

A Meta-Analysis on Formative Assessment Practices in Ghana

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Abstract

The purpose of this study was to analyse the methodology and results of previous studies (1990 to 2016) on formative assessment practices of teachers at all levels of education in Ghana. Due to limited documentation of formative assessment studies in Ghana, literature review covered 10 research articles, abstracts, books accessed electronically or printed materials. They were collected for reading purpose. Of these, 7 studies were finally selected for meta-analysis on the basis of formative assessment implementation through literature review. These include 5 qualitative case studies and 2 mixed studies. Results revealed that, formative assessment is well embraced and practiced among teachers at all levels of education in Ghana. Moreover, methodologies adopted by previous studies on formative assessment practices in Ghana were credible since they were all exploring various aspect of formative assessment practices. It is however, recommended that future educational researchers shift attention to quantitative dimensions of the phenomenon, this would allow for large sample size and inferential study.

Keywords: formative assessment, continuous assessment, school base assessment.

1.0 Introduction

A common method advocated in educational literature 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. An almost undeniable belief in education is that studies have conclusively demonstrated that the use of formative assessment facilitates improvement in instructional practices, identifies “gaps” in the curriculum, and contributes to increased student performance (Asare, 2015; Dunn & Melvenon, 2009; Wininger, 2005). Perie, Marion, and Gong (2007) argue that assessment issues can be clarified if assessment is defined by its purpose. From this perspective formative assessment is defined as assessment used by teachers and students to adjust teaching and learning, as compared to interim assessment that informs policymakers or educators at the classroom, school, or district level. It is worth noting that the purpose for which any assessment is developed and validated is a crucial aspect of assessment (Dunn & Melvenon, 2009). This presupposes that a test that was designed to give formative feedback is only formative if the teacher uses it to provide feedback for the student and not for grading. Although an assessment procedure may be arranged and packaged as a formative or summative assessment, it is the instructor’s actual methodology, data analysis, and use of the assessment results that determine whether an assessment procedure is formative or summative. For purposes of emphasis, Wininger (2005) used a summative assessment as a formative assessment by generating both quantitative and qualitative feedback about the assessment results of the exam. Wininger (2005) called this formative summative assessment.

In Ghana, several studies have been conducted across all levels of the educational ladder to show that formative assessment procedures are used by teachers (Akyeampong, 1997; Hayford, 2007; Bekoe, et al. 2014). Even though there is no empirical evidence in Ghana that suggest that the standard of education has fallen (Amedahe, 2004), test-based accountability is a critical issue considered by many stakeholders of education in Ghana, ranging from governments, Ghana Education Service, administrators of education, parents, and researchers just but to mention a few. It is worth noting that decisions about embracing an information about the utility of an educational practice (for example, formative assessment practices) cannot be based on the results of individual studies, because results typically vary from one study to the next even if they are on a positive continuum. First, there is the need for the methodologies of those studies be aligned with the purpose for which such studies were conducted to tell the soundness and appropriate of the findings generated. Second, findings of several studies on the phenomenon need to be compared and analysed for a consummate understanding and broader picture of the phenomenon. In this respect this current study is conducted, specific to formative assessment practices in Ghana.

2.0 Research Methods

The study was to investigate, how far the methodology adopted in previous researches (1990-2016) on formative assessment practices among teachers at all levels of the education ladder in Ghana was congruent with the objectives and results. Literature review covered ten (10) different types of studies taken from journal articles, abstracts, books accessed electronically collected for reading purposes. Of these, 7 studies were finally selected for meta-analysis on the basis of teachers’ formative assessment practices. These included 5 qualitative case studies and 2 mixed studies. This research was carried out in three steps. In the first step literature review was

done via e-access only. For the electronic access and search and Advanced search, Google, googlesolar.com, and www.ask.com were mainly used. In the second step, the complete version of each article selected to be part of the study was read many times for a clearer understanding with respect to the objectives, methodology and results of the studies. In the third step, the concept of formative assessment practices and key indicators which were more frequently addressed in most of these previous studies conducted in Ghana were identified and aligned with their methodologies.

3.0 Analysis of Formative Assessment Practices Studies

The analysis was done using selected samples of studies on formative assessment practices conducted in Ghana. To begin with, Akyeampong (1997) conducted a study to examine the nature and scope of activities and problems faced by teachers in the practice of continuous assessment at the post-secondary teacher training level in Ghana. The research also examined the training and guidance provided for those undertaking continuous assessment, and the impact of the new assessments upon teaching and learning. A qualitative case study was adopted as the design and three teacher training (now Colleges of Education) institutions were selected based on the researcher's convenience as the study areas. Data were collected within 90 days via interview and observation of classroom teaching using 16 tutors, 4 vice principals and 65 students were used as the study respondents. The findings of the research suggest that, many problems continue to threaten the benefits of implementing continuous assessment in the training colleges. Critical to such problems include; operational and structural conditions in the colleges, professional support systems for tutors to carry out continuous assessment, tutor competency in assessment and considerations rooted in the values and beliefs of tutors about assessment which define their assessment culture and agenda. As a weakness, the sample size was not adequate enough to warrant such a generalization regarding the problems that mitigate teacher training colleges' tutors' continuous assessment practices. Hence the urgency of a meta-analysis to compare this study findings to other studies.

