

Innovative Assessment For Learning Enhancement: Issues And Practices

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ABSTRACT

Although summative assessment is indispensable for determining whether or not students meet the content standards, it alone is insufficient for providing teachers and administrators with the information necessary to make ongoing decisions about instruction. This article looks at the motivational impact of the assessment on students' achievement and concentrates on methods of formative assessment that considered being innovative, such as assessment by objective tests, small group assessment, peer- and self-assessment.

Keywords: innovative assessment, motivation, validity, reliability

INTRODUCTION

Assessment of student learning can be defined as “the systematic collection of information about student learning, using the time, knowledge, expertise, and resources available, in order to inform decisions about how to improve learning” (Walvoord, 2004, p. 2). Assessing students' work provides teachers with an opportunity to gauge not only how well their students have learned, but also how effectively they have been teaching them. Assessment is an integral component of any successful teaching effort and “if we wish to discover the truth about an educational system, we must look into its assessment procedures” (Rowntree 1977, p. 1). Internationally, academics are seeking better ways to assess students, recognizing that diverse methods are available, which may solve many of the problems associated with the evaluation of learning.

The term ‘assessment’ covers a broad spectrum of compulsory or optional activities/tasks and the appropriateness of any particular form of assessment is influenced by disciplinary concerns and the type of learning being assessed. Assessment tasks can be roughly divided into two categories - formative assessments and summative assessments. Formative assessments are on-going assessments, reviews and observations in a classroom. Teachers use formative assessment to improve instructional methods and student feedback throughout the teaching and learning process. Summative assessments are typically used to evaluate the effectiveness of instructional programs and services at the end of an academic year or at a pre-determined time. The goal of summative assessments is to make a judgment of student competency at the end of an instructional period.

Distinguishing between the two main types of assessment, Biggs (1999) suggests that summative assessment is important for certification and also for monitoring the effectiveness of teaching, whereas formative assessment is important for checking the student's development and potential. In a learning context, summative and formative assessment are referred to as “assessment of learning” and “assessment for learning”, respectively.

Although formative assessment has long been recognized as an indispensable part of an effective active-learning environment, formative assessment is rarely used to its fullest advance in higher education, being very demanding of teacher time. As the total number of students increases worldwide, real funding per student has decreased (NCIHE, 1997, p.45) and, as a consequence, student-staff ratio has also been increased. In larger classes, assessment costs overtake teaching costs as lecturers spend more time each week marking assignments than lecturing in the classroom. To confront this assessment overload, teachers are forced to reduce the volume of assessment and, in particular, the volume of feedback that individual students receive.

The shift toward modularisation of higher education programmes during the past two decades has worsened things. Allowing students to combine modules and take credits until an undergraduate degree has been accumulated has had the purpose to increase the mobility between institutions through the exchange of course credits. However, the small size of the modules has the consequence that summative assessment has to take place more frequently. Also, the shorter length of these study units limits the time students have at their disposal to gain familiarity with material and practice skills before they are assessed.

Time pressures, changing curricula and the requirement for better student support create a need for more flexibility in assessment practices. At the same time, quality standards used by state and federal agencies to ensure the fairness and reliability of assessment practices, limiting assessment options. The motivation to transform assessment practices in higher education and handle them more productively is therefore strong. In this light, the purpose of this paper is twofold: 1) to discuss how assessment, in general, and innovative assessment, in particular, provide a driving force for learning and 2) to examine the use of some new methods of assessment as a supplement to traditional forms, drawing some basic lines for their successful implementation in the classroom reality.

ASSESSMENT, MOTIVATION AND LEARNING

Assessing student progress or learning achievement with appropriate tasks is extremely important particularly for students studying in fully or partly external mode. The nature of the assessment tasks influences students' approaches to learning by adjusting their attention to what the tutor think is important in relation to the study of a subject. Students study mainly what they think will be assessed, imitating procedures presented by the teachers and expending effort proportional to the effort necessary to produce the amount and quality of the work perceived as acceptable. So, the naive view that assessment follows teaching and learning and measures their final outcomes is inadequate, because students see it coming (Bostock, 2004). 'Assessment backwash' as defined by Biggs (1999) means that student learning is mostly determined by the assessment tasks and not by the teaching or the lists of topics or objectives of the official syllabus.

