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Conversations in Course Design

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Introduction

Instructional design is “the systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources and evaluation” (Smith & Ragan, 2005, p.4). Educators are instructional designers. We develop curricula, engineer courses, and determine how our students learn best. This CITEL white paper will cover relevant course design principles including, designing courses with the Backward Design model, distinguishing between instructional objectives and learning outcomes, writing effective learning outcomes with the ABCD method, and achieving proper course alignment. The purpose of this white paper is to create a dialogue about these course design topics so that we can begin to think about course design in innovative ways. Additional resources have been hyperlinked throughout the paper for independent exploration of these topics.

Course Design Principles

Certain situational factors can affect our initial approach to course design. For instance, we need to consider instructional modality and content delivery mechanisms. Additionally, we should consider interactional engagement in the course. How will we provide student-to-student, student-to-content, and student-to-instructor engagement in the course? Finally, and perhaps more importantly, we must consider the audience. What do we know about how students learn the topic best?

While we must consider these details, a well-designed course should start first with well-written learning outcomes. Wiggins and McTighe’s Backward Design Model (as shown in Figure 1) depicts this backward approach to course design.

This model suggests that course design begins with identifying the desired results. The next step is to determine acceptable evidence. The last step is to plan experiences and instruction. In other words, according to Wiggins and McTighe (2005), course design begins with the lofty ideas and skills students should gain from the course, the big vision...or the learning outcomes.

Learning outcomes and instructional objectives are often considered to be interchangeable terms but distinguishing between these two terms provides a better understanding of effective course design. [Iowa State University’s Center for Excellence in Learning and Teaching](#) suggests that learning outcomes are

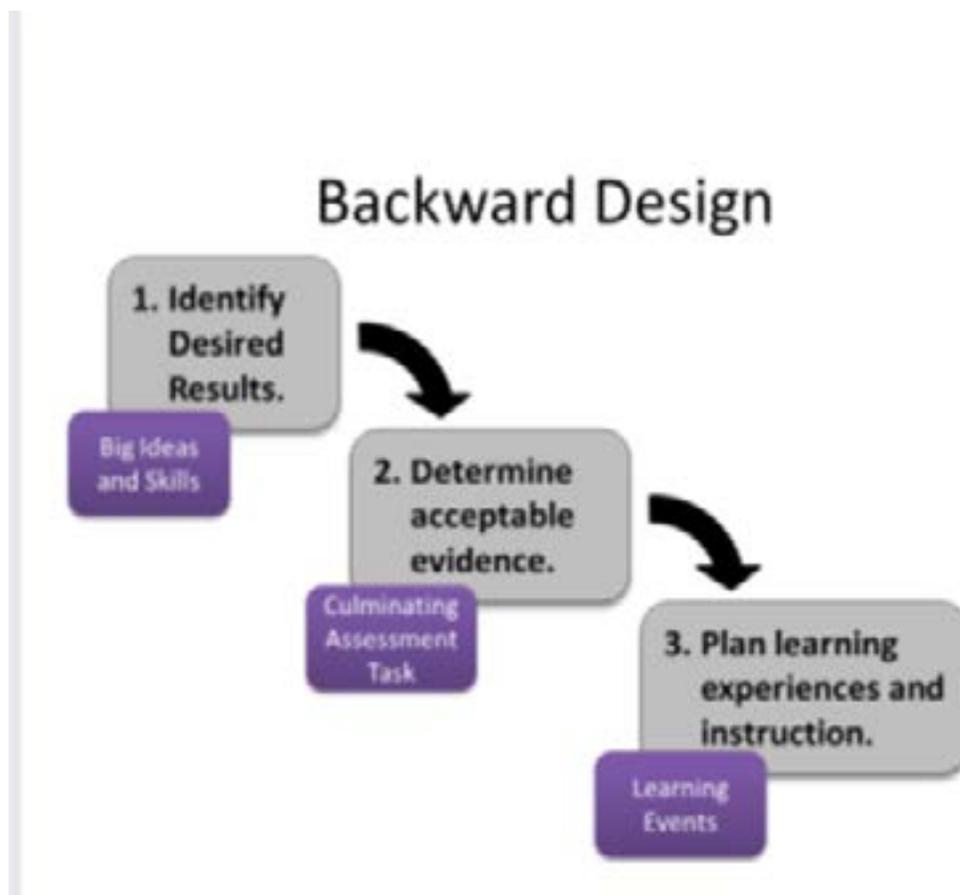


Figure 1: The Backward Design Model

Note: From (Wiggins, G., & McTighe, J., 2005).

the big vision for the course. Instructional objectives, on the other hand, are the steps necessary to get there. Instructional objectives are specific knowledge or skills, attained within a brief period, and written from an instructor's perspective. Quite simply, instructional objectives are the instructor's goals for the lesson. An example of an instructional objective could be:

After this lesson, students will be able to define intrinsic and extrinsic motivation according to the textbook.

Given this is an instructional objective covered in a single class, assessment could be accomplished through a quick write or a ticket- out- the- door activity.

Learning outcomes are “generally expressed in terms of knowledge, understandings, skills, dispositions, or values that students will have attained by the end of the specified course” (Gallagher, 2012, p.44). Learning outcomes measure

the knowledge and skills students should acquire by completing the course. An example of a learning outcome could be:

At the end of this course, students will be able to apply the scientific method to correctly solve three out of five problems.

