Assessment, Student Learning and Classroom Practice: A Review

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Abstract
Assessment in its various forms has always been a central part of educational practice. Evidence gleaned from the empirical literature suggests that assessment, especially high stakes external assessment has effect on how teachers teach and consequently, how students learn. Through focus group discussions, this paper draws upon the experiences of 12 tutors and 18 student-teachers in 3 colleges of education in Ghana. The findings show that although teachers are expected to nurture evaluative thinking skills in their pupils/students this is not reflected in the assessment and teaching and learning practices of student-teachers. This paper argues that for teachers to be effective in promoting the desired goals of the basic school curriculum, greater recognition must be accorded to the influence of assessment on teaching and learning, the understanding of which could arguably play an important role in introducing changes that will promote the cognitive processes and thinking skills desired in our schools and classrooms.
Keywords: Assessment, teaching and learning, teacher training, classroom practice

1.   Introduction

Assessment is about learning. Traditionally assessment is intended to find out and report on what has been learnt thus its relation with classroom activities. Assessment is integral to teaching and learning activities in school and mediates the interaction between teachers and students in the classroom. Assessment can be defined as all activities that teachers and students undertake to get information that can be used to alter teaching and learning**.** This includes teacher observation and analysis of student work (homework, tests, essays, reports, practical procedures and classroom discussion of issues). All these are concerned with sampling what a student may or may not know. Assessment is also used in 'selecting, controlling or motivating students, and to satisfy public expectations as to standards and accountability' (Biggs, 2003; p.141). Consequently, assessment has been categorised as formative or summative depending on how the results are used (Dunn & Mulvenon, 2009). Formative assessment is embedded in the teaching and learning process and provides feedback to the teacher in the course of teaching to enable him or her judge how well students are learning. It also provides information on the effectiveness of teaching which will help to determine an appropriate remedial action where necessary. For this reason, it is appropriately referred to as assessment *for* learning. Summative assessment takes place at the end of a course or programme to determine the level of students' achievement or how well a programme has performed. It often takes the form of external examinations or tests and is referred to as assessment *of* learning. Students spend a relatively large part of their time in school practising the kind of knowledge and skills demanded in assessment and this is what they acquire.

1.1 Formative and Summative Assessment

Formative assessment takes place when teachers and students respond to students' work, making judgements about what is good learning with feedback [information about how the student's present state of learning and performance (actual outcome) relates to goals and standards (desired outcome)] from this dialogue being used to improve the learning experience of the student (Nicol, 2009; Nicol & Macfarlane-Dick, 2006). Formative feedback is therefore exploratory, provisional and aims at prompting further engagement from the students as part of an on-going dialogue between and amongst students and teachers (Pryor & Croussand, 2008; Attwood, 2009)**.** This implies that the feedback process in the learning cycle commences with the production and submission of student work, followed by teacher assessment of the work and feedback provision on it. Consequently, formative assessment and feedback involves a much more dialogic form of language, often moved away from the traditional classroom interaction where the teacher initiates, students respond and teacher gives feedback (IRF) to one which more approximates conversation (Pryor & Croussand, 2008).

The teacher and the student are often in a hierarchical relationship that inhibits collaboration in their learning. The opportunity for dialogue that formative feedback promotes breaks that linear transfer of knowledge associated with the hierarchical relationship between the teacher and student and engenders deep learning. Feedback as dialogue means that the student not only receives initial feedback information, but also has the opportunity to engage the teacher in discussion about that feedback (Laurillard, 2002). As Nicol & Macfarlane-Dick (2006) point out, good feedback practice is not only about providing accessible and usable information that helps students to improve their learning. It is also about providing good information to teachers:

The act of assessing has an effect on the assessor as well as the student.

Assessors learn about the extent to which they [students] have developed

expertise and can tailor their teaching accordingly (Yorke, 2003, p. 482).

The idea that dialogue is fundamental to successful learning and teaching is well documented in the educational literature and many researchers have acknowledged that formative assessment can play a central role in shaping and improving the effectiveness of the teaching learning experience (Covic & Jones, 2008; Bloxham & Boyd, 2007).