Working back from desired learning outcomes, in relation to a unit or subject area, good assessment is designed to assess a broader range of student abilities, e.g. problem solving, critical thinking, effective communication, working in groups, and along with feedback shapes learning in positive and negative ways, e.g. promotes rote learning or learning in depth (Soliman, 1999). Teachers 'transmit' feedback messages to students about strengths and weaknesses in their work assuming that these messages are easily decoded and turned into action. Providing prompt and detailed feedback on students' work, teachers identify where errors have been made, explain ideas or concepts, demonstrate techniques or procedures, engage students in some thinking to what they have written or presented, suggest further study or reading, explain and justify marks or grades and suggest how to approach subsequent assignments (Brown et al. 2003). Effective feedback aims to improve student performance but for this to happen instructors must ensure that students know the performances expected of them, the standards against which they will be judged, and have opportunities to learn from the assessment in future assessments.

Engagement with the assessment task requires that students draw on prior knowledge and motivational beliefs and construct a personal interpretation of the requirements and properties of the task. Assessment and feedback drive learning through motivation. Motivation is what drives us and makes us do the things we do, and according to Schermerhorn, et al (2002, p. 147) can be defined as "forces within an individual that account for the level, direction, and persistence of effort expended at work". Students' intrinsic and extrinsic motivations are not fixed and can rapidly change through the course. Intrinsic motivations are those that arise from within, engaging students in tasks because they find them interesting, challenging, involving, and satisfying, while extrinsic motivations are stemming from factors outside the students and engage them in tasks for the sake of reward. Motivation associated with learning involves both forming goals that have a valuable outcome and making an effort to achieve them. The overall sense of expectations that students experience each time a particular assessment task is assigned, and the degree to which they meet those expectations and receive related feedback, influence the amount of effort students will invest (Salomon, 1983).

Summative assessments, in the form of tests and examinations, are a key source of extrinsic motivation for learning and, although they are deemed promoting surface learning and generating negative emotions (such as fear,

panic and anxiety), are comprehensive in nature and provide accountability. To minimize any adverse effects that summative assessment might have on their students, teachers should create and utilize formative assessment tasks that are intrinsically motivating and measure real understanding through valid and reliable tests of learning outcomes.

INNOVATIVE ASSESSMENT

Traditionally, assessment has been seen as a measurement act that occurs after learning has been completed, not as a fundamental part of teaching and learning itself. This viewpoint however seems to be changing rapidly. External pressures on higher education institutions for accountability and for responsiveness to changing employment conditions, are leading to many innovations in instruction in general and in assessment in particular. The increased diversity of today's student body and the higher than ever expectations of fee-paying students for high-quality, timely, constructive feedback on their work, drive assessment away from the conventional methods such as unseen time-constrained written examinations and essay question exams. Good formative assessment is needed to enhance the student learning experience, provide useful and timely feedback, help students to understand and recognise quality, and lead to improved performance.

Although existing conventions on assessment are comfortable and we have adapted our lives to them, new and innovative forms of assessment, fully compatible with constructivist ideas, are being integrated in higher education curricula. Assessment by objective tests, small group assessment, peer- and self-assessment, are amongst assessment methods that considered being innovative (McDowell 2002), since they are trying the involvement of students as active and informed participants in meaningful, authentic and engaging tasks, that integrate assessment, teaching and learning, in contrast with the artificial time constraints and limited access to support available in conventional exams (Sambell et al, 1997).

Innovative assessment can be considered any form or method of assessment, which brings something new or try to do something different in an educational context (McDowell 2002). Even if not all of the new assessment techniques are new inventions, all are aiming to improve the quality of student learning, engaging her actively in a feedback and adjustment cycle that encourages deep learning. As Hannan and Silver (2000, p. 10) have observed: "Innovation in higher education has generally been taken to mean a planned or deliberate process of introducing change, directed towards (but not necessarily achieving) improvements or solving or alleviating some perceived problem. Such changes may be new to a person, course department, institution or higher education as a whole. An innovation in one situation may be something already established elsewhere, but its importance for this discussion is that initiative takers and participants see it as an innovation in their circumstances."

Much of the momentum for change in assessment in higher education stems from the widespread recognition that, quality is not just a matter of quantified learning outcomes but also a matter of holistic view of the learning process, where personal perceptions and reactions to learning situations have a central role. Traditional forms of student assessment are focusing mainly on the quality of end products of the education process, ensuring the validity of a course degree, which is the external recognition of a qualification that is wanted by universities, employers and individuals (O'Donovan, 2005). Although assessed essays and closed examinations are frequently criticized by the students as being artificial, pointless, misleading, unfair, at the same time they prefer them because they are familiar and less time-consuming.

