Leading Information Technology via Design Thinking

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Abstract

Design thinking is a solution-finding process that offers a user-centric approach to find new, previously nonexistent solutions to persistent challenges people face in the adoption and implementation of IT. This chapter explains what design thinking is, why it would be of use to leaders of IT, and how to put it into practice in the leadership of IT.

Keywords

Design thinking · Human centered design · IT · Instructional technology · School technology leadership · Leadership · Schools · Schooling · Principals · Leadership

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What Is Design Thinking?

Some call design thinking a creative problem-solving process (Liedtka et al. 2013). I think calling it a solution-finding approach is more accurate. IT leaders who practice design thinking are able to find new, previously nonexistent solutions to persistent challenges they face in the adoption and implementation of IT, and the solutions which they develop tend to stick. This is because design thinking is a process that integrates three key tenets of innovation success: "what is desirable from a human point of view with what is technologically feasible and economically viable" (Brown 2009, p. 3). It's an appealing approach as it represents a set of tools which can be applied to a vast array of problems (Brown, 2011).

While there are several flavors of design thinking discussed in the literature (Boland and Collopy 2004; Brown 2009; Hasso Plattner Institute for Design 2010; Liedtka and Ogilvie 2011; Meinel and Leifer 2011), all have some central common features. For illustrative purposes, we'll draw on an approach advocated by the Hasso Plattner Institute for Design (2010). The tenets are:

Empathize. Empathy is the foundation of design thinking (Hasso Plattner Institute for Design 2010). Design thinking is a process focusing on creating solutions for others. Thus, you must have an empathetic understanding of the needs of the people for whom you are serving (IDEO 2015). For instance, it may be the case that integrating IT is a policy imperative in a school, but the manner in which you unveil that process can be greatly enhanced by involving students and teachers in the process because they are, ultimately, the users of the change.

Define. To define is to use the empathy you gain from the previous phase and craft an actionable problem statement. Once one understands the needs of the users who will be impacted by your initiative, you must define, from the user's point of view, the precise challenge your initiative is supposed to solve. Say you are interested in integrating IT into instruction in your district. And suppose other neighboring school districts have implemented a one-to-one laptop program. Do you just jump on their bandwagon? No. Implementing a strategy in the same fashion as it's done in other districts doesn't mean it will meet the needs of your stakeholders. Therefore, you should define the problem regarding what you hope for and what could work for your stakeholders. This leads to an actionable problem statement upon which you can brainstorm, or ideate, solutions. For instance, "How might we enhance students' success at finding and solving complex problems in social studies and science through integration of technology."

Brainstorm. To ideate is to brainstorm. It's the portion of the design thinking process wherein a great many ideas are developed to address the specific need you defined in the previous step.

Prototype. Once you have a feasible idea that seems worth trying, the next step is to create a prototype of the idea so users can play with it. The main benefit of creating a prototype is to provide a situation where you can fail quickly and cheaply. Testing the prototype of a curriculum idea, or an online learning environment with, say, one class over a week's time will tell you if users like it, whether it's feasible, etc., without investing a lot of time and money up front.

Test. Testing tells you if your prototype was on the right track. It also tells you more about the intended users of your design. By testing a prototype of a curriculum or instructional technology, you are offered another chance to build empathy for your users' needs by observing them in context.

Why Is Design Thinking a Tool Leaders Should Consider for Implementation of IT in Schools?

The leaders of modern primary and secondary schools tend to emanate from graduate programs of educational leadership which imbue them with a level of professional expertise. The results are a double-edged sword. On one edge, their expertise and knowledge of the field are vastly expanded. However, as Hess (2013) notes, this can create a cadre of decision makers who are thought-constricted in that "those who have spent their career immersed in the rhythms of any profession come to regard its policies, practices, culture and routines as givens" (p. xiii). The way IT is integrated into schooling is no exception. There are too many educational leaders who come into their position believing there is only one solution to every problem. Leaders who fall into this camp possess, according to Boland and Collopy (2004), a decision attitude. Such leaders:

- Believe there only exist a finite set of alternative solutions to problems, mostly provided by outsiders (other schools, vendors, the literature)
- Assume it is easy to come up with alternatives to consider, but difficult to choose among them
- Assume that the alternative courses of action are ready at hand
- Are lulled into the belief that there is a good set of options already available, or at least readily obtainable
- Are trapped in a role as a passive decision maker, making the untenable assumption that the alternatives presented in advance include the best possible alternatives