Hayford (2007) explored the use of continuous assessment and the experiences of lower attaining pupils in primary and junior secondary schools at Agona and Affutu Districts in Ghana. The study adopted a range of data collection methods including: self-completed questionnaires, semi-structured and focus groups interviews. A systematic sample of 107 primary and junior secondary school teachers answered questionnaires and 12 teachers from the cohort were interviewed. Additionally, four focus groups of primary 6 lower achieving pupils were interviewed. The study revealed that majority of the teachers in the study felt strongly that continuous assessment enabled teachers to support lower achieving pupils to improve. Moreover, the teachers identified policy, larger classes and lack of training as barriers to supporting lower achievers to improve. Furthermore, lower achieving pupils in the study reportedly became anxious, frustrated, and helpless before and during class tests, and upset when they failed. Amazingly, the lower achieving pupils that were interviewed indicated that they find classroom task difficult and less supportive learning environments is their major challenge. Clearly, this is in sharp contrast of the information that the researcher received from the interviewed teachers and lower achieving pupils' regarding the importance of CA.

Bordoh, Bassaw and Eshun (2013) investigated cognition of Social Studies tutors in formative assessment in Colleges of Education in Ghana. This study adopted a multiple case study research design. The study was carried out in three Colleges of Education in Central Region of Ghana. The data were used together to form one case. Both the tutors' and the colleges were purposively and conveniently selected for the study. Interviews and classroom observation were used for data collection. It was revealed that formative assessment is the hands on deck process of information on the students' academic achievements in the classroom. It was recommended that since curriculum dictates what is taught and assessed in an educational institution, the University of Cape Coast (the examining body) should re-orient its course content for Colleges of Education to be more of skills acquisition, positive attitudes, values and not the over-emphasised knowledge components as revealed by tutors.

Bekoe, Eshun and Bordoh (2014) examined the formative assessment techniques that tutors use to assess teacher-trainees' learning in Social Studies. Case study research design was used. The study was carried out in three Colleges of Education in Central Region of Ghana. The data were used together to form one case. Both the tutors and the colleges were purposively and conveniently selected for the study. Interview guide and classroom observation checklists were administered to nine (9) Social Studies tutors of Colleges of Education. The research found out that due to hasty nature in formulating formative assessment and scoring, tutors laid emphasis on cognitive domain to the neglect of affective and psychomotor domains which are also of paramount importance. Furthermore, the findings indicated that diagnostic assessment, portfolio assessment, self-assessment and peer-assessment are the major techniques of formative assessment in the Colleges of Education institutions in Ghana. The major challenge of the study is that, the sample size is inadequate for sound generalization and also the study failed to tell the reason for tutors' emphasis on cognitive domain to the neglect of the other domains.

Eshun, Bordoh, Bassaw and Mensah (2014) conducted a study to evaluate students' learning using formative assessment in Colleges of Education in the Central Region of Ghana. The research was meant to answer the question: To what extent do tutors use formative assessment to evaluate student learning? This study

adopted a case study research design. The study was carried out in three Colleges of Education in the Central Region of Ghana. The data were used together to form one case. Both the Tutors and the Colleges were purposively and conveniently selected for the study. Interviews and classroom observation were used. The semi-structured interview guide and the structured classroom observation setting checklists were administered to nine (9) Social Studies tutors. It was found that evaluation in the classroom motivates tutor-student relationship in formative assessment but it was observed that most of the tutors were not using concrete evaluation feedbacks. Moreover, tutors agreed that the use of Formative Assessment Classroom Techniques (FACTs) is an integral part of teaching and learning. The outcome of the study is quite not convincing since reasons for tutors not using concrete evaluation feedbacks were not given. Again, students should have been involved to give their impressions about how formative assessment procedures help their learning.

Asare (2015) investigated kindergarten teachers' classroom formative assessment practices based on two subscales: (a) teachers' modes of assessment frequently used, and (b) their reasons for selecting a particular mode of assessment. The sequential mixed methods research design was employed. The quantitative data were gathered through questionnaires administered to 192 teachers in public and private kindergartens schools in six regions of Ghana. The qualitative data were gathered through interviews with three participants selected from the 192 sampled teachers. Independent samples t-test was employed to test the quantitative data. The results of the study indicated that paper- and- pencil test mode of assessment is used frequently by the teachers. In addition teachers also appeared to be using a particular mode of assessment just to meet the expectations of the parents and educational leaders without meeting the curriculum assessment prescription. Results further showed no significant difference between the public and private kindergarten school teachers on almost all the items in the two subscales used in this study but differed significantly on four reasons for selecting a particular mode of assessment. Workshops and in-service education and training was therefore recommended for all the stakeholders including the parents, educational leaders and teachers on the use of developmentally appropriate formative assessment practices in a much more interactive manner to coach pupils learning.