Innovative assessment tools and strategies have the potential to shape the quality of learning process without overlooking the needs of the learner in an attempt to provide readily accessible and comparable results for external stakeholders (e.g. administrators, teachers, parents and employers). According to McDowell (2002), students generally think innovative assessments are interesting, worthwhile and help them to learn, but their behaviour is affected considerably by their perception of what the assessment requires or by other factors such as their reasons for being on the course.

While many teachers recognize that student assessment needs to be reviewed, updated and reconfigured regularly, many universities continue to assess their students only with traditional written exams. Moving away from single test-scores towards a descriptive assessment based on a range of abilities and outcomes, innovative

assessment methods have sparked debates concerning critical parameters of effective assessment such as fairness, validity and reliability, workloads and applicability in large student cohorts. Although these core parameters are always causing tension among academics in traditional institutions, it is under the pressure of the shifting paradigm in assessment that these issues need to be addressed systematically.

Fairness

Although an assessment should not hinder or advantage a learner, inequalities of opportunities and recourses, and biases due to ethnicity, race, social class etc, are always threatening fairness in assessment systems of all forms. Innovative assessment forms, at least in theory, provide a climate of openness and trust that confronts discriminatory practices. The issue of fairness, from a student point of view, is a fundamental aspect of assessment, closely related to the concept of validity. Students often view traditional assessment as an inaccurate measure of learning, particularly criticizing one-day examinations as a lucky strike, because it's too easy to leave out large portions of the course material and still do well in terms of marks. When students are discussing innovative forms of assessment, they stress that "success more fairly depended on consistent application and hard work, not a last minute burst of effort or sheer luck" (Struyven et al, 2002). Although students express some concerns about the reliability and validity of self and peer assessment, they believe that the quality of the feedback they received from tutors and peers helped learning more (Sambel et al, 1997).

Validity

The educational effectiveness of any assessment scheme depends heavily on the validity and reliability of the selected tasks. An assessment task – test, examination or assignment – is valid when it corresponds to the purpose for which it was designed. If assessment tasks align directly to the learning outcomes for the subject, they are more likely to be valid. For example, a task designed to assess student's conceptual understanding, will be invalid if it requires only memorised answers. Assessors should be careful to design appropriate assessment tasks, clarify the purpose of assessment tasks and explain thoroughly the standards of expected student performance, if they want to achieve high validity.

Reliability

Assessment tasks are reliable when they consistently provide comparable marks across time, markers and methods. Although reliability is considered being the biggest problem in the implementation of innovative assessment techniques, one of the major arguments for reforming assessment in higher education is the unreliability of some of the more traditional assessment practices. Heywood (1989) suggests that tutor-marked assessments are themselves prone to a lack of consistency: different marks can be given to the same student by different tutors, but also, the same tutor may give different marks to the same student when the same paper is remarked. Clear, detailed criteria and multi-marker continuous assessments should be used to achieve high levels of reliability.

Workload

Integrating teaching, learning and assessment through formative assessment activities, within a manageable overall assessment workload for students and teachers, is very important. Although the nature of specific innovative assessment methods such as peer or self assessment may demand extra staff effort/time in the initial stages, spreading assessment throughout the semester and shifting marking to students helps both students and teachers to avoid bunching at the module end. Staff workload for assessment must be part of a workload allocation scheme while student workload needed for assessment must be limited by the learning hours in the module design.

Applicability

The widespread acceptance for the role of higher education as preparation for employment and the move to specifying curricula, in terms of learning outcomes, pushes universities to implement new kinds of assessment to assess generic/transferrable skills rather than assessing solely the acquisition of knowledge. In mass education systems, such as today's higher education provision, the learning needs of diverse student groups should be

addressed with a sequence of formative assessments and formative feedback. Each student must be presented with the opportunity to practice and develop transferable skills, i.e. problem solving, communication, group work, critical analysis and producing and presenting reports. Although innovative assessment techniques such as computer assisted assessment, group, peer- and self-assessment, are not a quick or easy solution to the problem, they provide the opportunity for immediate feedback from tutors, peers, mentors etc, encourage reflective learning, motivate student autonomy and responsibility and address inclusiveness and diversity.

