7 Innovative Approaches to Course Design

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The pandemic-driven switch to remote learning alerted many faculty members to the importance of course design. In an online course, keeping students on track requires clarity and structure; it also demands that instructors think intentionally about how to motivate and engage students, prompt interaction, and assess student learning without the crutch of in-person proctoring.

One can only hope that the pandemic is nearing its end, and hope, too, that the budding concern with course design will persist.

So let me take this opportunity to discuss seven innovative learning- and learner-centered approaches to course design that seek to encourage student participation, critical thinking, and metacognition and reflexivity, and promote social-emotional development.

First, let's look at three approaches that dominate course design today.

The standard approach to course design, which I suspect all instructors have used at one time or another, is to compile and arrange a list of topics that one wants to cover.

A topical approach offers a number of advantages: it's easy; all one has to do is glance at how other faculty have organized similar classes and copy or modify their syllabi. This approach also ensures content coverage, and, if done well, a logical and progressive topical sequence.

A topical approach that emphasizes content, coverage and information transfer is, of course, out of step with the times -- even when it is supplemented with video, animations, online tutorials and interactive problem sets.

Most campuses now expect instructors to specify a series of measurable learning objectives that spell out the knowledge and skills students are expected to acquire and be able to demonstrate.

Supplanting the topical approach are two common alternatives:

1. Backward Design

Backward design offers the simplest way to ensure that a course has clearly specified learning objectives. Just plan backward to move forward.

The guiding principle is to begin with the end in mind. Start by specifying the outcomes that you want your students to attain, and then design a sequence of activities that will help students acquire the understandings and competencies you seek, then create assessments that measure whether your class members have met your learning goals.

But backward design isn't a panacea. For one thing, specifying learning objectives with the proper level of precision ain't easy. It's really hard to come up with measurable learning objectives that aren't too simple or too complex, too narrow or too broad, and, above all, too numerous. After all, for the design process to be truly successful, it has to achieve a level of granularity that isn't practical.

But there's a deeper problem. Backward design doesn't sufficiently take into account a basic fact: students differ. An approach that might work for one class might well be inappropriate for another. Teaching requires a degree of improvisation, adaptation and personalization that backward design doesn't accommodate well.

Our desired outcomes may well remain fixed, but our teaching strategies often need to change. After all, there isn't one path to heaven.

2. Learner-Centered Course Design

An alternative to backward design is an approach that begins not with the outcomes but with an analysis of the learners, their needs, characteristics, expectations and prior knowledge, and the constraints on learning (for example, the amount of time that learners can reasonably be expected to devote to the course).

ADDIE is an example of learner-centered course design. After analyzing the learners and their needs, this instructional design approach the desired learning outcomes and the best ways of delivering instruction. It is then followed by design, development, implementation and evaluation phases.

A learner-centered, student-focused approach certainly makes sense. But this approach also has its own weaknesses. It places a heavy burden on the instructor, who must develop activities aligned with the students' needs and interests, which almost certainly vary widely. After all, your students differ radically in their level of preparation, learning goals, motivation and level of engagement.

So what, then, are the alternatives to backward design and learner-centered design? Here are seven innovative approaches that you might consider as you design or redesign your courses.

Approach 1: An Inquiry-Based Approach

An inquiry-based approach to course design transforms students into investigators or detectives and helps them develop the ability to formulate meaningful questions, solve problems, interpret data and other forms of evidence, and participate in the creation of knowledge.

The inquiry approach that I want to suggest is not simply designed around questions, like when and why slavery arrived in England's New World colonies. Rather, it embraces the basic insights of postmodern or critical theory.

This approach seeks to problematize master narratives, interrogate facts that are too often considered unproblematic, and strive to understand multiple perspectives and realities depending on how an individual is positioned or situated. This approach encourages students to repeatedly ask: What do we know and how do we know that?

When informed by the insights of postmodernism, the inquiry approach helps students understand the way that knowledge is constructed and how seemingly settled conclusions are contested and revised.

