

# Competency-Based Assessment and Reporting in Ghanaian Polytechnics: A Critique of the Prevailing Perceptions

Dr. Peter Boahin

National Board for Professional and Technician Examinations (NABPTEX), P.O. Box SD 109, Stadium- Accra, Ghana

## Abstract

Since the introduction of competency-based training (CBT) in Ghanaian vocational education and training (VET) systems in the early 2006, one area that presents the most contentious issues in its implementation is assessment and reporting of learning outcomes. The assumption and principles that underpin competency-based assessment (CBA) define only one level of performance criterion that can either be demonstrated as (competent) or not (Not yet Competent). This reporting technique in CBA has generated lot criticisms in the literature among employers, teachers, students, practitioners and other relevant stakeholders in Ghanaian polytechnics and the VET in general. This study examines the debate on grading and non-grading of CBA with related assumptions and principles. It further discusses alternative ways of reporting merit or excellence, criteria for creating levels of performance and grading approaches in criterion referenced judgments. Finally, the paper proposes a set of principles grounded in theory and consistent with international literature on competence assessment and reporting to inform future policy formulation in Ghanaian VET.

**Keywords:** competency-based assessment, performance, grading, criteria

## 1. Introduction

In recent times, there has been an increasing pressure for change in the teaching and learning process in the Vocational Education and Training (VET) system in Ghana mainly due to theory-based curricula with little or no practical training, mismatch of training activities and skill needs of industry leading to high rate of unemployment particularly among the youth. One major teaching and learning innovation adopted in the VET systems that is believed to have the capacity to reduce the gap between training and the labour market, equip the youth with required competencies and reduce unemployment rate is competency-based training.

## 2. Competency-based training

Competency-based training (CBT) is an approach to training that places emphasis on what a person can actually do as a result of training (ANTA, 2003, Sturgis, 2014). It is variously referred to as proficiency-based, performance-based, standard-based or mastery-based education.

Competency comprises the following four dimensions:

- Task skills - the capacity to perform tasks to the required standards
- Task management skills – ability to plan and integrate a number of different tasks
- Contingency management skills – ability to respond to irregularities, breakdowns and other unanticipated occurrences, and
- Job/role environment skills - capacity to deal with the responsibilities and expectations of the work environment, including working with others (Dept of Training & Workforce Devpt, 2013).

### 2.1 Features of CBT

- Education and training programmes are designed around benchmarks, known as industry competency standards, which are established from industry. These standards clearly define knowledge, skills and attitudes and other critical requirements in the workplace.
- Training programmes are designed on a modular structure basis to provide flexibility and tailored to meet individual, local and enterprise needs
- Assessment focuses on relevant knowledge, skills and attitudes of a professional task in a real, authentic and simulated environment.
- Assessment of competence measures learner's performance against an externally defined criterion, i.e. Criterion-referenced (CR) and not relative to other people, i.e. Norm-referenced (NR) framework (William & Bateman, 2003).
- Assessment results are not graded but reported in a binary system of 'competent'/'Not yet competent' 'Proficient'/'Not yet Proficient' 'Pass'/'Fail', 'Achieved'/'Not yet achieved' 'Can do'/'Cannot do'(Sturgis, 2014).
- Reassessment is an integral part of CBT because students learn at different rates and therefore, requires multiple chances to ensure mastery of a task before progressing to a more advanced level for which the initial task is a pre-requisite.

## 2.2 Competency-based assessment

Competency-based assessment (CBA) involves making judgment about the extent to which the performance of students meets particular standards. Assessors report what students know and can do relative to industry standards, benchmarks or learning targets progress toward mastery of competencies, instead of accumulating grade points. The assumption and principles that underpin CBA is that any particular national competency standard defines only one level of performance criterion that can either be demonstrated 'competent' or not 'Not yet Competent' (Allais, 2003).

Since the implementation of CBT in Ghana in 2006, the polytechnics have been grading and certifying students on the basis of the dichotomous framework of reporting amidst confusion, agitations and diverse opinions from teachers, students and industry. Rarely is any rationale for this grading system defended in any way by the Council for Technical and Vocational Educational and Training (COTVET) or the National Board for Professional and Technician Examinations (NABPTEX), the policy-making and awarding body respectively, other than a simple explanation that CBT focuses only on demonstration of competence and not the process of acquisition (Gillis & Griffin, 2005). Apart from this argument being non sequitur, it fails to provide any basis for ignoring the nature of learning involved or the interpretation frameworks for the binary reporting system.