Computer-assisted assessment (CAA)

Computer-assisted assessment (CAA) refers to the use of standalone or networked computers and associated technologies to pose objective tests and assess students' learning, both formatively and summatively. Objective tests require a user to choose or provide a response to a question whose correct answer is predetermined. Software packages like Questionmark Perception enable formative and summative assessment tests to be designed, delivered and automatically marked. Different question types are available to test designers, including: multiple-choice; multiple response; push button; text match; numeric; hot spot; fill-in blanks; and selection (Bull and Stevens, 1999). Combining web-based managed learning software like Blackboard and WebCT, with stand alone systems like Questionmark Perception, SToMP and Maple TA, many universities create their own best-of-breed virtual learning and assessment environment, giving their students opportunities to make judgments about their performance and learning needs.

Besides the practical and economical benefits that CAA has, especially when testing and automatically marking large cohorts of students, serious pedagogical advantages have also been attributed to its use, including: assessment of a wide range of topics very quickly; immediate and direct feedback to students; significant saving of time staff dedicate to marking; repeatability of tests consisting of randomly-generated test items; reliability and equity of computer-marked assessment; flexibility in terms of time and place of assessment; and, responsibility for own learning and test taking (Charman 1999). Although the provision of automatic feedback (in terms of scores, hints, praise and guidance) to the student along with statistical analysis on the performance of students are some clear advantages, the increased use of CAA has raised issues about the fairness, security, authenticity and validity of IT-delivered assessments (BSI, 2002). McCormack and Jones (1998) describing the main limitations of the use of CAA state that: implementation of CAA system can be costly and time-consuming; construction of good objective tests requires skills and practice and so is initially time-consuming; testing of higher order skills is difficult; assessors and invigilators need training in assessment design, IT skills and examination management.

Students in general hold positive attitudes toward using computers for assessment, assuming that CAA provides a positive learning experience and improves performance, especially when used formatively. Bull and Stevens (1999) used Questionmark software to examine the effects of formative and summative CAA and found that although students reported anxiety and apprehension prior to the computer-based test, at the end they enjoyed the experience more than traditional examinations. Charman and Elmes (1998), found that the motivational impact of CAA for formative assessment was due to its timing, the feedback given, and the fact that the tests were objectively marked against explicit criteria. Ricketts and Wilks (2002) monitoring performance during the introduction of CAA in a number of first- and second-year modules, found that both student performance and student opinions were strongly affected by the on-screen style of the assessment. Although a small number of students still 'hated computers' most students commented that there was 'less tension involved', that it was 'quick and easy to use', and even 'adds a sense of fun!'

GROUP ASSESSMENT

Small group learning is one of a variety of different learner-centered educational strategies that can be used to facilitate learning by keeping students energized, motivated and appropriately supported to complete complex but interested tasks. Problem solving, interpersonal and communication skills are amongst the generic skills that students need for success in workplace and can develop collaborating in small groups (preferably with no more than 5-8 students per group) on careful planned tasks.

Even in schools where summative assessment is conducted entirely by individual examination, group work can play a central role in student life and often in formative assessment. According to Race (2001), group assessment “can refer to the assessment by a tutor of the products of student group work, or to the assessment of the product by students from other groups (inter-peer assessment), or the assessment of the product of group work by students within a group (intra-peer assessment), and can include self-assessment by individuals or by the group as a whole of the product they have generated, and/or their respective contributions towards the product. Therefore it is usual for group assessment to involve at least some elements of peer-assessment and self-assessment”.

The products of student group work can include presentations, project reports, posters, exhibitions, portfolios of evidence and can be assessed in very similar ways to those used to assess the products of individual student work. The hard part is to decide when should group tasks be assessed, what assistance and preparation do students need for group work and how should marks be allocated to individual students if the assessment is to count towards students’ grades (Isaacs, 1999). Seven approaches to assessing group work, each one with its own advantages and disadvantages, were explored and summarised by Race (2001) as follows:

- Take the simplest path – just use the same group mark for all involved.
- ‘Divide and concur’ – divide up the assessed group task, and assess each component separately.
- Add differentials – give a mark for the overall group product, but negotiate differentials between group members.
- Add contribution marks – award a mark for the product of the group, and ask group members to peer-assess an additional mark for their contribution.
- Add further tasks – award an equal mark to each member for the product of the group task, then add individual assessed tasks for each member of the group.
- Test groups orally – award all group members the same mark for their product, but add an individual viva (oral exam).
- Test them in writing – allow the group mark for the product to stand, but add a separate related assessment component to an exam.

