

## ■ CHAPTER 1 ■

# Assessment in Medical Education: An Overview

### **“Assessment Drives Learning”**

This classic statement by George E. Miller (1919–1998) encapsulates in a single phrase the central role of assessment in any form of education. Particularly in medical education where the stakes are high, it is impossible to overstate the importance of assessment. Yet, medical schools are some of the most conservative in their choice of assessment methods, eschewing the new and embracing the tried and “tested” instead.

Traditionally, assessment is viewed as a “necessary evil” in the curriculum — an act that we carry out because we have to. We posit that assessment, properly planned and implemented, has a powerful *positive steering effect* on learning and the curriculum. It conveys what we value as important and acts as the most cogent motivator of student learning.

Assessment also fills the gaps in instruction and the curriculum. This is particularly true in large institutions and in the complex system of clinical training. In these settings, students rotate through various hospitals and departments and encounter many teachers. A robust assessment system brings an enforced level of uniformity to the curriculum.

All faculty involved in assessing and teaching students must be aware of the profound influence they have on the education of their charges. It is not the marks they give the students that matter but their choice of assessment methods, implementation, monitoring, and,

above all, the effort they put into the process that truly determine the outcome of our educational system.

It is the duty of academics involved in assessments to be fully cognizant of the instruments available to them as well as the strengths and shortcomings of each. This Practical Guide seeks to give the faculty a better understanding of the principles of assessment, as well as an overview of the assessment methods available.

## **Purpose Driven Assessment**

Assessment, if conducted properly, serves multiple purposes. Some of the purposes of medical student assessment are:

- To determine whether the learning objectives that are set *a priori* are met
- Support of student learning
- Certification and judgment of competency
- Development and evaluation of teaching programs
- Understanding of the learning process
- Predicting future performance

(Amin & Khoo, 2004; Newble, 1998)

Multiple purposes lead to wide ranging implications. One of these implications is that many stakeholders become interested in the results or data generated from the assessment. The areas of interest among the stakeholders also vary.

## Stakeholders and their questions regarding assessment

Stakeholders	Questions	Interest
Medical student	<ul style="list-style-type: none"> <li>• Have I achieved knowledge and competence?</li> <li>• How can I do better?</li> </ul>	<ul style="list-style-type: none"> <li>• Competency judgment</li> <li>• Support of learning</li> </ul>
Medical teacher	<ul style="list-style-type: none"> <li>• How successful was my teaching?</li> <li>• How can I do better?</li> </ul>	<ul style="list-style-type: none"> <li>• Program validation</li> <li>• Program improvement</li> </ul>
Professional body and public (consumer)	<ul style="list-style-type: none"> <li>• Are we producing safe doctors?</li> </ul>	<ul style="list-style-type: none"> <li>• Certification and licensing</li> </ul>
Medical school	<ul style="list-style-type: none"> <li>• Is the money worth spending?</li> <li>• Are we teaching the right things?</li> <li>• Are we teaching in the right way?</li> </ul>	<ul style="list-style-type: none"> <li>• Program justification</li> <li>• Curricular modifications</li> <li>• Curricular improvement</li> </ul>

## What is at Stake?

In designing and planning assessments, it is critical to keep in mind the stakes of the assessment. The purpose of the assessment will determine the stakes. Generally, formative assessments tend to be low stake, continuous assessments of low or medium stake, and summative assessments of medium to high stake.

The higher the stake is, the greater will be the consequences of the outcome of the assessment. Thus, there is a stronger need to ensure that the assessment is fair, reliable, valid, and properly conducted.

**Assessment types and their characteristics**

	<b>Low Stake</b>	<b>Medium Stake</b>	<b>High Stake</b>
Examples	Formative assessment	Continuous assessment (CA), end of posting test; house officer evaluation	Professional examination
Decisions and consequences	Few, easily reversible decisions, low consequence	Decisions can be reversed	Decisions are generally irreversible, consequences high
Developmental effort needed	Low	Medium	High
Quality assurance	Seldom needed	Recommended	Required
Monitoring and implementation	Individual level	Departmental level	Central; faculty or medical school level
Check for validity and reliability	Not routinely required	Recommended	Required

Examples of useful assessment instruments in low stakes examination include long essay questions and “traditional” long case examination. However, their use in high stakes examination is undesirable, as they tend to lack a high degree of reliability and are inherently prone to marking errors. A better strategy for high stakes examinations would be to replace those with more objective assessment instruments such as multiple short answer questions (in place of long essay questions) and objective structured clinical examination (in place of the traditional long case).

Low Stake ExaminationsHigh Stake Examinations

Long essay question	→	Multiple short answer question
Traditional long case	→	Multi-station OSCE

**References and Further Reading**

“Assessment drives learning”

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Purpose driven assessment

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What is at stake?

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