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How Design Thinking Became a Buzzword at School

The trendy concept is in high demand among educators, but its specifics are vague.

The end result of a design-thinking project is often a tangible product, such as a model city or a robot.

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JESSICA LAHEY | JAN 4, 2017 | EDUCATION

At a recent teaching conference in Richmond, Virginia, a session on "design thinking" in education drew a capacity crowd. Two middle-school teachers demonstrated how they had used the concept to plan and execute an urban-design project in which students were asked to develop a hypothetical city or town given factors such as population, geography, the environment, and financial resources.

The teachers in the audience were enchanted by the details of the project; and if the photographs in the presentation were any indication, the students who participated in the lesson enjoyed it, too. The presenting teachers were bubbling over with enthusiasm for what they saw as the potential inherent in teaching design thinking.

Many of the teachers in attendance were flummoxed, however. As we filed out of the room and headed toward our next sessions, I overheard one woman remark to another that while the urban-design project looked like something she'd like to try in her own classroom, "I think I missed something. I still don't understand what design thinking *is*. Do you?" The other teacher shook her head and said, "I think it's a curriculum, but I'm not really sure."

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Confusion around the precise definition of design thinking is understandable, said Neil Stevenson, the executive portfolio director at IDEO Chicago, one of the best-known purveyors of design thinking. "Design thinking isn't one thing," he told me in a phone interview, "but a bundle of mindsets and

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philosophies all wrapped up in one term, which obviously has the potential to lead to ambiguity and misunderstanding."

While Stevenson spent plenty of time talking around a definition —explaining mindsets, the nature of creativity, and the evolution of design—even convincing him to offer a brief definition proved difficult. Finally, Stevenson outlined what he sees as the foundational aspects of design thinking as it relates to educators:

First, he emphasized, design thinking starts with empathy. When designing anything meant to be used by another person—whether that's a lesson, curriculum, classroom layout, or an imaginary city—the designer must understand what that person (an "end-user," in design lingo) needs. In the case of the urban-design project, for example, the students can't just design a pretty building; they must think about the needs of the people who will live there, as well as the available resources, the budget, and the impact that building will have on the surrounding landscape. "The design-thinking philosophy requires the designer to put his or her ego to the side and seek to meet the unmet needs, both rational and emotional, of the user," Stevenson explained.

"When their perfect idea fails, they fall apart."

Once the student designers have gathered all their research together, they must organize and make sense of it all. Again, in the case of the urban-planning project, after the students have gathered interviews and research

about the needs of their city's future residents, students must figure out what to do with all that information. If, for example, the future residents' top priorities include affordability and opulence, the student designer is going to have to find a way to integrate the residents' conflicting needs.

Finally, design thinking requires designers to generate ideas—lots of ideas—and prototype them. In order for this part of the process to work, students and teachers must be comfortable with failure. For many students, particularly those who want to look smart, this phase can be frustrating. "People tend to come up with an idea early on, and know that this idea is it, the perfect idea, and get emotionally invested in that one thing. Then, when their perfect idea fails, they fall apart," Stevenson said. Design thinking forces students to keep their minds open, to try out lots of ideas early in the process before they let their egos or emotions get too invested in just one.

There will be a time to put spitballing aside, of course. Once ideas have been prototyped and tested, students begin to work toward one effective, final solution—an end product that can be assessed, presented, displayed, or put to work in their classroom or community. The beauty of the design process, proponents say, is that the value of the experience does not lie solely in the end product. Learning happens throughout the process, from the early research phase to the final presentation. This allows students and teachers to focus on what's most important in learning: the process, rather than the product.

One scene from the film *Apollo 13* provides a great illustration of the design-thinking process. After Apollo 13 is crippled by an explosion, the astronauts are stranded in the lunar module. The air filters in the lunar module are failing, so the engineers at NASA must find a way to make a square filter fit into a round hole using only the materials available to the astronauts. The engineers find a solution through design thinking: by understanding the needs and resources of the astronauts, organizing the resources available on

the lunar module, then working together to develop and prototype many ideas. The ultimate solution may not have been pretty, but it was creative and it was effective. Their design saved the lives of the Apollo 13 astronauts.