The reaction against ungraded means of reporting achievement and the failure of the existing approaches to clearly define levels of performances remains the most contentious issues among researchers, policy makers and practitioners in the implementation of CBA in Ghana. Debate has been raging on as to whether the principles which underpin CBA imply that;

- only one standard of performance should apply, or
- whether graded assessment is possible within CBA system, or
- whether levels of merit or grades have a place in CR assessment.

As employers and higher education institutions (HEIs) struggle to keep pace with the ever increasing number of applicants for employment opportunities and higher qualification respectively, CBT grading and reporting in Ghana need to be reviewed and re-evaluated to reflect international trends and practices in the VET sector

## 3. Weaknesses in the traditional grading system in relation to CBT

The traditional grading system is characterised by a numerical scale with corresponding letter grades (A-F). The 100-point scale is the standard practice in the classroom. Cut-off points such as an 'A' is 90-100, 'B' is 80-89, 'C' is 70 -79 and so on, are used to differentiate and rank students, separating 'A' students from 'B' students with as low as one point difference. Teachers tend to assign different scores to students at the same level of work due to consideration to factors such as deducting marks from late/failure to do homework/assignment, attendance, class participation, extra marks/credit, classroom behavior, ability to buy the lecturer's pamphlet, bonus marks, etc.) other than academic achievement or skill acquisition. In NR classroom, the risks is high in that many students, including those with 'C's, 'D's and 'E's will be passed on to the next, more difficult unit or level for which they have not been adequately prepared for or undertaken reassessment. The result is grade inflation, resulting in students receiving 'A's and 'B's even if they are actually performing at several levels below their grade. The A-F grading in NR classroom, therefore, is too subjective, abstract, and arbitrary to act as a meaningful proxy of academic achievement (Sturgis, 2014). Students with 'A's & 'B's will be promoted or passed with gaps in their knowledge and skills to new or higher levels, thereby expecting the next teacher to help them fill in the gaps, which does not often happen, creating a flawed foundation in the learners' education.

The traditional grading system therefore, undermines learning because it allows students to slip and stumble over gaps in their knowledge and skills. Weaknesses from this grading system are as follows;

- It is not a reliable indicator of achievement, misleading parents and other relevant stakeholders into believing that their children are making progress towards college/ university and career readiness
- It allows students to advance without fully mastering requisite level of skills and knowledge
- It does not allow opportunity or incentive to improve performance or learn more after grades are issued
- No mechanism for recording / monitoring student progress relative to learning goals
- Students earning low grades but passing accumulate credits without substantive learning
- For students who fail classes, the resultant credit deficiencies increase the likelihood that they will leave school without a diploma/degree
- A low grade point average (GPA) threatens their eligibility for college and financial scholarships
- Students' official academic transcripts permanently record their failures and undermine their future life choices (Sturgis, 2014).

## 4. Grading defined

Although the term 'grading' has no precise definition, Thompson, Mathers and Quirk (1996) define 'grading' as the practice of assessing and reporting varying levels of performance in competency-based VET to recognise

merit or excellence' (p.3). Rumsey (1997) defines graded assessment as an approach that provides grades for combination of demonstrated knowledge and performance. Other terms to describe grading include performance levels, (Smith 2000), levels of performance (Thompson et al, 1996), levels of competency (Dickson & Bloch, 1996), and levels of achievement (Strong, 1995). Graded assessment therefore encompasses all assessment practices in the VET sector where differentiated levels of performance are recognised and reported (Schofield & McDonald, 2004, Williams & Bateman, 2003).

#### *4.1 Arguments for non-grading in CBA*

The argument for and against graded assessment in the literature presents two main issues. Firstly, whether grading is compatible with the philosophy and underlying principles of CBA; secondly, discussion about perceived advantages and disadvantages of grading for a range of stakeholders.

