Classroom Assessment Techniques: Good for Business – A Short Critique

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Abstract

The movement from summative assessments, although still needed and used, has transitioned to a combination of summative and formative assessments. The key focus is no longer in predominantly the successful completion of course material within universities, but whether learning has occurred. The driving forces are a myriad of reasons to include global needs, business input and demands and generational cohorts. It is with this movement that classroom assessment techniques (CATs) were developed based on empirical studies and demands. Thus, teaching techniques have transitioned from a memorization and regurgitation method to one of understanding concepts and theories and application. The need resulted in classroom assessment techniques which focuses on a formative assessment method. The concepts and techniques are used for all disciplines providing for a collaboration of efforts to ensure learning occurs. This paper will review whether CATs enhances learning and subsequently meet the business needs of critical thinking and associated skills.

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The intent of higher education is to prepare graduates with the necessary training to successfully integrate into society and provide benefits immediately. This is not only based on service to community but also the marketability and immediate impact on organizations where the graduate is currently employed or will be employed in the future. The driving forces of business and global needs have impacted higher education to ensure students are marketable and provide immediate impact once hired. As businesses have become more "dynamic and complex", the need for teaching had to take a different approach (Cottell & Harwood, 1998, p.37). The need for skills forced universities to change approaches to ensure graduates could meet these needs. Krell (2011) contends that education is flawed in meeting the needs of business. He also contends (Krell, 2012) there is a critical skills gap within employees entering the workforce. Companies are in need of graduates who can work in teams, collaborate, problem solve, plan and use critical thinking skills. Thus, this has pushed higher education to change teaching models from memorization and regurgitation to application. Hence, the classroom assessment techniques have arisen. The review of CATs is to support meeting the concept of learning which then better meets the skills needed by businesses.

Formative and Summative Assessments

To fully understand CATs, knowledge of formative and summative assessments must be understood and the intent of the application of each. According to Angelo and Cross (1993), there is no effective teaching without learning. Summative assessments occur after the fact of teaching and not at a point which ensures learning occurs. This includes tests with or without associated feedback to measure results. With formative assessments the process checks to determine if the students are learning. This occurs in time for the instructor to reinforce, explain

and embellish the concepts and theory. In addition, the instructor can use the techniques to expand the knowledge and critical thinking of the student (Emanuel, Robinson, & Korczak, 2013). Thus, formative assessments are based on the theory of Bloom's Taxonomy (Bloom, 1956). Another theory which is successfully applied to formative assessments is Kolb's Experiential Learning (1985).

Experiential learning is conceived as a four stage cycle:

(1) immediate concrete experience is the basis for,

(2) observation and reflection,

(3) these observations are assimilated into a "theory" from which new implications for action can be deduced,

(4) these implications or hypotheses then serve as guides in acting to create new experiences.

The learner relies on four different learning modes: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. The learner must be able to involve himself fully, openly, and without bias in new experiences, he must be able to reflect on and observe these experiences from many perspectives, he must be able to create concepts that integrate his observations into logically sound theories, and he must be able to use these theories to make decisions and solve problems. Then learning has occurred through application of concepts and theory. Angelo and Cross (1993) "see classroom assessment as likely to be beneficial to both teachers and students because it revolves around questions of immediate interest to them (rather than questions of outside researchers), uses accessible methods to collect data, and generates results that have clear implications for action and are thus likely to produce change" (p. 109).

Classroom Assessment Techniques

The focus of classroom assessment techniques is on teacher directed, content specific, learner centered, formative assessment and ongoing (Johnson, 2008). The results are a more highly developed critical thinking and problem solving skills (Embretson, 2010). The substantive aspect of validity could be impacted by highly contextualized tasks that measure critical thinking. The integrated approach to assessment and instruction, combined with a detailed theory of action, are important ingredients for success.

Critical thinking is a major goal of education with an inclusion of theory and practical application (Johnson, 2008). This is the incorporation of both inductive and deductive reasoning. This is also a desired skill of businesses. Critical thinking (inductive and deductive reasoning) develops problem solving skills which are a skill sought after by businesses.

In the *Taxonomy of Educational Objectives* (1956), Bloom proposed six levels of thought. Each level in the hierarchy builds upon the previous level; cognitive skills learned at one level play a part in thinking at the next successive level. The six levels are: knowledge, comprehension, application, analysis, synthesis, and evaluation. Thus, for student learning to occur, the teacher uses assessment techniques to move the student to higher levels of analysis, synthesis and evaluation. Johnson (2008) citing Paul (1993), Seigel (1988), Brookfield (1987), Meyers (1986) and Yonkers (2002) contends critical thinking covers a variety of results such as; elements of reasoning, intellectual abilities, modes of reasoning, traits of mind, intellectual standards, reason in actions and beliefs, questioning assumptions, ability to generalize and invent new possibilities, and characterize intellectual independence.

