Enhancing student learning

The use of assessment methods as a separate end point to any learning and teaching program has changed significantly over the last few decades. Assessment is now seen as an opportunity to enhance learning and provide feedback for learners on their continuous progress. This, in turn, assists in improving the quality of the educational experience for the learner.

In this issue of REd, we discuss the nature of assessment and define terms commonly associated with health professional education. Even as assessment methods evolve, the principles of what makes a good assessment that fits its purpose remain the same. As always, we would love to hear feedback from our readers about their experiences with this topic.

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Assessment forms a major element of any teaching and learning programme and should be recognised as integral to the whole educational enterprise.”

Diana Wood, physician
The term ‘assessment’ has many meanings dependent upon the context in which it is used. At times, assessment defines a pass or fail outcome but it can also be used as a feedback or evaluation opportunity in an educative situation. To determine what assessment process should be used, the purpose of the assessment must be ascertained. Matching the tool to the purpose is an integral part of designing a learning and teaching, and should be seen as a major element in curriculum development. The first principle of assessment is that the choice of method or tool ‘should allow reasonable judgements to be made about the extent to which the student has achieved the aims, objectives or intended outcomes of the educational program’.

As health professionals provide a range of health care services, assessment of health professional learners is usually based on practical competency as well as a knowledge base. Miller’s pyramid for assessing clinical competence provides a framework in which to review methods of assessment. Knowledge (knows), competence (knows how), performance (shows how) and action (does) forms a hierarchy that suggests assessment methods should match key learning outcomes. A written test, for example, may assess knowledge and to some degree clinical reasoning, but may not be helpful for assessing the integration of knowledge and skills in a clinical performance. Careful selection of assessment methods is required to ensure that there is a direct relationship between learning objectives, learning and teaching processes and the expected educational outcomes.

**Assessment appropriateness**

Choosing the best assessment methods to use involves considering several criteria to ensure that the method is most appropriate for its purpose. Summative examinations (graded assessment, used for promotion or graduate decisions) should produce results that are reasonably reproducible and valid (the measurable characteristics of an assessment method). The emphasis for formative assessments (ungraded assessment) should be on providing the learner with feedback and direction. Reliability, validity, educational impact and cost-efficiency are factors to consider before implementing assessment. Reliable tests should give similar results on separate occasions for different learners. Validity refers to the extent to which what is claimed to be assessed is actually being measured. The educational impact of assessment should not be underestimated. Assessment methods that encourage deeper, longitudinal learning (like continuous formative or summative tasks) promote a richer educational experience. Having all assessments scheduled for the end of the year – or infrequently during the year – may mean that learners concentrate their learning efforts into one time period. This also affects the cost-efficiency element of assessment. Assessment processes that are strategically placed and appropriately timed will be the most effective overall.

**Assessment variety**

Assessment and learning are important features of any educational program, with benefits to learners, teachers and the institutions that support them. Assessment should align with the learning process and be carefully chosen to fit the purpose. Decisions regarding a learner’s achievements are best based on a variety of assessment methods that combine to show evidence of a learner’s clinical journey.

7. Op Cit Schuwirth & van der Vleuten
In Practice ... assessment methods

The purpose of the assessment will determine what form the assessment takes. Here is a summary of common assessment types in health professional education.

**Written:**

**True/false questions** - Candidates choose responses from a list of options.

**MCQ (multiple choice questions)** - Offer several answers from which the correct one (a single response or best answer) is chosen. ‘Case clusters’ are used when some MCQ are based on an initial paragraph of information.

**EMI/EMQ (Extended matching items/questions)** - are similar to multiple choice questions but test knowledge in a more applied sense. They use one list of options for all questions in a set. EMQ have four components: a theme, an option list, a lead-in statement and at least two item stems.

**Key Feature Problems (KFP)** - are written clinical problems consisting of a clinical case scenario followed by questions aimed at testing clinical decision making by seeking out the critical (key) features of the problem. Answers may be from an option list or written by the candidate.

**Clinical:**

**OSCE (objective structured clinical examination)** - a timed patient-learner clinical encounter with a focus on a predetermined task, usually performed as a series of stations. Students move from one station to the next. The examiner is present and uses a set of criteria to determine a learner’s mark. Variations on this theme include OSVE (objective structured video examination) in which the encounter is video-taped and then assessed.

**Long cases** – a presentation of a patient’s case to examiners after a learner has undertaken a full history and examination. The encounter with the patient may take up to an hour and is not observed. An OSLER (objective structured long case examination record) is a long case that is assessed according to set criteria.

**Workplace-based assessment:**

**Clinical placement assessment tools:**

**Mini-CEX (mini clinical evaluation exercise)** - is a real life episode of care or interaction between a learner and a patient, observed for a short period and rated on a number of technical and professional dimensions on a standard rating form.

**DOPS (direct observation of procedural skills)** – a variation of the Mini-CEX

**Multi-source feedback (360 degree feedback)** – feedback about the learner’s performance from many sources around the learner. Includes a self-assessment component.

**Other:**

**eAssessment or computer-based assessment** – a variation on written assessments, using information technology as the entry point.

**Portfolios** – a collection of information that demonstrates the achievements of a learner, sometimes using particular themes or sections as a guide.

**Logbooks** – a record of clinical encounters kept by the learner to demonstrate the range of their educational experiences.

**Contracts** – agreements between teachers and students on learning activities to be done, evidence of achievement and assessment criteria used.

**Key concepts**

**Criterion referenced assessment:**

is conducted using specified criteria for satisfactory performance, not to the performance of other learners.

**Norm-referenced assessment:**

is conducted with reference to the performance of the students’ peers or cohort to set the standard.
Review

Clinical Education in the Health Professions
edited by Clare Delaney and Elizabeth Molloy (2009) Elsevier Australia

The premise of this book is to assist clinical educators in developing ‘their own teaching methods and styles from a secure theoretical platform that provides relevant principles, direction and support’.

It is divided into three sections – examining knowledge (theoretical perspectives about knowledge construction), sharing knowledge (communities and culture in education) and applying knowledge (teaching and learning practices). The authors of each chapter come from a variety of health professional and academic backgrounds.

Each topic is concluded with a direct link to application in clinical education, providing a solid foundation of theory and practice strategies for clinical teachers.

Find out more

Item Writing Manual: Constructing Written Test Questions for the Basic and Clinical Sciences
(revised 3rd edition)

This free publication from the National Board of Medical Examiners (USA) is a resource for faculty members and others interested in learning how to write better quality test items.

It considers the format and structure of test questions, how to write multiple choice and extended matching questions, and discusses the principles of assessment in general.

Available in English, Spanish and Russian from http://www.nbme.org/publications/index.html

What the literature says...

a quick search of what’s new in recent journals