Proponents to the use non-grading in CBA are of the view that graded assessment is not consistent with the principle of CBA (Thompson et al, 1996). They argue that any particular national competency standards define only one level of performance criterion that can be either demonstrated as 'competent' or not 'not yet competent'. Moreover, CBA process is based on CR other than NR framework which does not provide varying levels of performance; therefore, the results cannot be graded. Others argue that grading rather encourages competitive learning environment rather than cooperative learning, causes feeling of failure especially those who receive low grades, concentrates teaching efforts on the more able students and compares individual achievement (NR) rather than meeting identified standards (CR) (William & Bateman, 2003).

Schofield & McDonald (2004) are of the view that grading in CBT may be seen as NR form of assessment, a situation that may devalue or equate 'competent with 'average', ' pass', or 'bare minimum' rather than an attainment of a pre-determined standards.

#### *4.2 Arguments against non-grading in CBA*

Critics who oppose non-grading argue that graded reporting potentially provides comprehensive information than the binary reporting techniques, improves the validity and consistency of assessment as assessors are able to consider evidence of performance in greater detail in relation to set criteria (Reddan, 2012). A meritorious grading system shows standards beyond acceptable or not acceptable (competent/ not yet competent), stratifies students according to their levels of achievement, including exemplary performances. 'Competent' / 'not yet competent' promotes mediocrity in the learning process (Smith 2000). If students continually aim at minimal standards of performance, the teaching learning environment might lack the ingredients to inspire excellence (Miller, 2009 cited in Reddan, 2012)

Graded assessment is also used as marketing tool particularly in some private providers because high grades for a significant number of students makes the provider 'look good' (Rumsey, 1995, Smith 2000). Other advantages for graded assessment are to predict success in further study (Strong 1995), an added value to competency standards where these standards provide a starting point for improvement (Dickson & Bloch, 1996), for selection paradigm (Griffin et al, 2001).

A study by Laska & Guarez (1992) cited in Reddan, (2012) on students whose grades are averaged into cumulative GPA and those who take courses that use a pass/fail found that the former category had an increase of 11.4% above the average in the mean semester GPA than a pass/fail reporting basis.

In his analysis of a stakeholder groups consisting of students, teachers and employers, Thompson et al, (1996) reveal that grading improves the level of confidence in the assessment process, provides information about the quality of learning achieved, capacity to motivate and reward, provision of feedback on learning outcomes and for promotion and recognition for entry into other educational programmes.

### **5. Ghanaian perspectives on the binary reporting in CBA**

The rapid growth and demand for higher education with the introduction of courses and programmes to meet the changing needs of the labour market has brought a lot of challenges for applicants with ungraded results seeking further education. Reactions to the use of 'competent' / 'not yet competent' results from CBT programmes seem to disadvantage VET applicants and has the potential effect of discriminating against VET students, and further worsens the already poor public perception about VET students as a depository of students with weak academic abilities.

The non-grading and its associated reporting techniques in CBA have generated some lot criticisms among employers, teachers, students, Conference of Rectors of Polytechnics (CORP) and other relevant stakeholders in Ghanaian polytechnics and the VET in general. The critics argue that the binary reporting technique of 'Competent' / 'Not yet Competent' does not differentiate learners, usually for the purpose of selection and employment. In Ghana, the dichotomous framework of 'competent' / 'not yet competent' reporting in CBA tends to disadvantage a number of VET applicants seeking employment or further education partly due to difficulties in;

- a) transferring credits between institutions and programmes,
- b) selection procedures for post graduate programmes,
- c) converting VET results into scores comparable with grades from Senior High School(SHS) leavers,
- d) comparing 'competent' in ungraded results with 'pass' results in graded subjects, and
- e) interpreting proficiency-based transcripts from VET applicants since VET transcripts do not detail unsuccessful attempts to complete subjects/modules contrary to the practices in universities and HEIs
- f) accepting ungraded results from VET applicants.

As a result, NABPTEX, which is the main Examining Body for Polytechnic education in Ghana, has been inundated with letters from industries, organisations and HEIs seeking clarification, interpretation of proficiency-based transcripts, authentication, attestation and equivalences of ungraded results with other graded results, revision of CBT grading and reporting levels of performance

Although most HEIs regard ungraded assessment and reporting as a challenge to a number of VET applicants, they do not see it to be their responsibility to apply further resources or seeking additional information from individual applicants. Working within tight time-frames, Polytechnics in Ghana would prefer guidelines from COTVET or NABPTEX to provide grading levels for all modules to improve reporting of achievement in CBA.