Summative assessment on the other hand, creates tests, marks, academic reports and qualifications which are socially highly valued (Biggs, 2003). Summative assessment events are usually designed to help make a (final) judgement about a learner's achievement on a programme and potential subsequent achievement; certify achievement and award a qualification; help make decisions about entry to other learning programmes; provide information that will help others make selection decisions and provide formal evidence of a learner's competence (Awoniyi & Fletcher, 2014). Education is therefore largely controlled by assessment, especially summative assessment as a result of the ways in which the results are used. Where the stakes attached to the assessment are high, they influence "what is taught, how it is taught, what is learned and how it is learned" (Stobart, 2008; Luxia, 2007; Paige, 2006), as teachers and students will align teaching and learning to their form and content to meet its demands. DeCesare (2002) describes high stakes assessments as tests designed to measure not only the achievement of students, but also of teachers and schools. The literature on the discourse on assessment shows consensus among both critics and proponents about the controlling influence of high-stakes external assessment on teaching and learning and its potential to change the way teachers teach in spite of any official policy to the contrary. Concerns about the quality of education have to do with teaching and learning, but a lot more to do with the nature of assessment, especially high-stakes external assessment. This supports the argument that if teaching to the test can have effects on learning, it is important to ensure that the intended knowledge and skills are what the tests direct students to practise as they prepare to take the tests. In that case, teaching to the test will produce the desired effect on students' learning (Ghana National Association of Teachers (GNAT, 2006, p. iv).

2. Context

Educational reforms in Ghana aimed at addressing the perceived falling standard or quality of education considered assessment as a major factor affecting quality. The end of cycle external examinations was believed to inhibit quality educational delivery. Consequently, reforms in 1987, involved the restructuring of the content and the assessment regime. Three external assessments namely, the Common Entrance Examination (CEE) written after the sixth year of schooling, the General Certificate of Education Ordinary level examination (GCE O' level) written after the eleventh year of schooling and the General Certificate of Education Advanced level examination (GCE A' Level) written after the thirteenth year of schooling were replaced with the end-of-cycle Basic Education Certificate Examination (BECE) after the ninth year of schooling and West African Secondary School Certificate Examination (WASSCE) after the twelfth year of schooling for junior and senior high schools respectively. This restructuring reduced summative assessment levels in pre tertiary education and created room for more formative assessment in the curriculum in the form of continuous assessment to improve students' learning experience. However, the abysmal performance of students in the first BECE in 1990 generated an on-going public debate about the quality of basic education in the public school system which resulted in another educational reform in 2007. This reform sensed the need for a shift enabling a move from a notion of learning as primarily a process of storing and reproducing knowledge, which stakeholders blamed on the nature of external assessment (GNAT, 2006), to the nurturing of higher order thinking and problem solving skills that will enable students to apply knowledge. Consequently, the concept 'profile dimensions' was introduced in the curriculum of pre tertiary education (Ministry of Education, 2004).

The concept 'profile dimensions' presented as a taxonomy of learning (Bloom *et al.*, 1971), has been made central to the teaching syllabus of all subjects and is the prime focus of teaching and assessment from basic school (primary and junior secondary school) to secondary school. The dimension weighting for knowledge and understanding is 40%, as against 60% weighting for the higher levels of application, analysis, synthesis and evaluation, summarily referred to as Use of knowledge or Application of knowledge. It requires teachers to promote evaluative thinking in their classrooms. However, the revised teaching syllabi for basic and senior secondary schools published in 2012 admonished teachers for not promoting evaluative thinking in their classrooms as expected:

It has been realized unfortunately that schools still teach the low ability
thinking skills of knowledge and understanding and ignore the higher
ability thinking skills. Instruction in most cases has tended to stress
knowledge acquisition to the detriment of the higher quality behaviours
such as application, analysis etc. The persistence of this situation in the
school system means that students will only do well on recall items and
questions and perform poorly on questions that require higher ability

thinking skills. For there to be a change in the quality of people who go
through the school system students should be encouraged to apply their
knowledge, develop analytical skills, develop plans, generate new and
creative ideas and solutions, and use their knowledge in a variety of ways
.... (subject focus is addressed from here). For example, solve
mathematical problems (Ministry of Education, 2012, p. xvi), or deal with
learning problems and issues in their lives (Ministry of Education, 2012a, p.vii).

Subsequent revised syllabi emphasise the importance of developing evaluative thinking and remind teachers to promote evaluative thinking in their classrooms. For teachers to foster evaluative thinking in their pupils/students, they must have developed and practiced the knowledge and skills involved while in training. This begs the question whether teachers in training are being prepared to meet this curriculum demand in their classrooms. Teachers can only give what they have. Since assessment mediates the interaction between teachers and students in the classroom, and the kind of knowledge and skills demanded in assessments are what students spend a large part of their time in school practising and therefore learn and acquire, the purpose of this study is to examine the assessment practices in colleges of education to find out whether student- teachers are being adequately prepared to meet the demands of profile dimensions in the basic school curriculum. Research questions that direct this study are:

What is the nature of assessment practices in colleges of education?

