Faculty Workshop White Paper: Expanding Learner Choices

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Types of Assessment

The purpose of assessment in post-secondary courses varies, as well. Assessments are often designed to gather student data that will yield information about accountability, student progress, and instruction.

- **Accountability:** Assessing student performance with respect to job preparation, prerequisites, and university or college program goals
- **Student Progress:** Assessing changes in student performance over time as a result of instruction (assessment of learning)
- **Instruction:** Probing student responses to instruction in order to optimize the course of learning (assessment for learning)

Assessment is used in courses to determine how well students are meeting goals that have been set (e.g., goals around job performance, goals around changes in knowledge). Measurable outcomes from assessments should be comparable with or benchmarked against set course goals. Assessment outcomes, in turn, should inform further instruction.

Assessing Variable Learners

Provision of options within the design of both formative and summative assessment helps to ensure that all learners can act on new information and demonstrate what they know. This requires a distribution of the demands and benefits of any one kind of assessment among all students. For example, students with Attention Deficit Disorder (ADD) may have issues with working memory that would make long multiple-choice assessments challenging.

If this is the only way students are assessed in a course, students with working-memory challenges will have more demands and fewer benefits when it comes to assessment. If writing long responses to text passages is the only option for assessment, students who are not native English speakers will have more demands and fewer benefits, especially if they do not have access to aids such as glossaries or dictionaries, or if there is time pressure to respond.

In sum, greater attention must be paid to learner variability in the design of assessments. Further, consideration needs to be given to embedded design features in digital assessments (such as text-to-speech capability, availability of key word definitions, hints or coaching tips, etc.) so that assessments support students that vary in terms of their strengths, weaknesses, and learning needs.

Construct Relevance

Assessments are designed to measure knowledge, skills, and abilities. Constructs are the knowledge, skills or abilities being measured by an assessment. By their nature, however, most assessments include features that are not relevant to the construct being assessed. Often the methods and materials used in assessments require additional skills and understanding. These are considered to be *construct irrelevant*. Construct-irrelevant features of assessments may pose barriers for some students, preventing an accurate measurement of the construct.

Assessment Examples	Construct-Irrelevant Factors
Math assessment via word problems to assess students' understanding of math concepts.	The ability to read fluently is construct irrelevant. Even though it is an important skill, it is not part of the construct being measured. Learners who have difficulty with reading may miss certain items even though they may have a good grasp of the underlying math concepts.
Essay exam in a biology class that is both timed and closed-book.	Construct-irrelevant factors include motor coordination (handwriting or typing skills), short-term and working memory, organization and time management, attention, and the ability to work under pressure. The additional measurement of these many factors can prevent gaining an accurate picture of a student's content knowledge of biology.

Minimizing construct-irrelevant factors does not lessen the rigor of assessments, but instead gives a more accurate picture of what learners are actually learning in terms of the knowledge, skills, and abilities identified in the course goals. Having an accurate picture of student learning is particularly important for formative assessments, where results can be used to revise instruction as a course progresses. Minimizing construct-irrelevant factors helps to focus in on where students are actually struggling with content, skills, or abilities that the assessment is meant to measure.

It is important to consider construct relevance when creating assessments. For example:

- Supports can be provided to reduce the measurement of construct-irrelevant factors, such as providing text-to-speech so that reading ability is not being measured in an assessment of content knowledge in mathematics.
- Students can be provided with options for how they demonstrate what they know, such as presenting a project either through an open-book essay or an oral presentation.
- When construct irrelevance cannot be avoided, such as when administering a standardized test that has not been designed with attention to construct relevance, it is important that the instructor is aware of learners for whom there may be barriers and how it would impact their performance. The demands and benefits of any one form of assessment will differ depending upon who is taking it.

By providing supports and options around how to demonstrate knowledge, and by developing awareness of what barriers different forms of assessment create for different students, faculty members and designers can better distribute the demands and benefits of any one form of assessment among all learners.

Provide Multiple Means of Action and Expression

Providing multiple means of action and expression (the *how* of learning) means providing different ways for students to work with information and content and to demonstrate what they are learning. In assessment, consider the ways in which students will demonstrate what they have learned.

- Will they need to write or draw?
- Will they demonstrate an action?
- Do they need to organize information mentally, or can something be provided to help them organize the information (e.g., concept mapping software)?

Again, consider which actions are actually relevant to the construct being measured and which ones can be supported or varied in order to gain an accurate picture of what each student has learned.

When applying UDL principles to assessment, it can be helpful to consider first where there might be barriers that would impact the performance of some learners. Below are examples of barriers and some options for minimizing them. Keep in mind that constructs can be assessed in many ways, and the goal is to minimize factors that are construct-irrelevant.

Possible Barriers	Assessment Options
Assessments that have a single response mode (asking learners to draw diagrams for every answer)	The demands associated with responding to any assessment are not always construct relevant. In other words, if the goal of the assessment is to understand the processes involved in cell division, then asking the learner to write an essay and grading the construction of the essay may not be relevant to the task of understanding that the learner really needed to know. Supporting strategic and organizational abilities and allowing students to express knowledge and skills in diverse ways can be built into various assessments.
Using the same format for response for all assessments (using only multiple choice, written response)	Options for an assignment on identifying barriers to economic expansion in post-World-War-II Europe could include an essay, PowerPoint presentation, video, or infographic to achieve the same goal. Demonstrating understanding of text can be expressed by students choosing keepers (items from the text the learner finds important and relevant) and generating queries (questions created by the learner to be answered later) about the content. These can be expressed in written or verbal form, in a group or alone.

Examples in a Mathematics Course

There are many ways to apply the guidelines of UDL within assessment in a specific course. Below are just a few specific examples that could help to address barriers for some students.

Provide options for physical actions.

- Provide open-book quizzes.
- During quizzes and tests completed individually, provide scheduled breaks so students can communicate with each other and their instructor in order to become unstuck while working on complex equations and problem solving. For example, during tests, one math instructor writes some complex equations on whiteboards. During a ten-minute break, students can opt to approach a problem and talk through their thinking in order to progress to the next step in the activity.

Provide options for expression and communication.

- Allow for small group work.
- Use a computer program, such as software for creating drawings, to demonstrate lesson goals and objectives.

Provide options for executive functions.

- Allow students to take a video of themselves solving a problem and talking through their thought processes.
- Provide a choice of mathematical problems for students to complete to demonstrate mastery of a learning objective.

(adapted from http://udloncampus.cast.org/page/assessment_udl)