Design Thinking Crash Course

(Material adapted from the d.school)

The design thinking crash course is the ideal way to start off the CS+Social Good program after the ~30 minute introductory day. It’s designed as a 60 minute introduction during the first 2 classes to introduce students to the concepts of design thinking before they implement their own projects. Broadly, it introduces students to the *process* of design thinking and gives students an idea of the big picture of what they’re doing so they better understand each individual step.

In the crash course, they’ll be applying the design thinking process to a specific task. In our case, it is: **redesign the school backpack experience**. You will guide students through the steps of the design thinking process, using the [slides](https://drive.google.com/open?id=1WppVziw3Kv-XV4_brwlOs1eoC8PzkFKWjVa0tI1aWtU) as brief instructional material and the [worksheet](https://docs.google.com/document/d/1gIbeDdAX1SFfyW41x8tK0dfFQRW9_6xaxkjp1Oifjlk/edit?usp=sharing) for students to structure their thoughts. Below is a thorough explanation of how to teach the different components and what to focus on.

Intro: 3 minutes

* Hopefully, you’ve already briefly introduced the design thinking project on the first day when you introduced the program. In this intro, explain that you’ll be doing a full crash course so students can see the big picture of the process, then lay out the task for this design thinking session.

Step 1: Empathy - 2 minute slide + 10 minute activity

* This is the initial step of the design thinking process - it centers around students deeply understanding the communities they wish to help. It is important to stress that **students do not enter the empathy process with any preconceptions about the community.** Remind students that *they* ***should not*** *already have an idea in mind*. The goal is to understand the other person with no preconceived notions, and use the other person’s descriptions to guide what you create.
* Activity: Put students in pairs and have them conduct interviews with each other. The prompting question should be “How can the school backpack experience be optimized?”
* **Good Interview tips:** a good interviewer shouldn’t ask questions that have yes/no answers. They should be open ended. Interviewers should search for stories - these are typically where you get interesting findings. The interviewer should let the interviewee inspire the conversation’s direction. Ask follow up questions about the things the interviewee shows an interest or passion in.

Step 2: Define - 2 minute slide + 3 minute activity

* Defining is possibly the hardest part of the design thinking process, and sounds deceptively simple. It is about students taking what they learned in their interviews to **define a specific problem** that their interviewee faced. This step is about specificity and narrowness; although many problems may have come up, students should think and narrow down their choices to one problem. Students should not be thinking about approaches during this time. Be careful to make sure students are defining problems based on what they heard in interviews, and not their own projections of what they think the other person’s problems are.
* Activity: Students will have 3 minutes to write a clear definition of the issue their partner is facing

Step 3: Ideate - 2 minute slide + 5 minute activity

* This step allows students to identify many possible solutions to the problem defined in the step above. Students should be encouraged to come up with as many ideas as possible. Encourage students to write down ideas that they know are silly as well, because getting those ideas out fuels creativity and may make it easier to find the more reasonable ideas.
* Activity: Students will have 5 minutes to think of ideas, write them down on post-it notes which they can place on their desks

Step 4: Prototype - 2 minute slide + 10 minute activity

* Iterative development is key -- and prototyping allows for this. Students will begin by creating a rough prototype that they will soon validate with their users. This initial prototype is a sketched out (with no worry about artistic quality) version of their idea.
* For instance, if students are thinking of creating an app or website, encourage them to draw out the user interface.
* Activity: Give students 2 minute to choose their best idea. Encourage them to think about which one is most feasible, impactful, and creative. Allow them to use the remaining time to create a paper prototype of their chosen solution.

Step 5: Test - 2 minute slide + 10 minute activity

* A critical part of development for people is to go back to your users to see if you actually addressed their problems. This step allows students to test their prototype by showing it to whomever they interviewed and using this feedback to improve their prototype
* Activity: Student pairs will have 10 minutes (5 minutes each) to show their partner their paper prototypes and get feedback on how they can be improved.

Conclusion: Redux - 10 minutes

* Debrief! Talk for ten minutes with your students (or more) about what they thought? Is there anything they noticed or want to share? Anything you noticed?

Additional Teaching Resources

* Many of our resources are adapted from the Design School at Stanford University. Check them out for supplementary teaching resources!
* <https://dschool.stanford.edu/resources/gear-up-how-to-kick-off-a-crash-course> (check out the links for facilitators and the videos)
* <https://designthinkingforeducators.com/>
* <https://web.stanford.edu/group/redlab/cgi-bin/publications_resources.php>
* https://tll.gse.harvard.edu/design-thinking