



Improving People's Lives Through Innovations in Personalized Health Care

Individualized Learning and Assessment

Daniel M Clinchot, MD
Vice Dean for Education
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Objectives

Understand the difference between entrustable professional activity-competency-milestone

Describe an effective approach to individualized learning

Be able to detail a framework for assessment in individualized learning

Understand emerging concepts in flexible and individualized assessment

Definitions

- **Entrustable Professional Activities:** activities requiring integration of knowledge, skills, attitudes and behaviors that are essential for the day to day work of a given profession.
 - These activities typically involve multiple competencies
 - Provide the contextual meaning to the competencies and milestones
 - Enable us to indicate when someone is fit-for-purpose
 - Can be trusted to perform independently



Definitions (cont.)

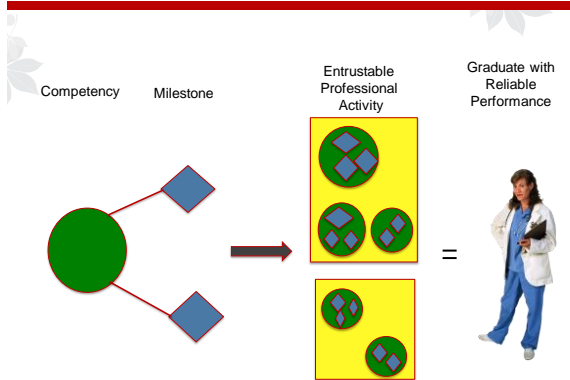
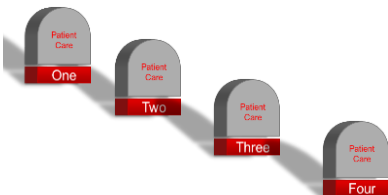
- **Competency:** essential aspect of a discipline required of an individual to function successfully in a given profession.

- Typically require the utilization of abilities associated with multiple milestones



Definitions (cont.)

- **Milestone:** Observable ability that requires the integration of knowledge, skills, attitudes and/or behaviors.



- No matter the definition we need to be able to break our expected learning outcomes from the abstract to the granular:

- So that we can have directly observed behaviors that provide an accurate representation of abilities

Novice → → → Expert

- Provide feedback that informs learner on status of meeting the expectation and facilitates the development of an effective learning strategy
- Provide feedback to the education program so that we are confident in the ability of our graduates to consistently and reliably perform.

Learning Method

- Lecture
 - Podcast
- Facilitated Small Group
- Discussion
- Team Based Learning
- Guided Reading
- e-learning
- MOOC's
- Simulation
- Patient Encounter
- Team Based Learning
- Problem Based Learning
- Project
- Clinical Care

Methods of Assessment



Written Exercise

- Multiple choice, short answer, essay exams
- Key features, Script concordance
- One sentence clinical case summary
- Practical exams

Clinical Performance Assessment

- Global ratings ± comments
- Checklists
- Direct observation
- Oral examination
- Chart stimulated recall

Epstein RM. Assessment in Medical Education. *N Engl J Med* 2007;356:4:387-96

Methods of Assessment (continued)

- Multisource Feedback**
 - Peer, patient, team member and self assessments
- Simulation**
 - Standardized patients
 - OSCE/FOSCE
 - Embedded
 - High-fidelity Human Patient Simulators
- Portfolio**

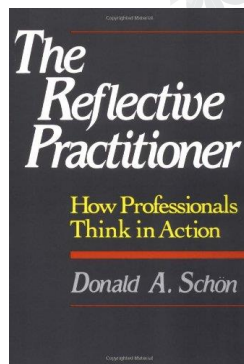


Epstein RM. Assessment in Medical Education. *N Engl J Med* 2007;356:4:387-96

Self-Assessment

Reflection-in-Action
Reflection-on-Action

Schon, D.A. (1983) *The reflective practitioner: How professionals think in action*. New York: Basic Books.



Competency Assessment should serve two distinct functions:

Guide learning by providing specific and detailed feedback

Especially when linked with coaching:

- Informs learner of progress
- Advises learner regarding observed learning needs and resources
- Motivates learners

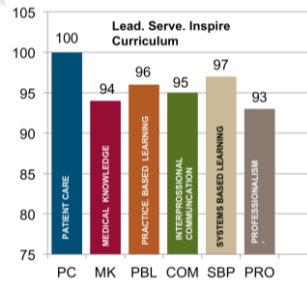
* Adapted from Norcini J, Burch V. Workplace-based assessment as an educational tool. *AMEE Guide No. 31. Medical Teacher* 2007;29:855-871

Competency Assessment should serve two distinct functions (cont)

Provide an accurate representation of a learner's knowledge skills attitudes and/or behaviors

Both the individual assessment and assessment paradigm and how they are interpreted reflect an accurate representation of a learners performance and taken together predict consistency

% Students Meeting Expected Competency Milestones



- Competencies are non-compensatory
- Faculty set the standards
- Adjustments made in accordance with outcome data

Learning Models

- Novice
- Advanced Beginner
- Competent
- Proficient
- Expert
- Master
- *Practical Wisdom*
- Does
- Shows
- Knows How
- Knows
- Reporter
- Interpreter
- Manager
- Educator

Dreyfus H.L. (2001) *Thinking in Action*. London: Routledge

Miller G.E. (1990). *The assessment of clinical skills competence and performance*. *Academic Medicine*, 64(9):S63-7 .

