

Formative Assessment Practices of Mathematics Tutors in Selected Colleges of Education in Ghana

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Abstract:- The study focused on assessing formative assessment practices of Mathematics tutors of twelve colleges of education in Ashanti and Bono Region in Ghana. The study adopted Convergent research design to guide the study. A sample of 56 Mathematics tutors was sampled through census study. Questionnaire, interview guide and observation checklist were used to collect data from the participants. Majority used oral test to assess students at the introduction stage, mid-way (developmental stage) and at the conclusion stage of the Mathematics lessons. It was revealed that tutors scored students exercises, presentations, individual tasks and group work during Mathematics lessons. The study therefore recommended that capacity building workshops should be organized for Mathematics tutors to help them do formative assessment well. It was concluded that majority of the respondents used oral test to assess students during lessons and this might be due to facts that other forms of assessment may be time consuming for the tutors.

Keywords: Assessment practice, Formative assessment, Convergent, tutor and Mathematics.

I. INTRODUCTION

Formative assessment techniques used by tutors to assess learners in Mathematics hardly caught the attention of the stakeholders in education (Ryan, Whitebook & Cassidy, 2014). Formative assessment techniques normally focused on evaluating what learners know or learnt as well as what they do not know. The use of assessment tools in class may include a written, oral, observation or demonstrations during teaching and learning process. Other alternative forms of assessment instruments such as rubrics, concept maps, portfolios, student journals, self-evaluation and peer or group evaluation are necessary to determine what students actually know and where they are in the learning progression (Birgin, 2011).

Classroom teachers have used various forms of assessment to monitor their student's mathematical learning and inform their future instruction, gradually, external assessments are being used by policy makers throughout the world to gauge the mathematical knowledge of a country's students. The importance given to assessment by many patrons make formative assessment a topic of importance to educators (tutors) at many levels (Herman, 2013).

In Ghana, it seems few teachers are coming out of college as Mathematics teachers and the obvious reason could be that they have difficulty with the subject (Enu, Agyman & Nkum, 2015). Those who choose teaching as a profession relatively start work at a young age and majority of these

teachers leave the profession as they grow (Akyeampong, 2013). Akyeampong explained that about 40% of students enter teacher training colleges and have the requisite qualification at the first sitting of their exams from the secondary school. It can be inferred that many do not qualify for further studies after completing secondary education and have to re-sit for some of their papers so as to meet academic entry requirements. In fact, the majority who also have good grade in mathematics also move to other tertiary institutions avoiding teaching programme so that they do not teach (Akyeampong, 2013).

Assessment in Mathematics in Ghana needs to emphasis more on formative assessment in order to help students to gain firm grounds on subject matter in various subject they study (Amoako, Asamoah & Bortey, 2019). In formative assessment, earlier problem of learners can be detected and addressed through teaching, learning and assessment (formative). Classroom assessment plays a central role in education and is entirely entwined and embedded in teachers' teaching practice (Veldhuis, 2015). Teachers can use a whole range of activities to assess their students in their classroom practice that are simply part of their teaching practice. In accordance with the ongoing solid accentuation on test results numerous instructors, educators, students, and their folks are voicing worries about the extraordinary number and sort of tests students experience during their instructive profession (Ritt, 2016).

A lot of studies conducted that have reported formative assessment practices of teachers in different subject areas and at different levels of our educational hierarchy (Amoako 2018; Andersson & Palm, 2017; Armah, 2013; Bokoe, Eshun & Bordoh, 2013; McIntosh, 2010). However, when it comes to college of education mathematics tutors' knowledge in formative assessment practices, it appears not much studies have been done on it in Ghana. Amoako, Asamoah and Bortey (2019) have observed that teachers in general have poor attitude towards formative assessment. The challenging aspect of this situation is that most of the teachers overlook their core responsibility of intermittently assessing their students in class for the determination of providing response to improve upon teaching and learning (Amoako, Asamoah & Bortey, 2019).

Research Questions

1. How do mathematics tutors evaluate students during mathematics lessons?
2. What are the scoring practices of mathematics tutors during mathematics lessons?

II. LITERATURE REVIEW

Assessing Students in Mathematics Lesson

All classroom instructors have since quite a while ago utilized different types of assessment to screen their students' mathematical learning and illuminate their future guidance (Veldhuis, Van den Heuvel -Panhuizen, Vermeulen&Eggen, 2013). Progressively, external assessment are being utilized by arrangement creators all through the world to measure the mathematical information on students (Platas, Ketterlin-Geller & Sitabkhan, 2016). Again, in contrast that information with the information on students in different nations. Therefore, external assessment regularly impacts the instructional acts of classroom instructors. The significance given to assessment by numerous partners makes assessment a subject important to teachers at numerous levels (Best, Knight, Lietz, Lockwood, Nugroho & Tobin, 2013).

