indicated that they used formative assessment only “during and after instruction within a given course or programme”, were asked about the type of formative assessment procedures they used in their classrooms, they responded as follows. Class exercises, 52.5%, oral questions and answers during instructional delivery, 22.5%, class tests, 12.5%, and home assignment, 12.5%. The use of class exercises was more pronounced among the formative assessment users in the study than any other procedure.

Research Question 2: What are SHS teachers' formative assessment strategies?

Respondents in the study were asked to indicate the frequency to which they used ten (10) formative assessment strategies so as to facilitate learning in their classrooms. The items were structured on a four-point Likert type scale which ranged from Never (1), Sometimes (2), Very often (3), to Always (4). In the analysis, a strategy whose arithmetic mean is greater than 2.5 was taken to be a practiced strategy while those with arithmetic means less than 2.5 were taken to be those not practiced. Table 3 below gives the means and standard deviations of respondents' responses.

Table 3: Means and Standard Deviations of Formative Assessment Strategies

Formative Assessment Strategy	N	Mean	Std Deviation
1. I use the question and answer technique effectively and continuously during instruction.	80	3.36	.802
2. I link all assessment procedures to instructional goals.	80	3.25	.751
3. Assessment tasks given to students are scored promptly.	80	3.05	.780
4. I give feedback from assessment tasks to students promptly.	80	3.49	.663

5. I discuss feedback from assessment tasks with my students (i.e., class exercise, homework, project work, etc.)	80	3.22	.738
6. I engage my students in remediation when necessary based on students' feedback from assessment tasks.	80	2.20	.512
7. I use evidence I gather from assessment to determine the next step of instruction.	80	3.11	.629
8. I encourage students to do peer assessment in my classroom.	80	2.75	.844
9. I encourage students to do self-assessment in my classroom.	80	2.75	.854
10. I make formative use of summative assessments during instruction.	80	2.94	.811

From Table 3 above, it could be seen that the only formative assessment strategy which is not practiced by the respondents is 'strategy 6', which is "I engage my students in remediation when necessary based on students' feedback from assessment tasks", which has a mean of 2.20. The standard deviations of all the strategies are relatively smaller which show the closeness of respondents' responses.

Research Question 3: What are SHS teachers' perceptions of how their formative assessment practices contribute to improvement in teaching and learning?

This question sought to find out whether teachers have the perception as to whether their formative assessment strategies and practices contribute to effective teaching and learning in their classrooms. The items were structured on a four-point Likert type scale which ranged from Strongly Disagree (1), Disagree (2), Agree (3), to Strongly Agree (4). In the analysis, a practice whose arithmetic mean is greater than 2.5 is taken to be perceived as contributing to effective teaching and learning and vice versa. Table 4 gives means and standard deviations of respondents' responses.

Table 4: Means and Standard Deviations of Teachers' Perceptions of Contributions of Formative Assessment Practices to Teaching and Learning

Practice	N	Mean	Std Deviation
1. Assessment tasks given regularly direct teaching and learning in the classroom.	80	3.81	.664
2. Assessment tasks given regularly and marked promptly give feedback to students that motivate them to learn harder.	80	4.21	.596
3. Class exercises marked promptly make feedback available to students and teachers for decision making.	80	4.71	.658
4. Students must be assessed on every topic taught so as to be assured of the extent of achievement of stated instructional objectives.	80	4.40	.596
5. Assessment must be made on topics taught in class only.	80	3.40	1.243
6. Classroom assessment is important to enable the teacher determine the next stage of instruction.	80	4.40	.784
7. It is essential to ensure that instructional goals and success criteria are well understood by students.	80	3.60	1.148
8. Low marks retard effective teaching and vice versa as teacher is expected not to leave any student behind.	80	3.33	1.055
9. Assessment motivates the teacher to put in extra effort to promote learning.	80	4.20	.970
10. Classroom assessment gives immediate feedback to help the teacher to evaluate his teaching.	80	4.41	.740

It could be seen from Table 4 that all respondents in the study indicated their agreements to the issues on formative assessment practices which they perceived as having the capacity to contribute to effective teaching and learning in the classroom. All the issues raised have arithmetic means greater than 2.5.