Inquiry can, of course, be structured and guided or open, individual or collaborative. It can confirm what is already known or be more open-ended and original. Regardless, this approach places students at the center of the learning process, it foregrounds research skills and higher-order thinking skills, and it helps students achieve conceptual understanding.

Approach 2: A Case Study-Based Approach

A case study approach organizes a class around a series of crises, pivotal episodes or incidents, critical junctures, legal cases, and other real-world scenarios where the students can study the decision-making process, the societal or professional response to a dilemma, past precedents for current events, societal and cultural change over time, and shifts in public concerns or values or in scientific understanding.

Student engagement in authentic problem solving is one of the strengths of this approach. Well-chosen cases can [2] bring a topic to life, foster active student involvement in their own learning, encourage discussion and debate, and help students develop their critical thinking skills.

Approach 3: A Decoding the Discipline Approach

This approach introduces students to the methods, skills and interpretive techniques used by scholars in a particular field of study. This methodological and skills-based approach might, for example, familiarize students with how experts within a discipline collect and analyze data; understand causality; interpret a graph, a text, a document or another piece of evidence; or understand various social, biological or psychological processes.

Approach 4: An Interdisciplinary, Team-Taught Approach

It's odd: most of the topics that absorb serious intellectual attention bridge disciplines -- think childhood, conflict resolution, the environment and sustainability, health care, human rights, and social inequality. Yet the overwhelming majority of courses are taught by a lone scholar from a distinct disciplinary vantage point.

Might it not make sense to offer more courses that integrate multidisciplinary perspectives or that closely and intentionally link cross-disciplinary viewpoints and methodologies? This is precisely what Georgetown has done with its Core Pathways, in which students take seven-week modules from different disciplinary lenses on the world's great challenges, such as climate change and humanity and technology. UCLA's cluster program does something similar as interdisciplinary faculty teams explore pressing issues of our time.

Approach 5: A Gamified Approach

Gamification can take diverse forms. There is serious gaming, video games in which the goal is not entertainment but education, practice and skills development. There are role-playing games, like *Reacting to the Past*. There are also simulations and immersive virtual environments.

The elements that make game playing so alluring can also be integrated into course design. These typically include points, achievement levels, interaction, competition and instant feedback. I have seen this approach in action, and to quote Lincoln Steffens in a very different context, "I have seen the future, and it works."

Approach 6: A Policy-Oriented Approach

A variant on problem-based teaching, a policy-oriented approach systematically addresses policy design and delivery. Students undertake policy research, data analysis, policy planning and formulation, policy implementation, and policy assessment. This approach almost inevitably leads students to understand the technical, political and organizational barriers to change, theories of change and the role of stakeholders in policy decisions.

Approach 7: A Project-Based Approach

A project-based approach substitutes process and product or performance for outcomes. This "show us what you know" approach assesses student learning not by homework or quizzes or exams or response or research papers, but rather authentically: by a tangible result, typically a capstone project or presentation or exhibition or recital that must meet certain standards.

Scaffolding is key to the success of project-based learning. Vague direction and oversight are insufficient. A project needs to unfold in stages with clear deadlines, guidance and frequent feedback.

As my colleague Michael Rutter points out, at schools like MIT experiential, project-based learning has now become the norm. It means that by junior year, most students at those schools have become quasi-graduate students. I think it makes good sense for talented students to work on meaningful projects, and not just over the summer.

In practice, you do not need to adopt a single approach. A Franken-course approach, which combines various models, often makes sense.

Let me conclude by urging you to think outside your comfort zone and integrate one or more of these course design strategies into your classes. I am convinced that today's students need something different from the approaches that have long dominated the curriculum.

Our students need a learning-centered education that places a greater emphasis on technical, research and soft skills and on social and emotional development, and that fosters greater interaction with faculty and classmates.

Students need this kind of education not simply as preparation for the job market, but because our society has a desperate need for engaged citizens who have the ability to conduct research, evaluate information, bring skeptical intelligence and ethical awareness to bear on topics of public interest, and reach reasoned judgments grounded in evidence.

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