Awoniyi (2016) explores the challenges mathematics teachers in the Senior High School face in the implementation of School- Based Assessment (SBA). A total of 110 educators comprising 100 male and 10 female mathematics teachers participated in the study. A questionnaire and an interview schedule were used to collect data for the study and frequencies and percentages were used to analyze the data. Findings revealed that mathematics teachers in Senior High Schools in the Cape Coast Metropolis do not understand SBA guidelines and do not use them so they still practice the old 'continuous assessment' scheme which seems to be directing classroom practices. In view of this, in-service training in the form of workshops and seminars could greatly contribute to upgrading their skills and introducing them to effective ways of implementing SBA.

In summary, evidences of studies conducted on formative assessment in Ghana, have shown that formative assessment is well accepted and practiced among teachers ranging from primary to tertiary schools. However, this study did not find any evidence to support the fact that all teachers have adequate level of knowledge to implement formative assessment in the classroom. Meta-analysis of the studies has shown that the implementation of formative assessment in Ghana schools especially at the lower level (first and second cycle) has undergone several metamorphosis from 1990 to 2016. The change in the nature and practice of formative assessment principally happened as a result of change of educational policy and reforms. In a little below 1990 (i.e. 1987), formative assessment took the form of Continuous Assessment (Akyeampong, 1997) and further School Based Assessment (SBA) was introduced into the curriculum in the last curriculum review in 2007 to replace what used to be called Continuous Assessment (CA) with the aim of making assessment more comprehensive i.e. to cover more applications profile dimensions (Mereku, Nabie, Appiah & Awanta, 2011). Finally, in tertiary schools in Ghana, especially Colleges of Education, formative assessment is often practiced using techniques such as diagnostic assessment, portfolio assessment, self-assessment, peer-assessment among a host of others.

4.0 Comparative view of Formative Assessment Practices Studies

Formative assessment studies conducted in Ghana, from 1990 to 2016 had different objectives. While studies conducted by Hayford (2007) and Asare (2015) sought to assess how teachers use formative assessment scores, Akyeampong (1997) prime objective was to find the nature, scope and problems of the implementation of continuous assessment in Ghana. Again, as an objective, Bordoh et al. (2013) were concerned about the cognition base of teachers in formative assessment whereas Eshun et al. (2014) concentration on how students learning could be evaluated using formative assessment techniques. In line with Eshun et al. (2014), Bekoe et al. (2014) also purposed to find formative assessment techniques used by tutors at the tertiary level. Finally, Awoniyi (2016) objective was specific to challenges that teachers' (i.e. mathematics) face in the implementation of School Based Assessment (SBA) at the second cycle level of education. This clearly shows that over two decades, studies conducted on formative assessment implementation in Ghana, have exhausted diverse aspect of classroom assessment to give as a holistic view for better practice. In a nut shell, aside Hayford (2007) and Asare (2015) all the studies had different objectives.

The second feature is related to the methodologies employed by the various studies conducted in Ghana on formative assessment practices. Hayford (2007) and Asare (2015) had the same objective to explore how teachers use formative assessment results. Both studies adopted a mixed study design purposely for triangulation, undoubtedly, this practice increases validity of their results which is highly commendable. The only limitation was the sample size of both studies. With respect to Akyeampong (1997), using case study design to explore the nature, scope and problems of continuous assessment, the method he adopted was appropriate, however, small sample size of respondents and the lack of clarity on validation procedures challenged the interpretability and trustworthiness of the study result which leaves much to be desired. The limitations identified in Akyeampong's work is quite the same for the following studies (Awoniyi, 2016; Bekoe et al. 2014; Bordoh et al. 2013; Eshun et al. 2014). This is justifiable because, all the studies cited in the parenthesis used Colleges of Education tutors as their study respondents and adopted the same methodology but different study areas. It is important to state that, evidence from the meta-analysis shows that, amidst the weakness of sample size, the purposes of the various studies matched the methodology adopted by the studies because each of the studies were exploring the fundamentals of the phenomenon. If assessment studies are to provide direction for important policy initiatives, quality methodology that provides substantive evidence cannot be underemphasized.

5.0 Conclusion

On an average formative assessment is well embraced and practiced among teachers at all levels of education in Ghana as evidenced by the Meta-analysis. However, caution must be taken in generalizing this to mean that all teachers have adequate knowledge, skills and positive attitude toward the practice of formative assessment since no empirical evidence in Ghana has shown such a relationship. Moreover, methodologies adopted by previous studies on formative assessment practices in Ghana were credible since they were all exploring various aspects of formative assessment practices. It is however, recommended that Ghana Education Service, head teachers, principals of educational institutions provide capacity building and logistics needed for sustainable practice of formative assessment in Ghana schools. Furthermore, educational researchers should shift attention to quantitative dimensions of the phenomenon, this would allow large sample size and inferential study.

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