It is believe that those keen for enormous scope assessment just as classroom assessment have a lot to offer each other than the teacher. Assessment plan in science instruction dependent on sound assessment standards is talked about with enormous scope and classroom assessment being separated (Darling-Hammond, Herman & Pellegrino, 2013). Again, with a conversation of how the plan standards cover. Mathematics classroom assessment give some particular instances of assessment systems that used to improve instructing and learning process. The enormous scope assessment in mathematics training on educational program, approach, guidance and classroom assessment brings difficulties that instructors face just as approaches to help them (Johnson, 2017).

Assessment has been utilized for different purposes, for example, giving student grades, national responsibility, framework checking, asset allotment inside an area, student arrangement or observing, deciding mediations, improving instructing and learning, or giving individual input to students and their folks or guardian (Newton, 2007). Instructors are some of the time assessed situated partially on how well their students perform on such assessment (Wilson & Kenney, 2003). Classroom assessment assembles data and gives criticism to help singular student learning (De Lange, 2007; National Research Council [NRC], 2001).

Black and William (2010) pointed out from a study in USA that the giving of imprints and reviewing capacity are overemphasized, while the offering of valuable guidance and the learning capacity are underemphasized (p. 84.). Educators may think that it hard to overlook the consistent need of reviewing their students' works as opposed to putting these on 'hold' and concentrating on formative practices. In addition,

prior investigations have focused on the intensity of formative assessment with input for supporting student accomplishment and inspiration to be fundamental in the learning procedure (Ozan&Kıncal, 2018). That is in the event that it gives explicit data about the work related to norms or learning movement, recommend techniques for development, as opposed to grades and social comparison (Nolen, 2011).

Formative assessment and input would then furnish the students with a chance to show signs of improvement comprehension of the hole between their present and desired performance. Some suggestions are however, made as procedures for the implementation of formative assessment. This is where teachers should consider formative as importance issue when it comes to active teaching and learning in classroom.

According Black (2010) and Hedge (2001) self and peer-assessment could be used to serve a formative function. This in their view serves as a compliments when doing formative assessment on students. These can be utilized as methodologies in the classroom to advance metacognitive thinking among students and to allow them to be increasingly engaged with their learning. These systems are turning out to be increasingly more popular known in schools, particularly for tertiary level students. First, self-assessment gives student independence, which urges the students to monitor and notice their own advancement. This point could likewise assist the educators with preparing their exercises when understanding which territories the students are battling with and simultaneously by allowing the students a chance to pick the taking in center from their own needs (Dragemark&Oscarson, 2010).

Second, peer-assessment acclaim shifts from self-assessment in the way that it as a rule requires to be told. The students are commonly progressively certifiable when they assess themselves (Farell, 2002). In situation where students try to assess themselves without any instructor, it aid their understanding of the concept very well. Black (2010), proposed that the core of the formative interaction is the dynamic inclusion of students (for example posing of inquiries during instructing and requesting clarifications on what the educator previously said while teaching) when the student produces proof and is utilized to direct further upgrades.

Again, the concept of questioning as a technique has a long history in the territory of formative assessment; be that as it may, what has changed through the span of time is a move from close-ended questions to progressively educational, open-ended formats. Black, Harrison, Lee and Marshall (2003) urge instructors not exclusively to develop more effective questions yet in addition to encourage a domain where students must think systematically and give their own solutions to their questions.

In addition, Black *et al.* (2003, p. 39) argue that formative questions must be challenge “a common

misconception, to create some conflict that requires discussion” which urges students to think about a reaction or a thought from various points. To construct more formative questions, the authors (Black *et al.* (2003) inspire classroom instructors to organize their questions taken into consideration three themes: “frame questions” around the big idea that are worth asking; increasing the “wait time” with the goal that students can think and express their reactions; and encouraging “follow - up” questions or exercises to guarantee students comprehend.

Classroom assessment techniques fluctuate the same amount of as instructional strategies for students (McMillan, 2004). Traditional assessment practices incorporate summative assessment that assess at the end of instruction at either the finish of a unit or after a set time of learning. Instructors have generally utilized target tests that measure explicit abilities utilizing impartial questions or situations.

