ASSESSMENT OF COMPETENCY AND PERSONALIZED LEARNING SYSTEMS

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The business of schools is to invent tasks, activities, and assignments that the students find engaging and that bring them into ***profound interactions with content and processes*** *they will need to master to be judged* ***well educated***[1].

What is a competency?

Competencies are the knowledge, skills, and/or behaviors students must master in a specific content or performance area. Q.E.D. Foundation

So what's the difference between competencies and standards and does it matter in terms of assessment? If so, how? Why?

What are the assessment characteristics that support competency-based learning systems?

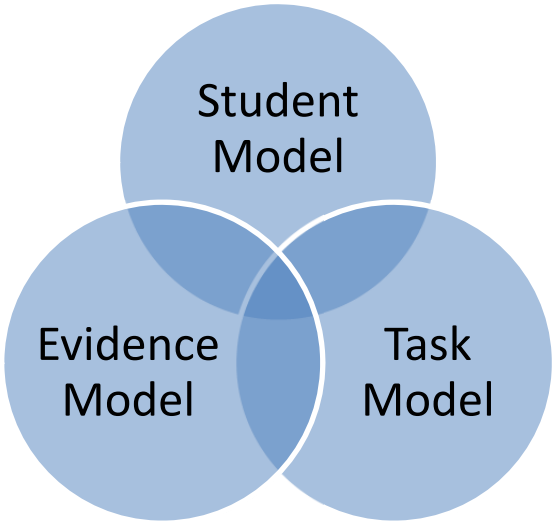
In a competency-based system, like in a traditional education system, assessments have a variety of uses such as to inform instruction, diagnose student needs and communicate student progress and outcomes to families and broader communities. Assessment in competency-based systems must be designed to support determinations of students' proficiency or mastery of competencies, standards or other major learning targets.

- ✓ Allow students to demonstrate their learning at their own *point of readiness*
- ✓ *Contribute to student learning* by encouraging students to apply and extend their knowledge
- ✓ Require students to actually *demonstrate* their learning
- ✓ Where possible, provide flexibility in *how* students demonstrate their learning (e.g. through a presentation, research paper or video)

[1] Schlechty, P.C. (2001) *Shaking up the schoolhouse*. San Francisco: Jossey-Bass.

Design Considerations for Assessments of Competency and Personalized Learning

We can rely on advances in measurement theory and practice over the last 20 years with the development of principled approaches to assessment design, especially Evidence Centered Design (ECD). This approach works well with all sorts of assessment design including assessments of CBE. The key tenets of ECD involve the specification of a student model, evidence model, and task model.



Some issues with assessments in competency-based systems

Scaffolding—what is the role of the teacher or other adult in guiding the student toward competency?

Whose work is it (group)? In many extended projects and tasks, having students work in groups for all or part of the task is both efficient and educational. However, the task and scoring rubrics must be designed to allow for understanding the contributions of each of the individuals in the group.

Generalizability—How much evidence does it take for you to believe that the student truly is competent? In other words, what amount and what type of evidence are **sufficient** to support your claims?

How can we design **assessment systems** to address these and other challenges necessary for supporting CBE determinations?

It Comes Down to Validity

Issues of sufficiency, generalizability, and other technical quality considerations should be incorporated into a validity argument. Michael Kane's framework has proved quite useful for thinking about the validity of a CBE system.

Inference	Applied to Competency-Based Education
Scoring: From observed performance to the observed score	Does the design of a specific test or task, including the scoring rules applied (e.g., rubric), lead to accurate inferences regarding student performance on the learning target (e.g., competency or component of the competency)?
Generalization: From the observed score to the universe score	Each task or set of test items is theoretically drawn from an infinite set of possible tasks and test items. While it not a truly infinite set, we know that any task/item is only one of a set an enormous number of possible items and tasks from the "universe" of tasks/items. The question then is about the degree to which the items/tasks on the test generalize to all possible items/tasks measuring the specific learning target(s).
Extrapolation: From the universe score to the target score	This is an especially important inference for CBP systems. Competencies are purposefully subsets of the full domain of interest (e.g., biology), so it is critical to be able to substantiate that the set of competencies either represent the domain (i.e., the "target") adequately—in a sampling sense—or represent the most essential elements of the domain so that the student will have critical and useable knowledge for use at some future time.
Decision: From the target score to the evaluative determination	CBP systems are being designed and implemented to make determinations about whether or not a student is "competent" enough to either move on in a learning progression (very low stakes) or, at the other end of the continuum, to graduate from high school or achieve certification (high stakes). The lower stakes decision might not require collecting the evidence necessary to support the decision inference, because one would not be making claims about the target score at this point. On the other hand, such evidence is necessary for higher stakes decisions such as graduation or certification.