Lesson 4: User Centered Design Try and Reflect

Overview

Question of the Day: How can we design a product to meet a user's needs?

This is the second part of a two-day lesson where students are guided through an abbreviated version of the design process they will be seeing throughout this unit. Yesterday students completed the Define and Prepare steps of the design process. Today, they complete the Try and Reflect portions. Students continue their work from yesterday by designing a piece of smart clothing, using the specific needs and concerns they brainstormed to guide their decision making. Students have a chance to share their decision-making process and get feedback on how well their product addresses the user needs they selected.

Purpose

This micro activity is the first of three design projects in this unit. It is a fast-paced introduction to the user-centered design process, intended to give students an experience with user-centered design that they can build on in later projects. In this lesson the primary goal is to align the design of a product to the needs of the user, sometimes setting aside personal beliefs or preferences. The act of basing decisions around a user rather than yourself is a key mindset that appears throughout the unit.

The activity in this lesson is an adaptation of the **Design Charrette from the University of Washington**.

Assessment Opportunities

1. **Analyze and select the most appropriate strategies to meet user needs.**

   Activity: Students should present justification for how their chosen strategy meets the user need.

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- **CS** - Computing Systems

Objectives

Students will be able to:

- Analyze and select the most appropriate strategies to meet user needs.

Preparation

- Return the activity guide from yesterday to students
- Make copies of the Try & Reflect activity guide - one for each group

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the teachers

- **CSD Unit 4 - The Design Process** - Slides

For the students

- **User Centered Design (Try & Reflect) 2021** - Activity Guide

▶ **IC** - Impacts of Computing

Agenda

Warm Up (5 minutes)
- **Journal**

Activity (35 minutes)
- **Try**
- **Reflect**

Wrap Up (5 minutes)
- **Journal**

Teaching Guide

Warm Up (5 minutes)

Distribute: As students enter the classroom, redistribute the activity guides from yesterday. If a student was absent, have them join an existing group and use the same user, needs, and solutions as that group.

Journal

Prompt: Look at your activity guide from yesterday and list out:

- The user you are designing for
- Their specific need or interest
- Your chosen solution to their need

Then write down an idea for a specific type of smart clothing you could design based on your solution.

Discuss: Allow students a minute to remind themselves of their work yesterday. Once they've written these notes in their journal, ask them to take turns sharing this information with their groups from yesterday.

Discussion Goal

Goal: This is a quick refresher of the work that students did yesterday and an opportunity to share different product ideas before making a decision as a group in the first part of the activity.

Remarks

> There are a lot of different users and needs that we're designing for. Today, we'll complete the Try and Reflect stages of this activity. Your group will have a chance to design your own smart clothing product for your user, and share your ideas with the class.

Question of the Day: How can we design a product to meet a user's needs?

Activity (35 minutes)

Teaching Tip

Smart Clothing Research: If students are unfamiliar with smart clothing, encourage them to use the internet to do some initial research first on how smart clothing works or has been used to solve problems. They should steer away from trying to find an existing smart clothing product that meets their user's needs, but they can still investigate common uses for smart clothing if they're unfamiliar.

Distribute: The User Centered Design (Try & Reflect) Activity Guide to each group. If available, also distribute poster paper to each group.

User Centered Design (Try & Reflect)

Try

Overview: Read the overview as a class to ensure students understand the activity. Lean into the role-playing aspect of this project, encouraging students to imagine they have all the resources they need to complete this task.

Assign Roles: Have students assign roles - a scribe, an artist, a timekeeper, and a presenter. Ensure students are clear on their roles and assignments during this task.

Do This: Students should work together to design a smart clothing product to meet the needs of their users. They can use their discussion during the warm-up to help guide this process. They should also create a sketch of how the design could look, with arrows and labels to help communicate how the product functions. The artist can draw their product either on the activity guide or the poster paper provided. See the included Exemplar for an example of what students may end up creating. Give students a time limit and ensure the timekeeper in each group is aware of it.

Circulate: Monitor students as they work through the Try stage, checking in that the user needs are guiding the decisions for their product. If needed, remind students to "get in the head" of their user similar to the Understanding Your User lesson.

Remarks

> I've seen some really creative products while checking in with you all, and I'm excited for you to share your ideas with each other! This is the final step of the design process - sharing your ideas, getting feedback, and reflecting on what your next steps are.

Reflect

Do This: Have students answer the questions on the second page of the activity guide and be prepared to share the results with their peers.

Circulate: Check in with students as they summarize their thoughts on this reflection guide. As students answer these questions, they may decide to make last-minute changes to their product.

Share Out: Have groups take turns sharing out the products they designed. They should be sure to share their intended user and their needs, and how the product addresses those needs. When they finish, encourage other groups to give feedback in the form of "I like..." and "I wish... statements.

Wrap Up (5 minutes)

Journal

Prompt: What was one challenge in designing a product for someone other than yourself? What was

one activity from today or yesterday that made this challenge easier?

Discussion Goal

Goal: Answers will vary, especially if students are still learning to empathize with users other than themselves. Encourage students to see how brainstorming and collaborating with their peers can be helpful in generating ideas and thinking outside of their own experiences.