Generally, assessment strategies can be categorized as traditional or alternative dependent on the realism and complexity of the assessment tasks and the measure of time required for the assessment (Gronlund, 2006). Conventional assessment, for example, numerous decision, true – false and coordinating things are regularly lower in realism and complexities of the tasks assessed yet require brief period to direct and score (Gronlund, 2006). Alternative assessments, for example, portfolios, perceptions, and other performance-based assessments are higher in both realism and complexities of the tasks assessed and require more opportunity to utilize and score than traditional assessments (Gronlund, 2006). There has been a development toward the utilization of more alternative assessments than conventional assessment. The contentions for alternative assessments over conventional ones depend on the thought that alternative assessments are more naturally inspiring than traditional assessments (Shepard, 2000).

In the Assessment Standards for School Mathematics, the National Council of Teachers of Mathematics (NCTM, 1995) describes assessment as the way toward social affair proof about a student’s information on, capacity to utilize, and demeanors toward, mathematics and making inferences from that proof for an assortment of purposes (p. 3). Any technique used to assess children’s mathematics learning should reflect significant objectives and goals (Lin, 2006) so the assessment results can be utilized to settle on proper instructional choices (Romagnano, 2001) and assist instructors with distinguishing approaches to improve mathematics teaching and learning (NCTM, 1989).

Without a doubt, the National Research Council, in its report *Everybody Counts* (1989), states: We should guarantee that tests measure what is of worth, not exactly what is anything but difficult to test (p. 70). In this manner, assessment ought to be a —bridge between teaching and learning, helping instructors gather proof about student

accomplishment so as to modify instruction to more readily meet student adapting needs (Wiliam, 2007, p. 1054).

Mathematics instructors have designated that how students learn (i.e., the mathematical procedures through which they learn) is as significant as what they learn (i.e., the specific mathematical content) (Kilpatrick, Swafford, & Findell, 2001; Ma, 1999; NCTM, 1989, 2000, 2006). As students engage in the procedure of doing mathematics, they make meaning of mathematics concepts for themselves, relating conceptual and practical understanding.

There has been the debate of alternative techniques in assessment. However, Herrera, Murry and Cabral, (2007) include formative and summative assessment along with other types of accurate assessment, such as performance based assessment, portfolios, self-assessment and peer-assessment, interview-based assessment, play based assessment, cooperative groups assessment, dialogue, journal and scaffold essays.

Scoring Practices of Assessment in Mathematics

Educators have utilized testing instruments to transmit to students and their parents what substance and aptitudes which are extremely significant for the students to know. In spite of the fact that the revealing would in general be as a grade and structure of assessment sent inconspicuous messages with respect to what was significant (Haldane, Bringing down and Rodriguez, 2002). Teachers have had isolated sentiments on the best strategies for assessing student learning results. Some few teachers advocate the utilization of traditional forms of assessments, for example, numerous decision tests and different types of target tests, Different instructors advocate for increasingly contemporary ways to deal with assessment, for example, portfolios, diary investigate and look into papers. Traditional types of assessment are proficient at estimating information norms and targets, particularly when there is a lot of information to be estimated. Such tests are utilized for estimating students’ information, comprehension and application, which are fundamental aptitudes that students need in order to succeed in their studies (MacMillan, 2008).

During the most recent decade alternative assessment techniques were formed and executed into instructive practice because of new disclosures and changing theories in the field of student learning result. These imaginative techniques in student assessment have been bolstered on the premise that they produce dynamic, intelligent and automatic students. These new strategies for student assessment have acquired a great deal of changes the manner in which instructors see students learning and scoring rehearses in evaluation (Elango, Jutti and Lee, 2005). Educators were encouraged to change their concentration and embrace alternative types of assessment for the scoring practices. The changing point of view was driven by the need to utilize classroom assessment that perceive the manner in which educators survey information, aptitudes and capacities

of in students' classroom. Authentic form of assessments was acquainted as a result of its potential with test complex mental capacities in the classroom (Reynolds, Livingston & Willson, 2009; Waldrip, Fishers & Dorman, 2009).

Instructors have a wide scope of classroom assessment techniques and scoring practices to utilize. These strategies give educators access to amazing assessment of students learning by scoring them through instructing and learning process. Through classroom assessment, educators gather different types of data so as to make educated, predictable and fitting decisions with respect to students learning results. Educators and school managers are the primary leaders on the types of assessment and specific assessment tasks utilized in schools (Cavanagh, Waldrip, Romanoski, Dorman & Fisher, 2005). Educators control classroom assessment conditions by picking how they assess their students much of the time. Given students input through their scoring practices upgrade powerful educating and learning in classroom. McMillan (2008) found that "Assessment of students at classroom level is basic in light of the fact that compelling dynamic is put together somewhat with respect to the capacity of educators to comprehend their students and to coordinate activities with precise assessment of their scores" (p. 5).

