Lesson 6: Feedback and Testing

Overview

Question of the Day: How can we use feedback to improve an app?

In this lesson, students use feedback from "users" of the paper-prototyped app from the previous lesson in order to develop improvements to the user interface of that paper prototype. The lesson begins with a reflection on the fact that designers need to translate human needs with technology into changes to the user interface or experience. Students are then given a collection of feedback and requests from users of the app from the previous lesson. In groups students categorize the feedback and identify ways the needs expressed in the feedback could be met by changes to the interface of the app. Then in groups students will implement some of these changes to meet one of the needs they identified.

Purpose

This lesson introduces several skills that students will need to use later in the unit. They will learn to categorize feedback in order to organize and prioritize their response. They learn to interpret human needs with a piece of technology in terms of the changes to the user interface. They have their first opportunity to create a paper prototype of their own by designing a new screen of an app. As students move towards designing apps of their own from scratch these will be important skills that students use repeatedly.

Assessment Opportunities

1. **Categorize and prioritize user feedback for an app**
2. **Use feedback to create a plan for further development of an app**

   Activity Guide, page 1: The table should have several suggestions for improvement to the app that clearly relate to the feedback categories the students have identified.

3. **Create a paper prototype for the screens of an app**

   Activity Guide: The screen sketches should reflect the app improvements identified on the first page of the guide.

Objectives

Students will be able to:

- Categorize and prioritize user feedback for an app
- Improve a screen design based on user feedback.
- Use feedback to create a plan for further development of an app

Preparation

- Either print one copy of the User Interface Screens resource for each group, or be prepared to display the screens at the front of the classroom
- Print one copy of the Prototype Feedback resource for each group. If possible, cut into strips ahead of time
- Print one copy of Improve a Screen for each group. If possible, print single-sided so students can divy up the activity guide.
- Colored pencils or markers for the paper prototypes

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

- **Improve a Screen** - Activity Guide
- **Prototype Feedback** - Resource
- **User Interface Screens** - Resource

Standards

Full Course Alignment

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- **AP** - Algorithms & Programming
- **IC** - Impacts of Computing

Agenda

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

Activity (35 minutes)
- **Prototype Feedback**
- **Responding to Feedback**

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

Teaching Guide

Warm Up (5 minutes)

Journal

Prompt: Think about a piece of software (like an app) that was hard to use. Maybe you couldn't find something you needed, it was poorly organized, or just difficult to use. What specifically didn't you like about it? How could it have been improved?

Discuss: Students should silently write down their ideas. Then move to a full class discussion of the types of issues students have had with apps in the past. Direct conversation towards what specifically about the user interface or user experience of the app was lacking, and follow up by asking how those aspects of the app could be improved.

Discussion Goal

Goal: Explore how many of the issues we have when using an app can be solved with changes to the user interface. This is primarily a brainstorm and a way for students to make personal connections between the apps they use every day and the activity we'll complete in class to help improve an app's design and user interface.

Remarks

> I heard lots of good examples of how apps could be improved to be more accessible and meet our needs. This type of feedback would be incredibly valuable to the makers of these apps so they could improve them. In today's activity, we're going to take a look at some feedback from the app we explored yesterday and see how we can improve the user interface based on this feedback.

Question of the Day: How can we use feedback to improve an app?

Activity (35 minutes)

Prototype Feedback

Group: Place students in groups of 2 or 3

Distribute: Give each group of students a copy of the Prototype Feedback slips of paper. If possible, try to have these cut out ahead of time - otherwise, give students time to cut these out in class. You should also either distribute copies of the User Interface Screens resource or display them on the screen.

Teaching Tip

Reducing Printed Materials

The Prototype Feedback and User Interface screens can be reused, as long as students don't write on them. The User Interface Screens should already be printed from the previous lesson.

The Activity Guide can be completed online or as a journal activity. Students who complete the activity online may choose to use an online drawing tool to sketch the improved user interface or submit the sketch separately on paper.

Do This: Students should work in groups to create piles of slips of paper so that each pile is a category of feedback. Categories should correspond with similar needs or problems that the feedback is addressing. For example, several pieces of feedback might all be about the fact that the font is too small to read. As they categorize the feedback, they should also discuss which categories they would like to focus on and why.

Circulate: Monitor student progress, asking groups to explain how they are forming their categories. There's no correct grouping of feedback here, but students should be prepared to justify their categories. Prompt students to explain which categories they have chosen as most important to address and why.

Share: Once all groups have categorized their feedback ask for a few suggestions of the types of categories they created.

Responding to Feedback

Distribute: A copy of the Improve a Screen Activity Guide to each group. Each group only needs one copy to share between students.

Improve a Screen

Potential Improvements

Do This: As a group, students take the feedback that they categorized and propose some potential improvements to the app. Each proposed improvement should be clearly connected to one of the feedback categories that were created in the last activity.

Teaching Tip

Choosing Improvements: Students may need help brainstorming good improvements to their apps. For example, if multiple users are complaining about small text then they could try to increase the size of the font on the screen they are improving. They might also choose to add a "text size" setting in their "Settings" page. There are always many improvements to an app that might have the desired effect. For this lesson it is more important that the change reasonably addresses the need they chose. There will be more opportunities to investigate what is realistic to change in an app's UI later in the unit.

Circulate: Monitor students as they work in their groups, ensuring that all voices are heard within the groups and clarifying any questions.

Screen Redesign

Do This: Each student will draw an improved version of one of the screens in the paper prototype app. The activity guide contains one page for each screen of the app for the group to divvy up. If possible, print the activity guide single-sided so it is easier for students to divide up the screens.

Share: Ask one student from each group to briefly present the screen that they have updated. Ask them to describe specifically

- The category of needs they chose to address
- Different ways they considered to address those needs
- The changes to the user interface they designed to address those needs

Wrap Up (5 minutes)

Journal

Prompt: Display the Problem Solving Process. Where do you think User Feedback fits in the problem solving process? What do you think is the next-step after gathering user feedback?

Discuss: Have students write a response in their journal, then discuss with their neighbors. If time, have a full group discussion relating user feedback to the problem solving process.

Discussion Goal

Goal: Students should gravitate towards placing user feedback in the Reflect or Try stages of the problem solving process. Try to guide the conversation towards what next-steps could be, emphasizing that the diagram has arrows going in both directions. Being flexible with this process is important when developing an app to meet user's needs.

For example, if user feedback is in the Reflect stage, then you can move backwards to the Try stage to make quick changes and test again, or the feedback may cause you to move forward to the Define stage where you discovered a whole new user need that you've decided to address.