Given these realities, this study attempts to investigate existing policies and practices of grading and reporting in CBA in Ghanaian polytechnics and VET in general, examines the validity of the current practices; suggests a more differentiated approach to reporting assessment outcomes and provide inputs to inform future policy formulation in Ghanaian VET. It also seeks to facilitate mobility of graduates from VET sector wishing to enter higher education courses and employment on the basis of VET qualification and related issues arisen out of the introduction of ungraded assessment in CBT.

## 6. Significance of the study

As relevant stakeholders continue to agitate for grading levels in CBT system in the polytechnics, any move or study towards the review of the grading system in VET is appropriate and timely. The aim of the research is to examine the assessment and reporting levels of performance in competency-based training (VET) in Ghanaian polytechnics and provide input to inform future policy formulation at pre-tertiary and tertiary levels. The outcome of this study, with its implication for policy and practice in grading CBA will enhance consistency and validity of grading practices and hence facilitate mobility of VET graduates in HEIs and the labour market.

## 7. Methodology

The main aim of the study was to examine the underlying assumptions, principles and the existing policies and practices of CBA grading and reporting in Ghanaian polytechnics. In seeking to achieve this goal, relevant literature and policy papers from several databases including Academic Search Elite, Science Direct, Educational Resources Information Centre (ERIC) and Web of Science were examined together with key stakeholder consultations to identify main issues to be investigated in the study. In evaluating key questions about the debate on grading and non-grading of CBA such as whether, why and how to grade with related assumptions and principles, the following issues were discussed;

- alternative ways of reporting merit or excellence
- criteria for creating levels of performance, and
- grading approaches in CR framework

The paper further attempts to challenge a number of widely-held beliefs, assumptions and principles that underpin CBA from both theoretical and assessment perspectives. Among them include;

- national competency defines only one acceptable standard of performance that can either be demonstrated as 'competent' or 'not yet competent'
- outcome of CBA must be reported in a dichotomous (two level) scale
- CR assessment does not allow for varying levels of performance
- Graded assessment is not compatible with competency-based education

Furthermore, the four key principles of assessment were examined in relation to the existing 'competent'/'not yet competent' grading practices to identify any gaps or differences. Finally, the paper proposes grading levels in CBA from a set of principles grounded in theory and consistent with international literature on competence assessment and reporting to inform future policy formulation in Ghanaian VET.

The central research question for the study is: To what extent do CBA grading and reporting in Ghanaian Polytechnics influence the achievement levels of trainees?

## 8. Principles for grading

Assessment in whatever form, graded or non-graded must be considered within the framework of the four key principles namely; validity, reliability, fairness and flexibility. These principles were examined to determine how

they apply to the existing grading practices of ‘competency’ ‘not yet competency’ in the polytechnics and to identify any discrepancies or gaps.

### 8.1 Validity

In the early 1990’s validity was defined as the extent to which the assessment methods measure what is supposed to measure (Hager, Athanasou and Gonczi, 1994). This definition is no longer tenable because it ignores the role of interpretation of the evidence. In the context of CBA, validity refers to the extent to which the interpretation and the use of assessment outcomes can be supported by evidence (Dept of Training & Workforce Devpt, 2013, Williams & Bateman 2003). Validity is rather inferred and not measured and is concerned with the truth and accuracy of assessment results. However, concerns and letters from CORP, teachers, students and employers seeking clarifications, interpretations of grades and transcripts, equivalences and revision in the entire grading system give ample indication that there is lack of understanding and transparency in the polytechnics and the VET sector, particularly on;

- how to apply CR approaches to grading in the assessment processes
- framework in which evidence of competence is collected and interpreted
- how grades are determined and reported for consistent and objective judgment
- making available to stakeholders’ competency standards and grading criteria to ascertain benchmarks for assessment
- the use and interpretations of the ‘competent’ ‘not yet competent’ reporting by key stakeholders (trainees, assessors and employers/ HEIs)

Without understanding and transparency, invalid references can be drawn from assessment results, making it difficult for any predictive validity to be established.