Boaler (2016:149) advises us that slip-ups can introduce an incredible learning opportunity which instructors can exploit by giving criticism on the activities and how this could be improved as opposed to concentrating on the student attributes. Black, Harrison, Lee, Marshall and William (2004) express that classroom exchange, activities and friend bunches are types of formative assessment which used to assess students' advancement in classroom, The valuable methods of helping students change from detached beneficiaries of the information to dynamic students is to assume liability for their own learning. Clark (2008) proposes that the utilization of an assortment of instructing and assessment strategies can animate student's accomplishment, while highlighting the significance of determining achievement standards and learning expectations in any assessment settings.

Foster (2003) articulates similarly that the incorporation of blended showing strategies and assessment by including the two activities and assignments, checking students' advancement, prompting on the advancement, giving adequate practices and offering criticism to practices in instructing mathematics can add to compelling learning. Instructing and assessment methods play a primary role in fostering good learning and contributes to students' achievement. Therefore, when instructing, educators have the duty to apply an assortment of educating and assessment strategies to improve learning results that definite high score of the students.

Scriven (1981) calls attention to that the quantities of perception by supervisor and tutor educator are generally little to convey a quality assessment during showing practice in

term of scoring. Kulik (2001) additionally included that the supervisor and coach instructor who assess pre-service educators may have inclinations that may slant their perceptions and decisions.

The utilization of perception as the primary apparatus to assess pre-service instructor during encouraging practice may be viable. In light of the adjustment in the assessment of encouraging practice is important to guarantee the educator preparing establishment to deliver a quality instructor for what's to come. Notwithstanding the best possible assessment to the student, a viable assessment should help the pre-service educator to upgrade their training abilities just as their expert improvement is concerned. The objective of the assessment techniques utilized nowadays to assess the pre-service instructors during training practice is vital just as encouraging calling is concerned.

Theoretical Perspective of Formative Assessment

The theory that guided the study is the Constructivist theory put forward by Lev Vygotsky (1896-1935). Constructivism theory is based on the belief that humans are able to construct knowledge by accepting the information they are available to. Vygotsky's theory is also known as social constructivism and explains that children mingled and advanced through cooperative activity and learning that takes place through socialization and learning. Vygotsky's idea is based on the fact that human learning is dependent on connections between a learner and an expert within the learners' zone of proximal development; a zone where learners can almost, but not quite, whole a task alone.

III. METHODOLOGY

Research Design

The research design adopted for this study was convergent design. It has been conceptualized as a triangulation approach whereby qualitative and quantitative outcomes are united to investigate issues from different edges to affirm results (Creswell & Plano Clark, 2011). This legitimizes the choice of convergent design by the researcher since that is actually what this investigation is about. In this design, two free strands of quantitative and qualitative data were collected in a single phase; merged the results of the two strands and afterward searched for combination, uniqueness, logical inconsistencies or connections between the two datasets.

Convergent parallel design was appropriate for this research because the quantitative results with qualitative findings have developed a more complete understanding of a phenomenon. The different methods were ordered equally, the strands were kept independently during analysis and then the results were mixed during explanation as recommended by Creswell and Plano Clark (2011).

Population

A population is the general group from which the researcher wishes to obtain data from to study (Frankel & Wallen, 2006). It is a group of tutors from colleges of education in Ashanti and Bono regions in Ghana and they were made up of both male and female tutors. The population for this study were all college of education tutors from the Colleges in Bono and Ashanti region in Ghana. The accessible population were all the mathematics tutors in Ashanti and Bono Region in Ghana. There were 12 Colleges in Ashanti and Bono Region which is made up of 56 tutors.

Sampling Procedure

A sample is “a smaller (but hopefully representative) collection of units from a population used to determine truths about that population” (Field, 2005). All 56 mathematics tutors in Ashanti and Bono region were sampled for the study through census sampling technique. The researcher used all the mathematics tutors in these regions because the number was small and they could easily be identified. Eight tutors were purposively selected for interview and observation based on their experience and willingness to take part in the exercise. The sample used therefore represents the characteristics of Mathematics tutors in College of Education tutors in any part of the country who had spent at least a year in the College of Education.