DISCUSSION

With the results in Tables 1 and 2, it could be seen that the result in Table 2 more or less substantiates the result of Table 1 in the sense that as many as 35% of the teachers did not know the right timing for formative assessment in the teaching learning situation. From the result in Table 1, it could also be argued that a fraction of the larger proportion of 65% who indicated knowledge of the right timing for formative assessment in Table 2, did so not due to a good working knowledge of it but rather as a result of certain practices that are enforced in the implementation of the CA in Ghanaian schools.

The Ministry of Education Policy on Continuous Assessment stipulates that at the first and second cycle levels, the teacher is expected: to give class assignment/exercise every fortnight and record the scores of four of them; conduct a class test either every three or four weeks;

and give at least four project/homework in a term (Ministry of Education, 1996; Quansah, 2005). This therefore becomes a formal obligation on many teachers who just comply without taking a look at the formative aspect of their actions. In this situation, it will not be far from the truth to say that, teachers in the study generally have poorly understood assessment and for that matter have taken the whole process for granted.

From the results in Table 3, teachers in the study not practicing 'strategy 6', in the view of the researchers could be attributed to the extensive nature of the SHS syllabus which even affects the proper execution of some of the formal co-curricular activities which are part of the schools' programmes. Remediation, however, is undoubtedly an essential integral part of formative practices and as such should not be ignored. For the fact that teachers in the study practiced the other nine strategies in Table 3, is very laudable and must be commended. Another issue in the view of the researchers is that since all the respondents in the study were made to respond to these set of statements in Table 3 and not only the 65% who indicated knowledge of the right timing for formative assessment in Table 2, a possible conclusion that these researchers can draw is that teachers by virtue of their professional training and experiences in the school system could be indulging in certain practices which they might not be aware constitute formative assessment practices.

This finding by and large is consistent with the position of many educational measurement experts such as Magno & Lizada (2015) and Black & William (1998a) on the dominant characteristics of effective formative assessment in the classroom which have been already enumerated. The formative assessment strategies indicated as practiced by the respondents in the study as shown in Table 3 are only an exemplification of the elements outlined in the assertion of Magno & Lizada (2015) and Black & William (1998a) as features of formative assessment. This is in the right direction.

The results in Table 4, reveals that teachers in the study have various perceptions that they are working toward the maximum utilization of available strategies to ensure the achievement of the purposes of formative assessment in the classroom. This is explained and buttressed by the assertion of Gallagher & Worth (2008), cited by Madison-Harris, Muoneke and Times (2012), that,

the purposes of formative assessment are to help teachers aim at instruction that meets specific learning goals and objectives, support students' learning, check for growth and determine learning gains, identify strengths and weaknesses, find out misconceptions following instruction, differentiate instruction, evaluate the effectiveness of instructional methods or programmes, and transform curricular (p. 2).

By these perceptions that teachers hold, it is undisputable that teachers' formative assessment practices would contribute positively to teaching and learning in the classroom.

As pointed out earlier in the discussion under research question one, it could be argued on the basis of the result in Table 1, that, a considerable proportion of the respondents who indicated very good perceptions for their formative assessment practices, did so not due to a possession of a good working knowledge of it but rather as a result of certain practices that are enforced in the implementation of the CA in the schools. Teachers' personal experiences in the school system and their pre-training programmes as professionals can also expose them to certain good practices that have the tendency to result into beneficial gains in teaching and learning.

CONCLUSION

From the findings of the study, conclusions can be drawn that even though, half of the teachers lack the conception of formative assessment, generally the teachers were involved in certain practices which unknown to them are formative assessment practices. They saw these practices as norms and daily routines that needed to be done as part of the teaching and learning procedures. To them, these practices contributed to improvement in teaching and learning. In sum, SHS teachers have a low level of formative assessment literacy, yet they have good assessment practices and are of the view that, when classroom assessment is used appropriately and effectively, it provides immediate feedback to improve teaching and learning.

RECOMMENDATIONS

The following recommendations are put forward based on the findings of the study:

To increase SHS teachers' formative assessment literacy, pre-service training instruction in educational measurement must be structured to have much emphasis on the theory and practicalities of formative assessment. Already trained teachers in the field should be given the necessary in-service education and training courses on formative assessment. This is because broadening teachers' conceptions of the formative assessment subject matter and other sub-concepts under it, all things being equal, will help influence their formative assessment practices in the right direction.

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