WORKSHOP

Design Signatures in the Wild: Making the Invisible Visible

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OVERVIEW OF WORKSHOP: In addition to applying an engineering design process, a learning outcome of many engineering design courses is to develop students' awareness of the design process itself. This can be difficult since engineering students often focus on the design deliverables as tasks rather than artifacts of an ongoing process. The intent of this workshop is to teach participants how to build self-awareness for their students and themselves through self-tracked design timelines ("design signatures"), such as those shown in Figure 1. With these design signatures visible in front of them, students and faculty can better reflect on an otherwise invisible design process.
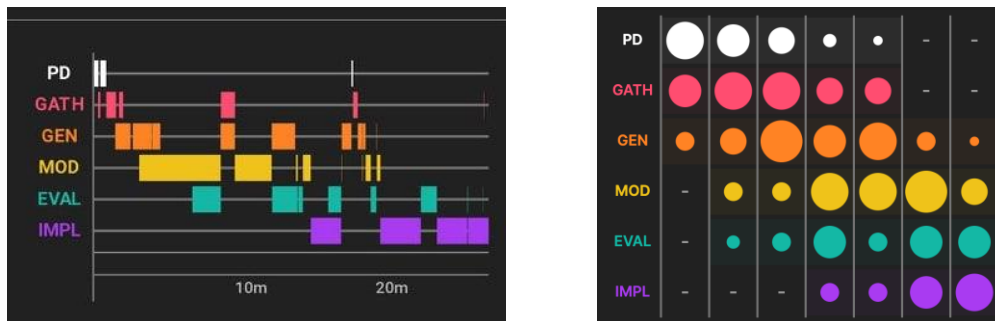

Figure 1 - Example Design Signatures created with app

ACTIVITIES: This interactive workshop includes a hands-on activity in which participants will create paper-based design signatures during a live design activity in small groups, a short overview of the underlying research framework for this work, an interactive review and analysis of existing design signatures from other short-term and longer-term design projects, and an opportunity for participants to make connections with their own teaching. Tables or desks would be helpful for the design activity.

TARGET AUDIENCE: This workshop is geared toward engineering educators and graduate students interested in design education and design research. No prior knowledge is required to participate.

OUTCOMES: At the end of this workshop, participants will believe in the feasibility of having students self-create design signatures, feel energized about the impact of design signatures on students learning about design, be able to make a concrete connection between design signatures and their own teaching/practice, have a set of tools to track design processes they can use in their classes, and know where to find resources to support their own use of design signatures.

REFERENCE: Atman, C. J. (2019). Design timelines: Concrete and sticky representations of design process expertise. Design Studies, 65, 125-151. https://doi.org/10.1016/j.destud.2019.10.004

KEYWORDS: design process, timeline, design awareness, reflection

PRESENTER'S BACKGROUND: Susannah Howe, Ph.D., P.E., is the Design Clinic Director in the Picker Engineering Program at Smith College (USA), where she coordinates and teaches the capstone engineering design course. She has experience implementing design signatures in her design-based teaching, ranging from short in-class activities to two-semester tracking of capstone design projects. She is part of a multi-institutional applied research collaboration across the U.S. focused on design signatures in engineering education.