Design Thinking

Scenario

The small liberal arts college that Tim attends will be reinstituting a course last taught in 1962 called Civic and Social Competencies. The team responsible for developing the curriculum will use a technique called design thinking, and they are recruiting participants from many groups, including students, faculty, a course designer, and members of the administrative staff. To begin the process, Dr. Franklin, a design thinking facilitator, defines the goal of the course by explaining that students will understand their civic and social responsibilities and how to fulfill them.

The team begins by looking at the previous curriculum to see what they should keep. The old curriculum includes field trips to traffic and criminal court, a perusal of city hall records, a trip to a stationer's shop, and a visit to a funeral home. Is there anything they should keep? The students like the idea of a class that meets at off-campus venues some of the time but wonder what a stationer's visit is. When they learn that it used to complement a section on letter-writing etiquette, they suggest looking at social media etiquette instead.

The students decide court visits might be useful, but they are unsure about the city hall records until they learn this is where to find and verify birth, death, marriage, property ownership, estate, and other records. The students work with the course designer to build a game in which teams must find clues in public data, some of which are online and some of which students must request at city hall. As students suggest other field trips, Tim recommends including some kind of community outreach and perhaps a session working the polls at an election.

After seven meetings, during which Tim learns the difference between a jury and a grand jury and a few excellent reasons to consult a lawyer or accountant, he's ready to sign up for the prototype course built by the design team. He'll need to hurry, however, as the slots are going fast.

1 What is it?

Design thinking is a structured approach for human-centered, creative problem solving. With its emphasis on empathy, creativity, and comprehensive evaluation, the approach has caught the imagination of many in higher education. Design thinking follows an interdisciplinary and collaborative approach where disparate perspectives are encouraged. The humanist element encourages viewing problems from every angle, with a strong focus on the needs of the people who will use the solution. The result has been some surprising and innovative solutions that range from a museum-based learning game designed by undergraduates at Michigan State University to a design for technical education in low-cost private schools in Hyderabad, India.

2 How does it work?

The intent of design thinking is for participants to learn their way into a solution. The first step is to listen to and observe stakeholders to see the problem from their position. Participants try to understand conditions thoroughly enough to define a problem and brainstorm creative ideas. Prototypes of one or more solutions are then built and tested. The prototypes might be in the form of a sketch or exist as a partially functioning mockup in a computer application; they could be built of sticks, cardboard, and string, or they might consist of functional, hold-in-the-hand products ready for testing. A feedback step completes the cycle. The various stages within the cycle can be iterated as necessary in that a prototype or test might result in the identification of a more fundamental problem that must be addressed. The process is supported by a philosophy of doing rather than just thinking and discussing, relying heavily on rapid prototyping followed by testing to ensure fast turnaround of a functional product or process.

3 Who's doing it?

At Stanford University's Hasso Plattner Institute of Design, also known as the d.school, **faculty and students from divergent backgrounds meet in an immersive, experiential learning environment where they build creative**

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solutions to real-world problems. Based on design thinking, the courses and curriculum draw tools, approaches, and participants from a wide range of disciplines, including medicine, fine arts, engineering, education, law, social sciences, business, and design. Their stated focus is "on creating innovators rather than any particular innovation." In 2010, consultants from IDEO, which specializes in design thinking, were hired to create a network of top-quality private schools in Peru; one of the goals was that tuition be no more than $100/month. The team interviewed students, teachers, parents, and investors to learn about classroom setup, teaching approaches, and business goals. Then they invited the stakeholders to rethink curriculum, physical space design, and the business model. The resulting Innova Schools use blended learning in a flexible physical space where walls can be adjusted to the room size needed. There are 23 such schools today, a number expected to double in the next three years. Tuition remains at $100/month.

4 Why is it significant?

Education challenges tend to be complex and rarely have a single solution. **Design thinking addresses such issues with a thoroughly evaluative approach,** which is particularly useful for multi-domain problems such as curriculum development, learning space design, and mixed-method teaching solutions. The energy of several people from diverse backgrounds focused on defining questions and posing potential answers can give creative confidence to a committee, infusing participants and the process with greater vitality, more ideas, and stronger potential for a successful solution.

5 What are the downsides?

Design thinking can fall prey to issues that plague other methodologies. Unless those in charge keep participants engaged and productive, a session can focus on complaints at the expense of generating solutions. Brainstorming can produce so many attractive ideas that it is difficult to pare them down, and facilitators may need to intervene to stop excessive tinkering. The focus on the end user can run aground if the group doesn't agree which stakeholder they should focus on. Design thinking depends on including the right mix of participants: leaders with authority to act, individuals who can brainstorm with verve, and people who can work together effectively. As an approach that rewards taking risks, design thinking depends on testing to sort what is viable from what is not. But a laboratory test is not the real world, and participants should understand that what is presented via a model or sketch is not always what works well in practice. Moreover, design thinking might be ineffective in organizations that are in the midst of a difficult transition or where trust among participants is low.

6 Where is it going?

Colleges and universities have begun to use design thinking for a range of problems, including institutional initiatives such as curriculum redesign. As an evaluation tool, the approach has the potential to effect changes across the education ecosystem. Design thinking, which has the potential to benefit instruction in a broad array of fields, may prove particularly suitable for higher education, where redesign efforts must cope with institutional boundaries and cultural decisions. Faculty and designers may integrate it into the curriculum wherever makerspaces and innovation laboratories exist. Students may use it in courses where they design physical objects, engage in innovative thinking, or complete projects with a concrete deliverable.

7 What are the implications for teaching and learning?

Design thinking has been making its way into the higher education curriculum where it is being taught as a learning and development tool at places such as Harvard Business School, the University of Kentucky's dLab, (the Laboratory on Design Thinking in Education), and Parsons The New School for Design. It offers a sandbox for idea generation and allows students to think beyond what they have been told, to gather data via interviews, to work respectfully with others to analyze the data, and to take risks to find solutions. Design thinking can reduce the fear of failure for students and others, particularly for individuals who believe that work must be complete before it is reviewed. Design thinking, by contrast, posits that early failure leads to better outcomes. **Students are challenged to embrace rapid prototyping, present multiple ideas, and test each one.** This shift from testing students to having students test their work demonstrates how iterative review can help refine products, processes, and projects. Design thinking also offers a strong focus on collaborative effort and mutual respect for the ideas of others. Finally, students and faculty alike may discover the classroom to be a more engaging and livelier place where rapid innovation is the norm and students are encouraged to try things, try them fast, and move on to new ideas.