Data Collection Instruments

Research instruments used for the study comprises of questionnaire, interview guide and observation check list. Questionnaire was used to collect data from tutors of the selected Colleges of Education. Another instrument used for the study was observation check list. This was where the researcher observed the lessons of some Mathematics tutors. In this study, the researcher used checklist during observation stage where tutors were observed in the classroom during instructional period.

Furthermore, another instrument the study used was interview guide. This was where the researcher interviewed the tutors whose lessons were observed to confirm what was observed during their lessons. Cohen *et al* (2007) sees interviewing as “a valuable method for exploring and negotiation of meanings in a natural setting”. This was where respondents were free to express the views on issue without fear and panic. The questionnaire used were closed ended while interview and observation check list were also structured type.

Data Collection Procedure

The main purpose of this study was to assess formative assessment practices mathematics tutors of selected colleges of education in Ghana. For the purpose of confidentially, tutors responses and name of tutors who participated in the research were not noted in the instruments to allay their fears of being exposed. All instruments

(questionnaire, observation check list and interview guide) were administered to the tutors in the colleges in Ashanti and Bono region by the researcher. Eight tutors were selected for interview and observation based on their experience and willingness to take part in the exercise to see how the formative assessment was applied in their natural setting during teaching and learning process by the same tutors from Ashanti and Bono regions.

Data Processing and Analysis

The responses to the various items on the instruments (questionnaire, interview guide and observation checklist) was edited and coded to enhance easy identification and scoring before entered into the computer. The analysis of the data was done by using statistical package for social science (SPSS) software version 22 (quantitative) while qualitative was analysed in themes. These research questions were analysed using frequencies and percentages while interview guide and observation checklist were used to confirm the results from questionnaire.

Limitations of the Study

There were a number of limitations, which includes administration of the instruments. During the time of instruments were administered, colleges were in examination period and tutor could not submit completed questionnaires on time due to the examination related issues. But in all these did not affect the results of the study.

IV. RESULTS

How Mathematics tutors evaluate students during lesson

In address research question 1, the results from the questionnaire are presented in Table 1.

Table 1: Results on evaluation of students during Mathematics lessons

Statement	D	N	A
I use oral test to assess students during lesson introduction	3 (5.4%)	25 (44.6%)	28 (50.0%)
I use oral test to assess students in mid – way of the lesson	3 (5.4%)	21 (37.5%)	32 (57.2%)
I use oral test to assess students during concluding part of the lesson	5 (9.0%)	11 (19.6%)	41 (73.2%)
I use class exercise to assess my students mid-way through the lesson	7 (12.5%)	20 (35.7%)	29 (51.8%)
I use class exercise to assess my students during the concluding phase of the lesson	1 (1.8%)	3 (5.4%)	52 (92.8%)
I usually give topics to my students to do presentation during mathematics lesson	4 (7.2%)	7 (12.5%)	45 (80.3%)
I usually give group work to students during mathematics lesson	1 (1.8%)	2 (3.6%)	53 (94.7%)
I usually give students individual task during lesson	3 (5.4%)	3 (5.4%)	50 (89.3%)
I use observation in the mid-way of the lesson to assess students	20 (35.7%)	11 (19.6%)	25 (44.6%)

A cursory look at Table 1 indicates that only 3 (5.4%) of the respondents disagreed to the assertion of the use

of oral test to assess students during lesson at the introductory stage of the lesson whilst 25 (44.6%) of the respondents remained indifferent to the assertion. Again, majority (n=28, 50.0%) of the respondents indicated that they use oral test to assess students during lesson at the introductory stage.

Again, majority (n = 32, 57.2%) of the respondents indicated that they use oral test to assess students in mid – way (developmental stage) of their lessons. The results also showed 21(37.5%) of the respondents were neutral to the subject under discussion. However, only 3(5.4%) of the respondents disagreed with the use of oral test to assess students in mid – way (developmental stage) of their lessons. This clearly indicated that more than half of the respondents used oral test in mid – way of their lessons.

Analysis of results also revealed that majority (n = 41, 73.2%) of the respondents use oral test to assess students at the concluding part of the lesson while 11(19.6%) of the respondents remained neutral to the use of oral test during the concluding part of their lessons. Only 5(7.2%) of the respondents disagreed to the use of oral test to assess students during the concluding part of their lessons. On the use of class exercise to assess students during lesson, the results revealed that out of the total of 56 respondents, only 7(12.5%) disagreed with the use of class exercise in mid-way of the lesson. Majority (n = 29, 51.8%) of the respondents agreed to the used of class exercises to assess students in mid-way of the lesson while 20(35.7%) of respondents remained indifferent to the used of class exercise in mid-way of their lessons. It clearly indicates that more than half of the respondents used class exercises to assess students in mid-way of the lesson. It was also revealed that almost all (n = 52, 92.8%) of the respondents use class exercise to assess students during the concluding part of their lesson. Only 1(1.8%) of the respondents disagreed on the use of class exercise to assess students during the concluding part of the lesson while 3(5.4%) of the respondents remained neutral to that assertion.