Pangaro LN. (1999). *Evaluating Professional Growth: A new vocabulary and other innovations for improving descriptive evaluations of students*. *Academic Medicine*, 74(11):1203-7 .

	Best used to assess				Strengths				
	Attitudes	Knowledge	Skills	Performance	Low cost	Appropriate for formative assessment	Accepted as summative assessment	Objective	Learner-centered
Rating forms	Y	Y	Y	Y	Y	Y	Y	N	N
Self-assessment	Y	Y	Y	Y	Y	Y	N	N	Y
Essays/journals	Y	Y	N	N	Y	Y	N	N	Y
Written or computer-based constructed response tests	N	Y	N	N	Y	N	Y	Y	N
Oral exams	Y	Y	N	N	N	Y	Y	N	Y
Direct observation including OSCEs	N	N	Y	Y	N	Y	Y	N	N

Recommended uses and strengths of common assessment methods.

Hicks P. (2011) *Assessment Methods*. In *Assessment in Graduate Medical Education: A Primer for Pediatric Program Directors* (pp19) Chapel Hill, NC: American Board of Pediatrics

	Novice	Advanced Beginner	Competent	Proficient	Expert	Master
Educator						
Manager						
Interpreter		A				
Reporter	B	C				

■ Knows
 ■ Knows How
 ■ Shows
 ■ Does

Corbett EC et al., (2008) *AAMC Recommendations for Clinical Skills Curricula for Undergraduate Medical Education*(pp8) AAMC.

Considerations for Choosing Assessments

Does the instrument measure what we want it to measure. *Is it valid?*

Minimize threats to validity

- Maximize number of observations
- Blueprinting
- Assure reliability
- Describe actual behaviors in addition to or instead of Likert scales.

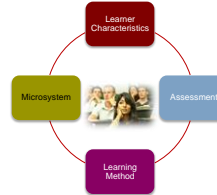
How It All Fits Together



Learning Analytics

Collecting analyzing and utilizing data regarding learner contexts in order to optimize learning and the environment in which learning occurs.

For example understand the correlation with learning methods and performance in association with learner characteristics.



Competency Domain	Competency Based Objectives	Milestones	Learning Methods
Patient Care	Independently collects and reports clinical information from a medical history	Independently collects and reports clinical information from an obtained medical history	Guided Reading
			Observation of Preceptor in Longitudinal Practice
			Chart Review and report in a Simulated Experience
		Independently collects and reports clinical information obtained from a medical record	Guided Reading
			Small Group Tutorial Talking a history and presenting patient in Simulated Experience
			Small Group Tutorial e-learning module

Competency Domain	Competency Based Objectives	Milestones	Assessment Method(s)
Patient Care	Independently collects and reports clinical information from a medical history	Independently collects and reports clinical information from an obtained medical history	Direct Observation of Skill Objective Structured Clinical Examination
		Independently collects and reports clinical information obtained from a medical record	Objective Structured Clinical Examination
		Independently collects and reports medical history as evidenced through accurate documentation in the medical record	Chart Reviews-10

Curricular Component

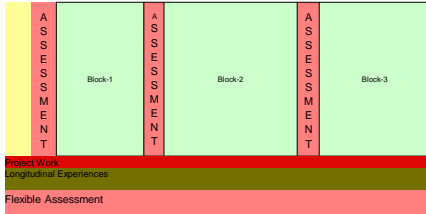
Competency Domain	Objectives	Learning Methods	Formative Assessment(s)	Summative Assessment(s)
Patient Care				
Medical Knowledge and Skills				
Practice-Based & Life Long Learning				
Interpersonal Communications				
Systems-Based Practice				
Professionalism				

Flexible Assessments

Case Study: Independent Study Pathway

- Expected Summative Assessment Date
 - Date the average student should be able to successfully pass assessment
- Maximum Summative Assessment Date
 - The last date by which student should be able to successfully pass assessment and keep within 4 year curricular time.

How realistic is it to have flexible assessments?



Flexible Assessment

Flexible and individualized learning is usually associated with inflexible assessment.

Key features of flexible and individualized assessment

- Faculty still set the standards and expected outcomes
- Learner has greater control over assessments to learner
- Equity and fairness among learners
- Coaching to help guide the student

Wood LN, Smith GH. *Flexible Assessment*. University of Technology Sydney, NSW (pp229-233)

Competency Domain	Competency Based Objectives	Milestones	Assessment Methods
Patient Care	Independently collects and reports clinical information from a medical history	Independently collects and reports clinical information from an obtained medical history	Direct Observation: OSCE
			Direct Observation: Clinic
			Video Diary
		Independently collects and reports clinical information obtained from a medical record	Direct Observation: OSCE
			Peer Observation
			Video Diary
		Independently collects and reports medical history as evidenced through accurate documentation in the medical record	Direct Observation: OSCE
			Comparison with expert clinician documentation on same patient

Summary

- Expected educational product should guide the development of required competencies
- Flexible competencies can enhance customization based on student goals
- Coaching is essential throughout the process so that students effectively learn how to self assess, set learning goals and implement effective learning strategies
- Assessment needs to be both formative and summative in order to guide student learning
- Assessment programs need to be effectively evaluated to ensure that we are measuring what we need to measure to ensure that our stated outcomes are reliable