The current situation in polytechnics calls for the need to redesign the existing grading system because research into validity of an assessment seeks to answer questions about how well the assessment results predict future performance (predictive validity) or intended and unintended effects on trainees learning (consequential validity) (Linn et al 1991). Furthermore, the current assumption where activities in CBT simply mimics workplace standards implies that assessment of competence does not go beyond what is covered in the training.

In the face of rapid growth in science and technology, industry training advisory Boards (ITABS), are in constant engagement with employers to develop, maintain and update competency standards to assist individuals to adapt to current and future patterns of operations in the industry (Warehouse and Virgonia, 2004). This means that reliance on mastery of industry standards will encourage teachers to teach narrowly to achieve those standards but no further than that and thus, discourage the more able and hardworking students from achieving excellence.

For enhancement of employability and labour mobility, performance indicators must not be restricted to the binary reporting of ‘competent’ / ‘not yet competent’ but cover both routine and non-routine tasks, workplace practices, situational contexts and contemporary management skills in order to promote flexibility and adaptable workforce to deal with change (Reid and Fitzgerald, 2011).

### 8.2 Fairness

Assessment is fair when it does not disadvantage any person through the assessment process. From the literature one major criticisms against the ‘competent’/ ‘not yet competent’ reporting is that it does not differentiate among high, average and low achievers for purposes of

- motivation and promotion,
- reward for excellence,
- selection into higher education and employment, and
- provision of feedback on learning outcomes. (Williams & Bateman, 2003, Boahin and Hofman 2012).

### 8.3 Reliability

Reliability refers to the degree of consistency and accuracy of the assessment results or the extent to which the assessment provides similar outcomes for students with equal competence at different times or places (Dept of Training & Workforce Devpt, 2013, Williams & Bateman 2003). Unlike validity, reliability can be measured and is concerned with elimination of errors. Therefore, its relationship with the binary reporting of ‘competent’ ‘not yet competent concerns with

- how accurate, precise and consistent is the assessment procedure from one school to another
- the process of observation and the rules for recording evidence
- how much error is included in the evidence
- providing consistent results when assessment procedure is repeated.

A study on the method of grading CBA in the polytechnics reveals that teachers blend the traditional letter grading with ‘competent’/ ‘not yet competent’ (Boahin and Hofman, 2012). These concerns tend to undermine

the reliability of the assessment results, credibility and mutual recognition of qualification between universities, VET colleges and unrelated fields of study (Smith 2004).

#### *8.4 Flexibility*

Flexibility principle implies that assessment must allow for on-and off-the-job assessment at mutually convenient times and situations. It should also allow for the recognition of competencies no matter, when, where and how they are acquired, including learners' prior knowledge and skills, popularly called recognition of prior learning (RPL). In the polytechnics however, RPL is not part of the assessment processes, and CBA usually takes place in the classroom or workshop other than on the job or workplace with minimal involvement of industry (Boahin and Hofman, 2012). This probably accounts for the reason why employers /industry agitate for the review of the grading system since they are not familiar with the criteria for grading and reporting systems.

### **9. Criteria to determine levels of achievement**

Although the literature abounds in widespread support for assessing levels of achievement in CBA, alternative ways of reporting merit or excellence have not been given adequate consideration. The following are types of criteria used to create levels of performance;

- Achieving the outcomes at a higher levels
- Number of attempts – determines grade level
- Speed of performance (but consider learner's history (RPL))
- Accuracy levels (Distinction- 0 error, credit- 1 error, pass- more errors)
- Transfer of skills to new situations
- Consistency of performance
- Level of supervision- Expert-no supervision, skilled – normal supervision, trained- close supervision, partially trained- constant supervision)
- Use of profiles- testimonials, references, recommendation letters et)
- Complex traits- artistry, creativity, flair, initiative, motivation, adaptability, efficiency etc) (Gillis & Griffin, 2005)

On the basis of these criteria, some form of CBA grading in the literature include;

(i) '1st class passes, 2<sup>nd</sup> Class pass, Credit, Distinction', (ii) 'Competent, Merit, Distinction' (iii) 'Pass, Pass with Merit' (iv) 'Pass, Credit, Distinction' (v) 'Low Pass, High Pass, Credit, Distinction' (vi) 'Achieved, Achieved with merit, Achieved with Distinction' (vii) 'Not yet proficient, Proficient, Exceeding proficiency' (Sturgis, 2014).