The use of presentation as mode of assessing students during mathematics lesson had shown that more than half (n = 45, 80.3%) of the respondents gave topics to students to present on during lesson. Again, 7(12.5%) respondents remained neutral to the assertion of giving topics to students to present during lesson while only 4(7.2%) of the respondents disagreed with the issue. On the issue of giving group work to students during lesson, the results revealed that almost all (n = 53, 94.7%) respondents that were involve in the study gave group work to students during lessons. Only 1(1.8%) of the respondents do not give group work to students during lessons while 2(3.6%) respondents remained neutral to the assertion.

The use of individual task to assess students during lesson was also considered on how mathematics tutors evaluate students during lessons. The results indicated that more than half (n = 50, 89.3%) of the respondents use individual task to assess students during lessons while

3(5.4%) of the respondents remained neutral to the assertion of giving individual task to assessing students during lesson. About 5% of the respondents indicated that they do not use individual task to assess students during lessons.

Additionally, it was revealed that 20(35.7%) of the respondents disagreed to that assertion of using observation to assess students in mid – way of the lesson. Again, almost half (n = 25, 44.6%) of the respondents also agreed to the assertion of using observation to assess students in the mid – way of the lessons. About 12% of the respondents remained indifferent to the use of observation to assess students in mid – way of the lesson.

Interview Results on how tutors evaluate Students during Lesson

Eight respondents have indicated that they assess their students during lessons. The assessment strategies used include: oral questions, short quizzes, short test, class exercise, diagnostic test and group work. In terms of the oral questioning, five respondents use this approach in their formative assessment. Short test however, was indicated to be used by two of the respondents while diagnostic test was used by only one respondent from the eight respondents that were interviewed. Oral test was used by majority (5) of the respondents because it was perceived to be easier to use during lessons. Also oral test helps to involve every student during teaching and learning process. It was used by majority of the respondents who had the view that it helps to involve students during lessons. Tutor coded A002 said that: “*I used oral test to assess my students more than any other assessment technique because it is easy and quick way to find students’ understanding of the lesson taught*”. Tutor B001 also said that: “*I used oral test to assess my students since it help me to give instant feedback to students during teaching and learning process*”.

Observation Results on how Tutors Evaluate Students during Lesson

All the eight respondents observed during the study revealed that they all assess students during lessons. The methods or mode of their assessment include; question and answer, oral question, short exercise, individual work as well as group work. From the study, more than half (5) of the respondents used oral question, individual work and short exercises to assess their students during lesson. It was also revealed that two respondents used question and answer to assess their students while only one tutor used group work to assess his or her students during lesson.

On the issue of feedback given to students after responding to question in class, it was revealed that almost all respondents (6) responded good or very good after a students had given correct answer to a question. It was also revealed that only two respondents (tutors) indicated that the use of hands shake when students answer question correctly during lesson.

In general, the results from both quantitative and qualitative data (questionnaire, interview and observation) revealed that tutors involved in the study use various method such as oral questions, class exercises, group work, observation, presentations, etc to assess their students at the introduction stage, mid – way and in the conclusion stage of their lessons. While from the questionnaire, tutors indicated that they usually use group work and presentation to assess students, the observation and interview results indicated otherwise. From all the lessons observed, no presentation was observed while group work was somehow used by the tutors to assess students. From both the interview, observation and questionnaire, it was realized that most prevalent means of assessing students was the oral and written exercises as tutors indicated that the find these methods very quick and essay to assess their students' understanding of mathematics concepts.

Scoring practices of mathematics tutors during mathematics lesson

Table 2 presents the results of scoring practices enacted by these tutors in their various Colleges.

Table 2: Results on scoring practices of Mathematics tutors during lesson

Statement	D	N	A
I usually award marks to students when they respond to oral questions in class	15(26.8%)	29(51.8%)	12(21.5%)
I score students exercise during lesson	3 (5.4%)	13(23.2%)	40(71.4%)
I score students during presentation exercise	–	5 (8.9%)	49(87.5%)
I usually award marks during group work	–	2 (3.6%)	53(94.6%)
I score individual task during lesson	7 (12.5%)	6 (10.7%)	43(75.8%)
I usually observe students during lesson and award marks	28(50.0%)	11(19.6%)	17(30.4%)

Table 2 indicated that majority (n = 29, 51.8%) of the respondents remained neutral to how tutors scored their students during lessons. It was also shown that 15(26.8%) of the respondents disagreed to the assertion of awarding of marks to students when responded to oral questions during lessons while 12(21.5%) of the respondents agreed to the awarding of marks to students when responded to oral questions during lessons.