This sort of step-by-step, formulaic approach to creative problem-solving was revolutionary and counterintuitive when it was first developed in reaction to the launch of Sputnik in 1957. When Russia leapfrogged ahead of the rest of the world in the space race, the U.S. needed to respond with a rapid and radical acceleration in technological innovation. The process of design thinking emerged as an effort to encourage all scientists—even the least creative, most inflexible thinkers—to be novel, brave, and innovative in their problem-solving.

Historically, creativity has been portrayed as a mysterious, elusive force—a gift from the gods or the muses. Creativity can't be summoned, the thinking goes, let alone taught to the mentally inflexible, unimaginative, muse-less masses. Design thinking upends that perception and assumes that anyone can be a creative problem-solver.

At its best, design thinking incorporates proven-effective teaching techniques such as self-directed inquiry and collaborative problem-solving, and dovetails nicely with social-emotional learning curricula that emphasize interpersonal skills such as collaboration and empathy. And the end result of a design-thinking project is often a tangible product, such as a model city, a robot, or a better mousetrap. It's no surprise, then, that many educators are eager to adopt design thinking as a way to plan their own teaching and as a strategy for helping their students learn through solving real-world problems.

The popularity of design thinking, however, might be precisely what's contributing to the confusion I witnessed in Virginia, says Stevenson:

> It's been extremely gratifying for all of us practicing design to see the ideas taken on by so many people. There's a downside, though, which is that when something becomes popular, now suddenly everyone wants to learn it and lots and lots of people will spring up and teach it. For the sake of communication, we tend to define design thinking as A followed by B followed by C, but in doing this, we are guilty of oversimplifying.

As teachers seek to learn more about design thinking and its application in their classrooms, conference sessions and certificate programs have emerged to accommodate demand. Stanford's D-School and IDEO offer two popular courses, but there are many flavors, colors, and brands of design thinking for educators to choose from.

In other words, the lack of a clear definition makes explaining, evaluating, and studying design thinking a challenge. And some teachers at that conference in Virginia—myself included—were skeptical, and attended the design-thinking session to better understand whether the concept is actually an effective learning strategy or simply another education trend gone viral despite scant objective data regarding its effectiveness for learning.

Mindsets, grit, and design thinking are all victims of their own massive popularity.

When executed with a clear understanding of its purpose as a method for fostering empathy, creativity, and innovation, design thinking can be a powerful tool for learning and change. If it is hastily and inexpertly implemented by educators with a weak or incomplete understanding of its principles, however, it is likely to be a waste of energy and precious classroom time.

Design thinking, like Carol Dweck's work on fixed and growth mindsets and Angela Duckworth's research on grit, are best understood in context, as a complex and nuanced approach to learning rather than a checklist of executable tasks. Dweck was so alarmed by the rampant oversimplification of fixed and growth mindsets that she wrote an article for *Edutopia* to clear up common misconceptions about her work. Just as Dweck's work can't be conveyed adequately in a Life Hack infographic, and Duckworth's research is apt to be misunderstood when reduced to a listicle, design thinking seems likely to fail as an educational tool when communicated in terms of "Five Simple Steps."

Mindsets, grit, and design thinking are all victims of their own massive popularity, and in the rush to incorporate these concepts into existing lesson plans, have sometimes been reduced to checklist items on teachers' overcrowded to-do lists. When treated as a classroom culture, however, rather than an action, design thinking (as well as mindset and grit) may revolutionize the way teachers and students think about failure, creative problem-solving, and teamwork.

Ultimately, design thinking is not a curriculum, advocates like Stevenson say, but a process for problem-solving, a strategy to elicit creativity rooted in empathy and comfort with failure. Teachers can use design thinking to create a classroom layout that conforms to the needs of their students, they say, or to plan lessons that will work best for the students in a given school or classroom. Entire school districts are embracing design thinking to create

spaces and curricula around the intellectual and emotional needs of their students. Teachers are also helping students use design thinking to apply what they've learned to real-world problems, such as the urban-design project described by those middle-school teachers in Virginia.

While there is not a lot of data to support any particular brand of design thinking as an effective teaching or learning strategy, the key elements of design thinking will be familiar to any teacher well-versed in the basics of effective teaching: start with empathy, move ego to the side, and support students in the process of failing often and early on their way to learning.

ABOUT THE AUTHOR

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