Contrast this with leaders who describe as having a design attitude (Boland and Collopy 2004). These kinds of leaders:

- Work with stakeholders to develop custom solutions that are not known at the start
- Are concerned with finding the best answer possible, given the skills, time, and resources of the team
- Develop alternatives for local conditions, thus decisions about which alternative to select become trivial
- Take for granted that the initiative will require the invention of new alternatives
- Know that their stakeholders are best suited to say what their needs are and options are created based on those needs

- Are active designers of a team of decision makers who help develop alternatives that have not yet been thought of and are usually better

In essence, design thinking can add value to the way IT is adopted and integrated into students' learning by broadening the spectrum of possible solutions that are both more innovative and more tailored to student needs.

How Might School Leaders Incorporate Design Thinking into Their Leadership Practices?

What follows is an approach for how leaders can use of design thinking to support thoughtful school-wide adoption or implementation and classroom integration of IT. Since 2010, I have applied the tenets of design thinking to challenges faced by school leaders which fall into a broad category of student agency and IT. The idea of this effort is as follows: school leaders empathize with students (from all grade levels) to better understand their lives, and treat them as partners in the policy process, to better adopt and integrate IT for learning. This involves two things IT leaders rarely do:

1. Taking the time to empathize with students
2. Treat students as trusted partners in the policy planning and implementation process

Finding ways to empathize with students doesn't take as long as leaders may fear, but it goes beyond the hackneyed approach of student sounding boards principals tout, often comprised of safe, high-performing college bound students (Holdsworth 2000; Thomson and Holdsworth 2003). This involves purposeful selection of students from the margins, high and low, along with equally purposeful dialogue designed to elicit information which leads to unique and workable solutions to tricky challenges, like getting IT right.

Let me summarize how we do it, and I'll point you to a handout you can use to try it yourself:

1. Block out about two and a half hours on a particular day.
2. Identify around a dozen students to interview, picking firstly from the edges, or extremes. Therefore, one-third of the students you select should be on the high side of the continuum you're concerned with. These might be students who "fit the mold" or are typically thought of as being "ideal" for school. Then, one-third should be from the other extreme – those who may not always be a "fit" for school, or who struggle (or rebel) for one reason or another. Lastly, one-third should be from somewhere in between ("average" students). Then select a set of teachers and administrators who will interview the students. Create design teams

of three to four adults who are joined by one to two students (say, six to ten teams).

3. Conduct empathetic interviews with the students. There are many ways to gain empathy with another person, and a good way to do is by having a good conversation. I use a framework developed by IDEO (2011) called "Open Specific, Go Broad, Probe Deep." Interviews take between 20–40 min.

4. Unpack what was said during the interview and prove to the students you heard them. In this phase, the adult interviewers take a few moments, in the presence of the students, to unpack what they heard and restate it to the student interviewees. The students indicate whether the interviewers "got it right."

5. Codesign the problem. At this stage, the students become full members of the design team, or "codesigners." Participatory codesign is a technique which enhances the likelihood solutions will stick by leveraging the insider knowledge of the user (in this case, the students). As a team, the members define the precise challenges that should be solved, based on constraints posed by the organization and the new empathetic understanding of the users.

6. *Brainstorm*. Using the challenge statement created in the previous step, usually framed as a "How might we..." question, team members develop scores of potential solutions in a matter of minutes. I press teams to develop 50 ideas in 6 min.

7. *Prototype*. Based on how fruitful the brainstorm was, teams harvest the brainstorm for one or two key ideas they'd like to prototype. Teams develop something to show the group, be it a model, storyboard, role play, or diagram.

8. *Get feedback*. The most promising prototypes are "shopped around" the school by teams asking for feedback from a broader set of stakeholders. The information obtained is used to improve the prototype and inform a decision on whether to take it to scale.

Try It Out

Here is a link to my workbook, "Improving School Tech with Student Agency via Design Thinking," which describes the steps above and includes interview questions and team tips: http://dlab.us/it-designthinking.

Conclusion

IT solutions for teaching and learning have been a part of education for decades, and as a staple of schooling will likely remain a steady future investment. School leaders should seek a strong return on such an investment, in terms of both cost and student learning. Partnering with students, teachers, and others as codesigners, through design thinking, can lead to IT implementations which are more desirable, feasible, and viable.

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