Additionally, it was revealed that majority (n = 40, 71.4%) of the respondents agreed to the assertion of scoring students exercise during lesson. However, only 3(5.4%) of the respondents disagreed to the assertion of scoring students exercise during lessons while 13(23.2%) of the respondents remained neutral to the assertion of scoring students exercise during lessons.

Analysis of the results also revealed that 49(87.5%) of the respondents agreed to the assertion of scoring students during presentation exercise. Only 5(8.9%) of the respondents were indifferent to the issue. Majority (n = 53, 94.6%) of the

respondents who were engaged during the study award marks to their students during group work. However only 2(3.6%) of the respondents remained neutral to the issue.

Table 2 revealed that majority (n = 43, 75.8%) of the respondents scored individual tasks during lessons. Again, only 6(10.7%) of the respondents were indifferent to the assertion of scoring individual task during lessons while 7(12.5%) of the respondents disagreed to the issue of scoring individual tasks during lessons.

Again, it was clearly indicated that half (n = 28, 50.0%) of the respondents disagreed to the assertion of awarding marks to students work when observed them during lessons. It was also revealed that 17(30.4%) of the respondents agreed to assertion of awarding marks to students work when observed them during lessons. However, 11(19.6%) of the respondents remained neutral to the assertion of awarding marks to students work when observed them during lessons.

Interview Results on how Tutors Scored Students

All the eight respondents interviewed during the study responded that they score students during lessons. The methods or mode of scoring students include; scoring students exercises, scoring students presentations, individual work was scored and scoring of students group work. It revealed that most tutor scored student's exercises during lessons. When tutors were asked about how they scored their student oral questions, they could not give any reasonable explanation. For example, respondents coded 'C001' indicated that '*when students answered oral question in class, I make him or her aware whether he or she is wrong or right but I don't give them any score*'.

Out of the 8 respondents who were interviewed, six respondents indicated that they scored their students exercise without awarding marks. Tutor coded D002 said that: "*I normally give exercises to students in class during lessons and I marked without scoring*". This means that tutors only marked to indicate whether the students is wrong or right.

Observation Results on how Tutors Scored Students during Lesson

On the issue of scoring practices among mathematics tutors from the Colleges that were involved in the study, it was revealed that all the eight respondents observed during the study marked their students work during lessons. Some of the respondents marked students with a prepared scoring key while other marked without scoring key during lessons. Out of the eight respondents observed during the study, only one of respondents marked students work with scoring key during lessons while the majority (7) of respondents marked students work without scoring key during lesson. It was revealed that two of the respondents from the study marked and assigned numerical score to the marked work. It was shown that five (5) of the respondents marked students work without assigning numerical value to them during lessons.

It was shown that six (6) of the respondents engaged in the study wrote comments like ‘good’ after marking students work during lessons. The comment ‘good’ serve as motivation to most students in class and it inspired them to do better in the subsequence days as far as teaching and learning is concerned. It was only two respondents who wrote ‘keep it up’ after marking students work during lessons.

The results as presented on scoring practices of Mathematics tutors, revealed that respondents from the colleges that were involved in study marked students exercises, presentations, individual tasks and group work during lessons. However, some of these works are not marked with numerical scores. As indicated in the questionnaire most tutors were not sure whether they award marks to students when they respond to oral questions in class. From the interviews and the observations, it also came to light that class exercises were also marked without assigning numerical scores as tutors only indicates whether answers were wrong or right.

V. DISCUSSION OF RESULTS

How tutors evaluate students during lesson

The results from research question one has indicated that majority of the tutors used oral question to assess their students in the introductory stage, mid – way and in the concluding stage of their lessons. The use of oral test by the respondents in most of their interactions with students in their class confirmed the study of Black (2010) that the heart of the formative interaction is the active involvement of students by asking questions and demanding responses during teaching and learning process. This is when learners call for more clarification on concept they do not understand during teaching learning process.