How is formative feedback used to direct evaluative thinking?

To what extent do summative assessment instruments foster evaluative thinking in student teachers?

3. Method

A case study of colleges of education was undertaken. This involved focus group interviews with tutors and students and a qualitative analysis of the end of semester examination questions. The objective of the interviews with tutors was to get them to talk freely about their assessment practices. Focus group interviews with students were to give them a voice and an opportunity to share their ideas and experiences on assessment (Cousin, 2009). The population of the study was the 38 public colleges of education in Ghana. The 38 public colleges are made up of 8 female colleges, one male college and 29 mixed colleges. The male college was purposively sampled and one female college and a mixed college were randomly selected for the study using the lottery method. Four tutors, including the assessment officer of each college sampled participated in the study. In all cases contact with participants was facilitated by the Assessment Officer of the college. Six second year students made up of three men and three women (mostly course representatives and prefects) were purposively selected from each college to participate in focus group interviews. The second year cohort was selected because they have had one year of college experience. Moreover, the first year students were new to the college experience and the third year students were out practising teaching in basic schools. A total of 12 tutors and 18 students participated in interviews. The interviews lasted between 30 and 45 minutes. The interviews were guided by semi-structured interview schedules. They were structured to the extent that each focus group of tutors and students was asked the same questions, and interviewed under the same conditions. They were semi-structured to the extent that the researcher was free to probe and explore in depth participants' responses to each of the questions.

3.1. Analysis of Data and Interpretation

Data analysis included repeated review of all interview transcripts. The constant comparative method was employed (Glaser & Strauss, 1967). Bloom's *et al.'s* (1971) taxonomy of educational objectives was used to classify the cognitive demands of the items in the end of semester examination questions into knowledge and comprehension on one hand, and analysis, application, synthesis and evaluation on the other hand. The findings are discussed in line with the research questions.

4. Findings and Discussion

4.1. What is the nature of assessment practices in colleges of education?

Tutors and students in different colleges described similar assessment routines which showed that individual tutors organised various formative assessment tests, and the college organised a mid-semester test or mock examination:

"We have two quizzes per semester ... class exercises ... assignments ... presentations ... mid-semester or mock examinations." (tutor and student focus groups).

From these descriptions it is clear that students are taken through a potpourri of assessments during the semester. The notion that apart from the institution-wide mid-semester examinations, tutors have the prerogative to determine what, how and when to assess students within the semester resonated in interviews:

"we may give different assessments at different times but by the end of the semester all students experience the same assessments". (Focus groups, tutors).

Tutors agreed they put the different types of assessment together as formative/continuous assessment which accounts for 40% of students' marks. This implies that tutors have the opportunity to use feedback from formative assessment to improve their students' learning experiences (Nicol, 2009; Nicol & Macfarlane-Dick, 2006). The critical issue here therefore is the extent to which tutors engage student- teachers in feedback dialogue that will enable them to practise the evaluative thinking they are required to foster in their classrooms upon graduation. The shift in focus on nurturing evaluative thinking in pupils/students has profound implications for the way in which teachers support learning and organise assessments. I recognise therefore with Black & Wiliam's (2006) description of the demanding nature of such renegotiation of teacher and student relations in the context of formative assessment and note how teachers' own previous learning experiences count a great deal more than policy directives.

4.2. How is formative feedback on assessment used to direct evaluative thinking?
The use of "formative feedback to draw students' attention to their strengths and weaknesses" resonated strongly in interviews with both tutors and students. This suggests that tutors remain very much in control with feedback focusing on correcting mistakes rather than prompting further engagement on work done:

> "After they (tutors) mark our work and return our books, they discuss our
>   work with us and point out our strengths and weaknesses" (students, all
>   focus groups).

Feedback that supports student learning engages both students and teachers in a dialogue on students' work (Attwood, 2009; Pryor & Crossouard, 2008). However, what both tutors and students describe does not suggest the presence of feedback dialogue. It appears that feedback is still generally conceptualised as a transmission process, controlled by and seen as the responsibility of teachers who tell students about what is right and what is wrong in their academic work, about its strengths and weaknesses. Feedback as a transmission process involving 'telling' ignores the active role the student must play in constructing meaning from feedback messages, and developing critical thinking and evaluative skills in the process (Covic & Jones, 2008). If feedback from formative assessment is exclusively in the hands of tutors, then it is difficult to see how student-teachers can develop the critical thinking skills that will empower them to foster evaluative thinking of their pupils/students in the classroom. An agricultural science student described how his tutors get them to relate issues with what goes on in the environment and encourage them to think critically. From his description, the point of departure is what one might describe as a kind of scaffolding whereby the teacher plays a crucial role in enabling learners to do with help that which they would not have been able to do alone (Pryor & Crossouard, 2008).