### **10. Proposed principles for graded assessment**

Given the gaps and discrepancies in the application of the key assessment principles with the existing 'competent' 'not yet competent' grading practices in the polytechnics, coupled with concerns by students, teachers, CORP and industry and in recent literature in this study (Sturgis, 2014), there is the need for more specific guidance to strengthen and complement the principles that apply to assessment in general. The principles to recognize varying levels of performance to support graded assessment in CBT include (a) the use of criterion referenced framework (b) scoring rubrics and (c) a suggested grading system consistent with international literature on competence.

#### *10.1 Establishing Graded criteria*

Establishing graded criteria in Criterion referencing within competency-based assessment framework can be defined in two main ways, the generic and content-specific (Gills ad Griffin (2004). The generic scoring criteria measures candidate's performance against criteria that underpin competencies in general (across subject boundaries) to any industry areas but not directly related to specific unit(s) of competency or industry training package requirement (Mayer, 1992). Performance against each criterion is rated using five-point Likert scale with performance descriptors ranging from levels 1, 3, and 5 (Gillis and Griffin, 2005). They include underpinning knowledge, communication skills, organisational skills, problem solving, critical thinking number of attempts, level of supervision etc. These criteria form the foundation for all assessment regardless of context (Tognolini, 2001) and can be applied to a broad category of industry contexts or disciplinary fields.

The major limitation to apply generic or common criteria to all industry contexts is the difficulty in comparing performance across assessors, disciplines and industry contexts. Assessors often rely their own (ipsative) interpretation on comparative terms (excellent, effectively...) to differentiate levels of performance which rather undermines consistency of interpretations and inter-rater reliability. It often requires statistical moderation to control systemic extraneous influences in order to achieve validity in the assessment results particularly between contexts such as on-the-job and off-the-job (Gillis and Griffin, 2005).

Table 1. Generic scoring criteria and performance level: Computer Literacy

Rating	Scoring Criteria: Computer Literacy
	Level of Performance
5 High	Performs core application tasks common to application software excellently
4	
3 Medium	Effectively performs basic word processing tasks
2	
1 Low	Identifies types of computers and common peripherals easily

Grading criteria that is content-specific is designed to meet specific industry training package requirements (Bateman, Griffin and Gills, 2003). This method of criterion is referenced interpretation of assessment where levels of competence could be determined in a continuum of increasing competence involving minimal and maximal acceptable levels of reporting including grades. The content-specific is variously referred to as standard referenced approach, a subset of criterion referencing that uses specific criteria to define levels of performance along developmental continuum. The continuum is used to interpret, define and report a range of performance levels in the workplace which reflects the cut-off point for competence (Gillis and Griffin 2005). Wolf (1993) argues that criterion referenced assessment produce a distribution of performance....., a single pass/fail is only one way to partition that distribution and that one of these levels defines the performance expected in the workplace and that reflects the cut-off point for competence.

The content-specific scoring criteria allows for multiple levels of performance quality to be identified along developmental continuum to provide substantive meaning to the grades, scores or marks. Unlike the generic criteria, it also measures a specific set of competencies (skills and knowledge) individuals have acquired within a given context. It also has the capability of expanding the notion of competency to include the assessment of higher order competencies through the process of “unpacking” units of competency. This involves the analysis of elements, performance criteria, range of variables and evidence guides to develop set quality criteria that could differentiate levels of performance of individuals being assessed against the particular unit (Schofield and McDonald, 2004, Gillis and Griffin, 2005). In order to clearly describe quality of performance that are specific to the unit(s) of competency and arranged in hierarchical and sequential manner requires the development and use of scoring rubrics.

