

LearnxDesign

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Building Students' Ideation Ability through Design Heuristics

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Outline of workshop

Where do new ideas come from, and how can we as educators encourage our students to create innovative solutions that address complex, global challenges? The Design Heuristics method has been proven to help designers and engineers generate novel ideas, transform existing ideas in new directions, create multiple concepts to choose from, and increase the diversity and creativity of the concepts generated. Design Heuristics were developed through protocol studies with expert industrial designers and engineers along with analyses of award-winning product designs. Additional studies verified the use of these common "cognitive shortcuts" by successful student and expert engineers. The resulting 77 distinct Design Heuristics provide easy-to-use prompts that guide the generation of new concepts. They offer specific methods that can be applied to any product design problem to produce multiple, diverse, and creative concepts. In empirical studies, Design Heuristics have been successfully tested in engineering and design classrooms, and have been readily adopted by students to create more, and more diverse, concepts.

In this workshop, we will introduce this method to teach idea generation in design and engineering courses, and a limited number of participants who have registered in advance will receive a set of Design Heuristics cards. Information on how to acquire additional sets of cards will be provided. Our learning goals in this session are to: 1) Recognize struggles students commonly have with idea generation; 2) Understand and apply the Design Heuristics method, an evidence-based idea generation tool for individuals and groups; and 3) Plan ways to integrate Design Heuristics into existing course materials.

Participants will be introduced to the Design Heuristics method and learn how to integrate this tool into their existing course materials. We will introduce the Design Heuristics method as part of a systemic approach towards building students' ideation flexibility and capacity,

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including a set of practical activities and strategies for classroom and personal use to overcome fixation and other common issues that affect designers. These activities and strategies span the design process, with individual and team approaches in early ideation, concept selection and iteration, and evaluation and component-based iteration.