Some tutors noted how: "students' fail to engage in discussions about their work when we try to get them to talk". They however corroborated students' views that:

> "we don't get our assignments on time ... sometimes after other topics
>   have been covered ..."

What tutors identified as a weakness in their students is indeed a failure on their part to create and make the most of opportunities for formative feedback. When feedback on students' work is delayed, it loses its relevance. Feedback provided has to be useful to the recipient and feedback is only useful when provided quickly enough and acted upon to improve students' work and learning (Covic & Jones, 2008; Nicol & Macfarlane-Dick, 2006). This implies that the ability of the student to take on board the advice offered by formative feedback from assessment is crucial to feedback having an impact on the ability of the student to improve.

Tutors described dialogic feedback on formative assessment as challenging due to student staff ratios and workload: "so we grade students and discuss their performance in general". This practice undermines the process of learning that is dependent upon feedback which serves to inform and guide students during their studies. Feedback in the form of grades is noted to encourage students to focus on performance goals (passing the test) rather than learning goals (understanding the subject). This leads students to compare themselves against others rather than focus on the difficulties in the task and on making efforts to improve (Attwood, 2009). Generally, tutors lamented about the structure of the programme:

> "Everything is exams, exams, exams ... we have content to cover and
>   students are learning to pass their exams".

Tutors seem to feel pressed for time to address all that they want to in a course. The compulsion to cover content is noted as one of the greatest barriers to effective teaching. Considering the wide ranging influence of high stakes summative external assessment on classroom practise and the entire education system (see Stobart, 2008; Luxia, 2007; Paige, 2006), it is important to take a look at the nature of the instruments in the end of semester examination that are at the centre of this influence.

4.3. To what extent do summative assessment instruments foster evaluative thinking in student-teachers?
An analysis of questions presented in the 2014 end of semester examination showed that multiple type test and questions that demand true or false answers dominate objective questions (80%). Questions that required short answers accounted for only19% as shown in Table 1.

Table 1: Types of examination questions - Section 'A' (objectives test)

	Number of items	Average	Percentage
Multiple type test	702	17.1	65.3
True/False	157	3.8	14.5
Matching type test	14	0.3	1.1
Short Answer	206	5	19.1
Total	1079	26.2	100

The essay component of the examination questions was not different. Based on Bloom et al.'s (1971) taxonomy of learning, the findings showed that test questions on essays mostly demanded knowledge and comprehension (80%) at the expense of the desired learning objectives of analysis, application and synthesis (20%) in basic schools. Questions that demand evaluative thinking were absent as shown in Table 2.

Table 2: Types of Examination Questions - Section 'B' (Essay Test)

Levels of test items	Number of items	Average	Percentage
Knowledge	182	4.3	38.4
Comprehension	195	4.6	41.1
Application	51	1.2	10.7
Analysis	41	1	8.9
Synthesis	5	0.1	0.9
Evaluation	-	-	-
Total	474	11.2	100

Essays are the main way to assess knowledge of a subject area. With the appropriate use of such terms as 'discuss', 'evaluate' and 'critically analyse', an essay can be used to encourage the development of language skills and more critical understanding of issues (Covic & Jones, 2008). If teachers are being urged to foster evaluative thinking in their classrooms, they will have to learn to evaluate issues in their training. The point of intervention that would possibly enhance the quality of teachers' classroom practice may involve taking a critical look at the teacher training curriculum, the teaching methods used, and above all, how assessment can be used to help develop the kind of learning and the higher order thinking skills and processes required in the basic school curriculum.

5.   Conclusion and Recommendations
The conclusion drawn from the findings of this study suggest that the transition in the goal of the basic school curriculum from a mainly lower level recall cognitive domain to a much higher thinking and reasoning level is not reflected in the teaching, learning and assessment of student- teachers. If formative assessment practices fail to elicit the 'multi-party' dialogue that would encourage evaluative feedback on student-teachers' work and summative assessment does not demand evaluation of issues, student- teachers will not be equipped with the knowledge and skills they require to foster evaluative thinking in their schools and classrooms. The gap between teacher education and curriculum expectation in basic schools is a barrier to understanding and facilitating the sort of engagement that will nurture the evaluative thinking required. Consequently, the practice of teaching will not change and the cognitive processes that develop thinking and problem solving are unlikely to be practised, or are little understood. The gap can however be controlled if assessment, teaching and learning are brought into better alignment with the requirement of the basic school curriculum.

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