

Informal and Formal Design Reviews

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Context: In-class; Use-Inspire Design Project II

Keywords: design projects, design reviews, design process, design thinking, educator feedback, user-centered design, project-based classes (PBL)

Student Activity Time: 5-10 minutes in class

Throughout various design projects, students reflected on their work in design reviews.

Introducing the Reflection Activity

In a sophomore engineering design course focused on user centered design, students worked in groups to design the future of outdoor play. Throughout the course, the educator engaged students in continual reflection about their project through design reviews. The purpose of this reflection activity was for students to move beyond simply building something, but to answer questions related to the entire process of design ideation through prototype and fabrication. There is a skill that develops when learners take an imagined idea, build it, and communicate about the design process.

In this course, students engaged in an ambiguous design problem for their class projects—design the future of outdoor play. In shorter warm-up projects, students first designed for themselves, then in the second project they designed for someone who was similar to them (e.g., a roommate). Students were then required to participate in a third iteration during which, they designed for someone unlike themselves. The organization and unique iterations of this project helped support students' engagement in the design process.

Throughout these projects, the educator used informal and more formal benchmarking design reviews as a mentoring technique to engage students in the iterative aspect of the design process. These design reviews took place in class as students worked on their projects and manifested in different formats. Sometimes, the educator walked around engaging students in a design review, asking them reflective questions. Other times, these design reviews took place at the start of class. The educator asked each group to present an update to the class about their project. Sometimes these design reviews looked like a culminating conversation with each team before they wrote their final project paper. The kinds of questions asked in the design review included: what did you do, what did you learn, and what are you going to do next?

In terms of outcomes, the purpose of scaffolding the reflection conversation throughout the course was to engender reflective thinking, so that as students engaged in the design process could use reflection in their own design process. It was possible by engaging in this design process and design review, that students

developed a judgment of how to most effectively use their talents and skills to succeed in their projects. As a result, students identify what their design process and how to use it to accomplish a design project. Finally, it was possible that by engaging in reflection, students may have engaged in their project activities in more mindful ways. Through engaging in the reflection activity, the educator hopes that students become more aware of balancing the product and process.

Recreating the Reflection Activity

	Description
1	Engage students in choosing a design project they are interested in and motivated to solve.
2	Scaffold informal design reviews throughout the design project.
3	Iterate on the design process—rinse and repeat.

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📁 2.1 Critical
Function
Prototype
Handout

In the Words of the Educator: Tips and Inspiration

Ask students a variety of questions. I think there is a host of ways in which you could ask these questions. It's important to listen to students and dynamically ask questions based on what you hear from the students.

Be prepared to give students constructive criticism. When engaging students in design reviews, it's important to start with something positive to give them a moral boost. Then based on what you hear in their design review, be prepared to help students move forward with their projects—asking probing questions and giving criticism.

What was the inspiration for the reflection activity? Engaging students in design reviews makes the class more interesting for both me and the students. If they are unbounded, they come up with ideas that are more useful to them, they are more curious about, or more individually motivated about. If the students are allowed to diverge from a specific plan, they often surprise me.