Angelo and Cross (1993) purpose a process for effective CATs which is three steps. This consists of planning, implementing and responding. The planning phase is to pick a learning

objective, pick an assessment to provide the type of feedback desired, and explain the purpose to the students. In the implementation phrase the instructor collects the feedback and then analyzes the feedback. The last phrase (responding) consists of interpretation of the results and formulating a response to affect learning. Then communicate the results to the students and reflect on the experience. This formative assessment occurs during the teaching process and ensures expansion of knowledge, as well as critical thinking and application of concepts and theory.

Angelo and Cross have developed 50 different CATs for instructors to use which assess at different levels and needs based on the objectives and needs of the instructor and students. The first level is assessing prior knowledge and experience which checks declarative knowledge and associates it with experience and concepts of the course objectives. The next category of techniques is based on analysis and critical thinking. The third category assesses creative thinking and synthesizing theory and concepts. The fourth element or category assesses skill in problem solving by utilizing the objectives taught. The fifth category assesses application and performance by ability to apply the concepts taught. Although there are other categories which show reaction and provide additional feedback on feelings, self-awareness, study skills, behaviors and strategies, the first five is a good foundation for assessing learning. The techniques are adjustable guidelines or frameworks to support the learning model with integrated tools (Wesiak, AL-Smadi, Höfler, & Gütl, 2013).

In Steadman's (1998) research she contends the purpose of CAT's is to "to obtain feedback on teaching and classroom activities, to improve teaching, to monitor student learning, to improve communication and collaboration with students, and to improve student learning" (p. 34). CATs purpose, as previously stated, is to effect learning. This means that learning does not occur through memorization of concepts and facts which are housed in short-term memory. For actual learning to occur, the

information must be transferred to long-term memory. Thus, assessment and then reinforcement helps this occur. Another point for learning to occur is to ensure one can apply the knowledge gained. Today's businesses are in need of graduates who can apply theory and concepts. Following Kolb's Experiential Learning Model, learning will occur when there is reflection, observation, immediate application of concrete experience and assimilation of theory into practical application.

Conclusion

Based on the needs of business for graduates of higher learning institutions to arrive in the global business environment with the ability to think critically, work in teams and use good problem solving techniques, faculty need to integrate new techniques, new forms of feedback, and efforts to improve the quality of teaching and learning. The continued use, support, and promotion of classroom assessment have the potential to move educational institutions forward on their journey of continuous quality improvement. Feedback is necessary for student learning which is written, verbal, individual, and group which patterns classroom assessment techniques (Randall & Zundel, 2012). According to Cottell and Hardwood (1998) "CATs offer a valuable supplement to these traditional approaches because they are formative and based on an ongoing student-professor feedback loop. Thus, professors can improve student learning by using the feedback from CATs to exercise greater discretion over when and how to make midcourse adjustments" (p.40). Using these techniques faculty move students to a higher level of learning; this moves beyond teaching, but more to motivation, mentoring and modeling by application of concepts and theories and not just memorization and regurgitation. This is accomplished through CATs which meets the needed skills for businesses and successfully integrate students into society and provide benefits immediately.

References

Angelo, T. A., & Cross, K. P. (1993). *A handbook of classroom assessment techniques for college teachers*, San Francisco: Jossey-Bass.

Bloom B. S. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* New York: David McKay Co Inc.

Cottell, P. & Harwood, E. (Fall, 1998). Do Classroom Assessment Techniques (CATs) Improve Student Learning?. *New Directions for Teaching and Learning*, 75, 37-46.

Emanuel, D. C., Robinson, C. G., & Korczak, P., (June, 2013). Development of a formative and summative assessment system for AuD Education. *American Journal of Audiology*, 22, 14-25.

Embretson, S., (2010). Cognitively Based Assessment and the Integration of Summative and Formative Assessments. *Measurement*, 8: 180–184.

Krell, E. (June 2011). The Global Talent Mismatch. *HR Magazine*. 56(6), 68-73.

Krell, E. (May 2012). Retool your public-private partnership. HR Magazine. 57950, 41-46.

Johnson, D.C. (2008). Thinking critically about assessing online learning. *The International Journal of Learning,* 14(12), 125-130).

Kolb, D. (1985). *Learning style inventory*. Boston, MA: McBer and Company.

Randall, L. & Zundel, P., (2012). Students' Perceptions of the Effectiveness of Assessment Feedback as a Learning Tool in an Introductory Problem-solving Course. *The Canadian Journal for the Scholarship of Teaching and Learning*, 3, 1, 3. DOI: http://dx.doi.org/10.5206/cjsotl-rcacea.2012.1.3

Steadman, M. (Fall, 1998). Using Classroom Assessment to Change Both Teaching and

Learning. *NEW DIRECTIONS FOR TEACHING AND LEARNING,75, 23-35.* NY:NY. Jossey-Bass Publishers

Wesiak, G., AL-Smadi, M., Höfler,M., & Gütl, C., (2013). Assessment for Complex Learning Resources Development and Validation of an Integrated Model. *iJET*, 8(1), 52-61.