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KEYNOTE LECTURE

Aligning Education and Assessment: Improving Medical Education through Assessment

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"The pupils got it all by heart; and when Examination-time came,
they wrote it down; and the Examiner said,
'Beautiful! What depth!'
They became teachers in their turn, and they said all those things over
again; and their pupils wrote it down, and the Examiner accepted it; and
nobody had the ghost of an idea what it meant"
-Lewis Carroll, 1893

Nearly all levels of medical education and training are currently examining traditional methodologies to assess learner knowledge and competence. Medical science educators are keys to introducing students to the integration of the basic and clinical sciences and to providing relevant, integrated assessments that support the educational outcomes they seek. Perhaps nowhere else is medical education changing as quickly as in the sciences basic to medicine and the assessments we use must accompany that change. The recent report from the Association of American Medical Colleges and the Howard Hughes Medical Institute, "Scientific Foundations for Future Physicians" illustrates this profound change and presents a blueprint of principles, objectives, and competencies and "...represents the beginning of a broad dialogue within the undergraduate and medical education communities to reinvigorate the scientific preparation of physicians."[1] Organizations and countries have defined competencies, in the U.S.: the Medical School Objectives Project (MSOP), the Accreditation Council for Graduate Medical Education (ACGME); in Canada, the CanMeds; and Tomorrow's Doctors in the United Kingdom. While there is no universally accepted definition of "competency", there is general agreement that converges around the idea that competency is the integration of knowledge, skills, and professionalism or attitudes.

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Several of the topics presented at the 2012 International Association of Medical Science Educators conference continued the dialogue on competencies with titles such as, "Developmental Assessment: Core to Competency based Models in Medical Education"; "Competencies in the Pre-Clerkship Curriculum"; and "Competencies for the Medical Sciences Skills for Curricular Transformation." In addition to the need to define and assess competencies in a highly integrated medical school curriculum are other issues facing medical educators today. These include the migration of healthcare professionals; the quantity and the quality of healthcare professionals; the need to create new approaches to educate new types of professionals; the evolution of competency-based education and its concomitant assessment requirements; and the need to respond to international standards of accreditation. As an international organization, the members of IAMSE recognize the need to develop assessment measures that can be considered in different cultures, different countries, and different educational programs. Yet how many medical schools have separate committees for curriculum and assessment? How many medical schools have aligned their educational outcomes with the assessment methods they use? Do the assessments support and advance the educational outcomes or do they, in fact, undermine the goals of the educational program? How many medical school curricula suffer still from the "Diseases of the Curriculum" that Stephen Abrahamson introduced

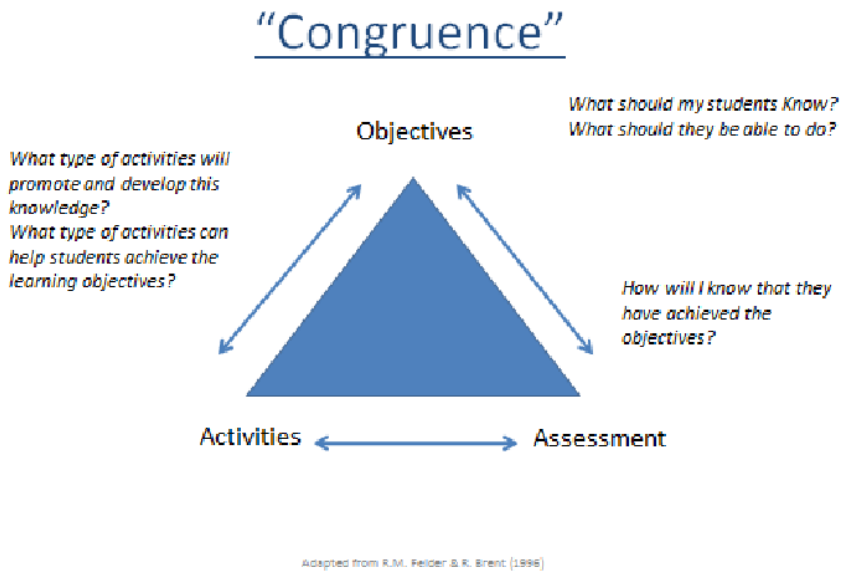
in 1978[2] The adages that have been heard for decades: 'assessment drives the curriculum'; 'we *respect* what we *inspect*'; are said with a shrug of the shoulders.

If we agree that assessment serves many purposes including: feedback to students; setting standards (summative assessment); rank ordering/ benchmarking/grading; motivation for students; quality control for the public; evaluating teaching; and evaluating the curriculum, how might medical science educators approach the challenge of improving medical education through assessment?

Educators can be either promoters or inhibitors. If assessment drives learning, then it follows that GOOD assessment strategy drives GOOD curriculum design. The design of an assessment system can reinforce or augment learning, or undermine learning.[3] What if we were to consider assessment as a form of communication, one that is both public and transparent? What if we approached assessment as a curriculum design problem? Schuwirth and Van der Vleuten suggest applying a systematic, programmatic approach to assessment where assessment is an integrated strategy with governance and quality control. This represents a shift from assessment of learning to assessment for learning. In this approach the assessment is fit for purpose, optimizing learning, and decision making and is embedded in the educational process.[4] In this model, the assessment is designed to capture a great deal of information from various sources to identify the strengths and weaknesses of the individual student in order to optimize their learning. This approach offers one way to better align the educational program and assessment and provides a means of reinforcing learning through good assessment.

An oversimplified approach to this challenge is illustrated here, drawing from the work in engineering of Richard M. Felder and Rebecca Brent (see figure). Given the complex, multi-layered nature of the many constructs and skills in medicine, it is essential to use evolved assessment methods that require learners to demonstrate a meaningful understanding of medical science concepts and the facility to use them in clinical practice.

Ultimately, assessment is all about curriculum development. Successful medical science teaching requires a cadre of well-trained, reflective scientists and clinicians who are supported by their institutions to activate and guide students struggling to learn and master materials. The assessment program will be information-rich, integrated into the educational program oriented to feedback and learning. Ideally, clinically-experienced scientists and physicians will comprise interdisciplinary and interdepartmental teams to achieve this goal with the result that assessment becomes a form of public and transparent communication.



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Keywords

Assessment

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