### 10.2 Scoring Rubrics

A rubric is defined as any rule, exemplary comment (Geddes and Grosset, 1999, cited in Gillis and Griffin, 2004). In the context of CBA, scoring rules are statements that clearly describe the typical levels to assessors and students for the purpose judging and scoring performance of a task. Constructing a good rubric involves focusing on exactly what to measure how to measure, performance and describing a passing level of performance or proficiency. A rubric must have three essential components namely;

- (i) Objective – defining the objective or behaviour to be assessed (what skill or knowledge students need to be accomplished at the end of the unit),
- (ii) Performance characteristics – choosing the type of activity (time constraints, resources, and how much data), and finally
- (iii) Performance criteria – defining points or scores indicating the degree to which the objectives were met (elements of task/project to determine success or otherwise)

It must be emphasised that rubrics are not meant to determine grading as in the traditional grading, rather, they guide students’ learning in a developmental continuum, that is students who are ‘not yet competent’, ‘achieving competency with support’, ‘competent’, and ‘competent independent performance’ as described in the scale levels depicted in table 2.

Table 2. Components of assessment rubrics

Dimension of competency / criteria to be assessed	Task description (instructions attached to specific assignment)			
	Emerging Scale level 1	Developing Scale level 2	Developing Scale level 3	Mastering Scale level 4
Task performance (Elements added to reflect the number of criteria to be assessed within a task)	Not yet Competent	Achieving competence with support	Competent	Competent independent performance
Sample of descriptions that can be customized to the criteria being assessed	Little or none Never Incomplete Inadequate Unsatisfactory Unclear Rarely Lacks	Fewer than Seldom Less than Sometimes Unclear Vague Minimal Somewhat relevant Somewhat reasonable	Satisfactory Competent Clear Always Accurate Logical Appropriate	Excellent Exemplary Always All Complete Superior Significant Logical

Source: Adapted from Maxwell's assessment rubrics, 2010.

Huba and Freed (2000) cited in Gillis and Griffin (2004) clearly describe the benefits of scoring rubrics as

- the quality of performance is described in typical levels from low to high;
- Each aspect of quality to be judged separately are important for the purpose of the assessment
- For each aspect of quality, the rubrics should provide a commentary describing the defining features of work at each level of performance

The use of rubrics is very popular in the VET institutions because they define quality of performance and that a student status is reported (referenced) relative to the performance standard for each area of skill or knowledge.

Furthermore, rubrics and units of competency serve as dialogical tools in that a rubric is a place of dialogue, information, feedback and a critique. Unit of competency from a training package comprises the criteria for assessment which in itself is a rubric, a set of standards (elements), a set of criteria for judging performance against those standards (performance). Using rubrics therefore is a surest way to resolving the various arguments for graded assessment including what students want, what employees ask for and demands of higher education. This means that a student does not move to the next level until he or she can demonstrate competence at the current level. What this means is that students continue to learn until they are proficient.

### 11. Suggested CBT grading system and equivalences with the traditional grading system

It can be inferred from the literature that the decision to grade or not to grade is ultimately a policy decision which should be based on the benefits to be derived and whether grading is the most appropriate strategy to achieve the desired results (Thompson et al, 1996). With the current trend of converting all polytechnics in Ghana to the university status, assessment based on merit rather than non-graded competent is becoming more relevant so as to establish equivalences with university grading system and enhance mobility of VET graduates. To achieve fairness in redesigning grading in CBA requires;

- transparent, consistent and meaningful approach to arrive at any assessment decision
- provision of clear information on grading methodology and reporting process.
- minimum number of credit hours in all CBT programmes before the attainment of competence

One notable limitation in the existing grading system is wide variation of minimum credit hours, ranging from 100 to 218, within the same or different CBT programmes in the polytechnics. This may probably due to the fact that credit hours are not factored in the computation of the existing grading system, contrary to the practice in well-known grading systems such as Grade Point Average (GPA), Cumulative Weighted Average (CWA) and European Credit Transfer System (ECTS). The computation of the suggested grading system therefore, uses the European Credit Transfer System (ECTS) because the latter is modeled on the principles and philosophies of CBT. In the ECTS grading system, the total minimum credit hours expected to complete CBT programme is 120, below which no trainee could satisfy the requirement for an award of competence.