PEER ASSESSMENT

Peer assessment involves students making assessment decisions on other students’ work and can be summative or formative. Getting students to participate in peer-assessment can help them to understand the assessment criteria operationally, internalize the characteristics of quality work and deepen their learning experience by applying them to other students’ evidence such as essays, reports, presentations, performances, practical work and so on (Race, 2001). Being able to assess others work helps students assess their own work, a key feature of scientific work, and collaborate effectively in small groups toward a common goal – “determining and negotiating criteria, as well as assessing a product by a fellow student or group and providing constructive feedback, amplify that peer assessment is a specific pedagogical approach of collaborative learning” (Prinz et al, 2005).

Peer assessment takes advantage from the students’ natural propensity to engage with their peers, setting up their own study groups without any prompting from staff, compare their achievements with each other and give and receive feedback to and from their peers. As peer assessors have gone through the same learning experiences, are in a position “to relate their own experience to that of the assignment writer, ask relevant questions and take part in the assessment from a closer learner’s perspective than the tutor” (McConnel, 2000, p. 127). Research evidence about subjective marking suggests that peer assessment by students is about as reliable as that carried out by lecturers (Armstrong and Conrad, 1995, Orsmond et al, 1996).

Students may feel anxious when first engaged on peer (and/or self) assessment and their responses may reflect such things as scepticism about where the responsibility for assessment lies (its tutors job to judge performance), fears of being discriminated against by peers (existing friendship patterns may interfere with peer assessment), lack of confidence in applying effectively assessment rules. To address students’ fears and improve reliability and validity of peer assessment, teachers must ensure that

- instructional objectives and assessment criteria have been made explicit,
- students have had the opportunity to develop and practice their assessment skills,
- the rating instruments are simple, and
- a second marker is used to moderate the assessment (Toohey, 1996).

SELF ASSESSMENT

Self-assessment refers to people being involved in “identifying standards and/or criteria to apply to their work and making judgments about the extent to which they have met these criteria.” (Boud, 1986, p.12). As with peer assessment, students need to be clearly introduced to the self assessment criteria at the beginning of their course of the study. Discussion, exercise and reflection can help avoid any mismatch in interpretation of the area to be assessed, the aims of the assessment or the standards to be reached. Web-based programmes are increasingly being used for self assessment purposes, allowing staff and students to determine criteria and weightings for each criterion and exchange quickly detailed and personalized feedback.

Boud and Falchikov (1989) examined the reliability of staff/students marks and found that the area of study influences how students perceive self-assessment, and therefore how well it works. Although in several studies students had difficulties in interpreting given criteria requiring higher order thinking and they under-marked (good students) or over-marked (poor students) in comparison to the tutor, the success of such assessment practices “should be judged by how much the student develops during all stages of the assessment process” (Orsmond et al, 1996).

Students learn self-assessment through a combination of teaching strategies: direct instruction is appropriate at any time, especially when students are learning a new self-assessment strategy; models of exemplary performance provided to enable students to internalize a solid understanding of the expectations and compare their performance with the model; scaffolding using strategies that involve reflection, feedback from others, or self-questioning (Standards for the 21st century learner, 2008):

- Reflection - Tutors may scaffold attention and challenge students thinking about their own work utilizing reflection logs or portfolios. Students write on a regular basis about their initial topic selection, development of questions, search strategy, evaluation of information, and organization of final product.
- Feedback from others - Students may provide valuable feedback to their peers by using a rubric or checklist to look at the work and providing comments for suggested revisions. Also, students can help each other think through their learning process by asking questions, such as: What are you trying to answer? What do you know for sure? Where are you going to look for answers?
- Self questioning - Student self-assessment may be most effective when students learn to question themselves throughout the learning process. Tutors can scaffold self-questioning by providing questions that are specifically designed around the targeted skills, responsibilities, and dispositions for each learning experience.

CONCLUSION

In the context of student assessment, innovation aims to produce students who are 'deep' rather than 'surface' learners, highly motivated, equipped with a range of transferable skills, active and reactive participants in the learning process. Although innovative assessment techniques are not without their problems and certainly require careful implementation, there is widespread acceptance that assessment needs to be changed to improve learning. An increasing volume of action plans, recommendations, and resolutions to all kinds of real classroom problems is emerging continuously from assessment literature in higher education, promising to fill the gap between successful learning and fair assessment and allow students a range of processes through which to demonstrate their respective strengths and weaknesses.

AUTHOR INFORMATION

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