Tutors also use that platform to explain the concept to the learners in a different way for their understanding. These promote constructivist-learning approach where learners are given the opportunity to help them build on prior knowledge and understand on how to construct new knowledge from authentic experience. When learners are able to construct their own sentence during lesson, it help them to understand the concept very well. Again, tutors can evaluate him / herself during teaching and learning process. Thus tutors can see if learners have really understood the lesson.

Oral questioning as formative assessment is essential tool for evaluating lesson because it is the easy and fastest way to assess learning outcome of the learners. The results has confirmed the work of Black, Harrison, Lee and Marshall (2003) which states that teachers must not encourage 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. Much opportunities must be given to learners in the classroom to express themselves orally during teaching and learning process. When tutors make their lesson more learner centered,

students feel to be part of the class and at the end it promotes learning. Opportunity given to the learners to express themselves orally in the class during lessons is another way of developing their speaking skills indirectly and it aids in their creativity, reading and writing skills as well as their listening skills.

The use of oral question in class as means of assessing learners always make students critical thinkers in the teaching and learning process. This makes students to pay attention in class since they can be called to answer question at any time. The finding is also in accordance with Scriven and Paul (2003) who saw critical thinking as an intellectually disciplined process in which students actively and skillfully conceptualize, apply, synthesize and evaluate information generated by observation, experience, reflection, reasoning and communication. This implies that student who really pay attention in class are able to analyse issue very well and apply it in different learning environment and it’s enhance his or her understanding of concepts. Students who carefully pay attention in class, it help him / her to answer questions during lessons and are able to conceptualize, synthesize and apply information obtained in the new state. These students are able to answer such questions very well during end semester examination because they were able answered it oral in class and they could also transfer that idea to final examination.

The implication of the finding is that tutors using oral test to assessing students during lesson at the various stages of instruction suggest that students would perform better in their end of semester examination. Again, their assessment results will also be high to improve their final grade in order to assist these students for further study.

Scoring Practices of Tutors during Lesson

The results from research question two has indicated that majority of tutors from the colleges that were involved in study scored students exercise, presentations, individual task and group work during lessons. The scoring of students work by the tutors during lesson can be done in different ways and this confirms the work of Clark (2008) who suggests that the use of a variety of teaching and assessment methods can stimulate learner’s achievement, while pointing to the importance of specifying success criteria and learning intentions in any assessment settings.

The use of different scoring practices (assessment tools) help the tutors to really know the strength and weakness of each student as well as formative assessment practices is concerned. This tell the tutors the kind of assessment they can conduct in order to inspire the learners in the learning process. The assessment area where the learners perform best tells the tutor where the learner strength can be identified.

Tutors who scored individual students task during lesson help them to identify how each student’s is progressing during the lesson and particular attention could be given to individual student with learning challenge. This is supported

by the work of McMillan (2008) who found that assessing students in classroom level is very critical because effective decision making is based to some extent on the ability of teachers to understand their students. Tutors can find appropriate solution to students with learning difficulties during instructional period and it can be done in the form of addition tuition for such students or whole class teaching.

From the study it was revealed that majority of the tutors scored students in group work and thus one way of making students responsible during lesson. This affirm to the early work Black, Harrison, Lee, Marshall and William (2004) who find that classroom dialogue, exercises and peer groups are forms of formative assessment which used to assess students' progress in classroom. Thus the useful ways of helping students change from passive recipients of the knowledge to active learners during lessons. When students are taught of specific rules during lessons it makes them responsible in the lesson and it really make them active participant of the lesson. Therefore scoring students during group work is important scoring practices in formative assessment practices in the Colleges of Education as far as teaching and learning is concerned.

The study revealed that tutors scored students during presentations in class. This finding confirms to Foster's work (2003) that the integration of mixed teaching methods and assessments by tutors involving both exercises and assignments (presentations), monitoring students' progress, advising on the progress, giving sufficient practices and giving feedback to practices in teaching mathematics can contribute to effective learning. Teaching, learning and assessment are methods that play a primary role in fostering good learning and contributes to students' achievement. Therefore, when teaching, teachers have the responsibility to apply a variety of teaching and assessment methods it improve learning outcomes that sure high score of the learners.

VI. CONCLUSION AND RECOMMENDATIONS

The study concludes that formative assessment practices among Mathematics tutors of Colleges of Education in Ghana was found to be inappropriate. This is because, majority of the respondents used oral test to assess students during lessons and this may due to facts that other forms of assessment may be time consuming for the tutors. It is therefore recommended that teacher educators from various Colleges of Education that were involved in the study should use other forms of assessment regularly. It is recommended that tutors from the colleges that were involved in the study must assigned numerical scores to student's work whether being class work or responding to oral questions.

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