A final exam requiring students to apply the scientific method to solve a specific number of problems could be an appropriate assessment of this learning outcome.

Harden (2002) states that learning outcomes should be intuitive and user-friendly. Learning outcomes do not address all the content that we desire to teach; rather, learning outcomes should address essential knowledge. Learning outcomes are usually one sentence in length and should be clear and concise. There should be an average of five or six learning outcomes, with no more than ten learning outcomes associated with one course.

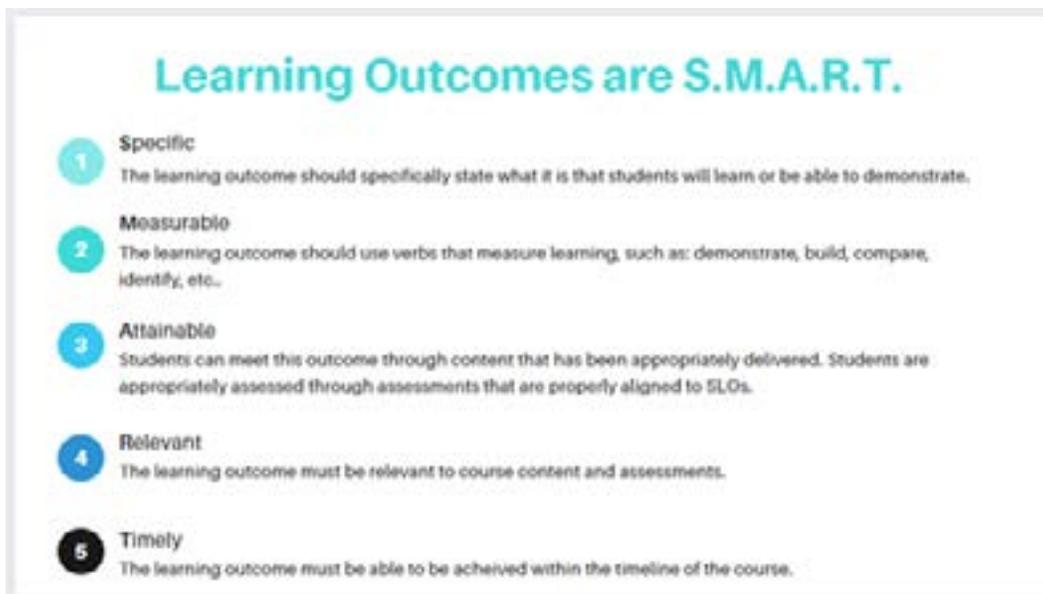


Figure 2 Learning Outcomes are S.M.A.R.T.

Learning outcomes should use a framework of higher-order outcomes, such as Bloom's Taxonomy, and should broadly describe what students will attain at the end of the course (Harden, 2002). Learning outcomes should be specific, measurable, attainable, relevant, and timely (see Figure 2).

(informing students of what they will learn in a course) enables students to better gauge the value of what they are learning. Proper course alignment also creates relevance, an ever-important course design consideration as more than two-thirds of the high school students surveyed in a recent poll indicated that higher education is not worth the cost (Lederman, 2021).

Designing for Relevance

Gallagher (2012) makes interesting points about relevant course design. First, Gallagher (2012) argues that we should engage students in the process of creating and assessing learning outcomes. For our courses to be relevant, we need to understand what it is that students want (or need) to take away from our courses. Indeed, there is an opportunity to provide students with a mechanism to make the course meaningful beyond our curricular objectives. For instance, are there learning outcomes that we need to develop that would better situate the course within the current learning environment and/or career market? Moreover, could instructors and students co-create one or two learning outcomes to increase course relevancy?

Gallagher (2012) also argues that we should track learning beyond expressed learning outcomes. Gallagher (2012) warns that there is the risk of compartmentalizing learning by relying solely on learning outcomes to assess learning:

teachers may dutifully reproduce those outcomes on a syllabus or assignment, and students may dutifully provide evidence that they've achieved them in their work products, but rarely do the outcomes become a meaningful and intimate part of teachers' and students' experiences (p. 45).

Meaningful and *intimate* are two important concepts about course relevancy that we can borrow from Gallagher (2012). We need to ask students about the serendipitous, special, or spectacular things that they learned that they were not expecting to learn in our courses. Perchance students' responses could help us to better capture the essence of the course and reveal the organic learning that takes place outside of our desired learning outcomes.

Twenty-first century instructional designers will need to consider quality course design and relevance when redesigning courses. So, is it time that we allow students to have agency in course design? Can we conceivably create innovative, relevant, rhizomatic, and cross-disciplinary courses that meet our general education learning outcomes to develop independent thought and imagination, and preparation for lifelong learning (Reinhardt 2019)?

*A rhizome has no beginning or end...like the learning process...
the syllabus becomes a garden space, a context setting within
which learning can happen and the curriculum is the things
that grow there... (Cormier, 2011).*

Conclusion

In summary, a well-designed course begins with learning outcomes that are specific, measurable, attainable, relevant, and timely. Well-written learning outcomes should connect all other course elements to create alignment. Proper course alignment coupled with transparent teaching practices allows students to clearly understand course expectations. Establishing clear course expectations increases relevance. Drawing on these fundamentals of good course design principles, CITEL encourages us to continue the conversation beyond this white paper. Let us continue to discuss quality course design principles while also making room for innovative course design approaches that prepare our students for 21st-century problems.

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