Using the minimum credit hours of 120 in the suggested grading now becomes;

$$\text{a) } \frac{CRSA}{CCR} = \frac{\text{Cumulative RSA}}{\text{Cumulative credit Hours}} = \text{Credit Point Average (CPA)}$$

$$\text{a) } \frac{50 \times 6 \text{ semesters}}{120} = 2.5(\text{possible reassessment before attaining competence increases the CR}), \text{ hence;}$$



$$\frac{50 \times 6 \text{ semesters}}{150} = 2.0, \text{ at } 50\% (50 - 59) (2.0 - 2.9)$$

$$\text{b) } \frac{60 \times 6 \text{ semesters}}{120} = 3.0, \text{ at } 60\% (60 - 79) (3.0 - 3.9)$$

$$\text{c) } \frac{80 \times 6 \text{ semesters}}{120} = 4.0, \text{ at } 80\% (80 \text{ and above}) (4.0 \text{ and above})$$

From the above computations, the suggested grading levels are presented as follows:

- 4.0 and above -- Competent with Distinction (CD)
- 3.0 – 3.99 -- Competent with Merit (CM)
- 2.0 – 2.99 -- Competent (C)
- Below 2.0 --Not Yet Competent (NC)

Where,

- CRSA is the cumulative raw score average
- CCR is the minimum cumulative credit hours for the entire study period
- 50, 60 and 80 denote the cut-off scores/points at the various levels of competence in the learning continuum
- Six (6) semesters are the total number of semesters for the three-year mandatory duration for each programme of study in the polytechnics
- 120 indicates the minimum credit hours expected to complete CBT programme to satisfy the requirement for an award of competence

Table 3. Suggested Class Awards

s/n	Suggested Class Awards	Score Range	Credit Point Average (CPA)
1.	Competent with Distinction (CD)	80 and above	4.0 and above
2.	Competent with Merit (CM)	60 – 79	3.0 – 3.9
3.	Competent (C)	50 – 59	2.0 – 2.9
4.	Not yet Competent (NC)	Below 50	Below 2.0

Table 4. Equivalences between CBT and traditional grading systems

S/N	GRADE POINTS	CBT GRADING	TRADITIONAL GRADING
1	4.0 and above	Competent with Distinction (CD)	First Class
2	3.0 – 3.99	Competent with Merit (CM)	Second Class Division
4	2.0 – 2.99	Competent (C)	Pass
5	Below 2.0	Not yet Competent (NC)	Fail

## 12. Conclusion

To a large extent the existing CBA grading and reporting in Ghanaian polytechnics does not influence the achievement levels of trainees due probably to lack of understanding and transparency in applying criterion referencing approaches to determine competence. Like any educational innovation, CBA and its grading systems are likely to elicit reactions particularly as they challenge or replace the traditional grading system of As, Bs Cs and Fs in the VET sector. However, as schools become more familiar with the language of CBA, our students will be the ambassadors and translators, explaining to family members, colleges/universities and employers what they have achieved, how they have achieved it, what they want to achieve next, and what they need in order to be successful.

When grading and reporting of CBA results become more transparent, it would provide relevant information to employers and HEIs to make informed decisions in order to fulfill one of the major purposes of graded assessment, which is facilitating selection, recognition and cross-sectoral pathways.

From the study, the following key issues are proposed for consideration in Ghanaian VET.

- Creating different levels of performance in a course is compatible with competency-based assessment.
- The decision to provide different levels of performance ultimately is a policy decision which could be based on the grounds of access and equity considering the rapid growth and demand for higher education, coupled with the introduction of relevant courses and programmes to meet the changing needs of the labour market.
- CR assessment does not necessarily produce dichotomous decisions of ‘competent’ ‘not yet competent’, but polychotomous decisions, that recognise various levels of achievement or degrees of merit using a number of cut-off points depending on the nature and content of the programme.

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## Author's Profile.

**Dr. Peter Boahin** is the Head of Test Development Division at the National Board for Professional and Technician Examinations (NABPTEx), Ghana. He holds an M.Phil in Educational Measurement and Evaluation from the University of Cape Coast, Ghana and a Ph.D in Educational Science from the University of Groningen in the Netherlands. His research area is implementation of educational innovations in higher education with special interest in competency-based training, assessment and evaluation, technical and vocational education and training (TVET).