

In creating software, design plays a big role. In many cases, the product or solution to be created has not previously existed in any form. The challenge of moving from abstract ideas to concrete implementation is tough. This is especially true when considering that the raw materials are digital themselves and can be made, shaped, or re-shaped as needed. Designing and building with a construction kit that itself can be (re)designed and (re)built is an interesting recursive challenge.

In these efforts, there is discussion of constraints, user needs, views, collaboration and workflow. Design, in these projects is an ongoing effort – requiring collaboration, innovation, iteration, and constant inspection and adaptation. Requirements, Design, Implementation, Quality and other efforts have significant overlap, with each feeding into and impacting the other.

Usually, a major step in design is to consider an architectural style that describes major approaches, patterns (proven, well-known, solutions to recurring problems), and practices. The papers and videos from this week provide details on Blended and Flipped classroom approaches – which could be seen as architectural styles. For each style – we have work to do in understanding constraints and possible approaches (and in turn how we would implement, test, and support creation of a new educational offering).

Around this architectural style, we further consider our requirements – taking a very strong user-centered focus. Along the way we have workshops to understand the needs of users, create prototypes, work in small batches, and always looking for input and feedback from users – ideally, making data-driven decisions. And there is a tight loop between determining needs, designing, implementing and determining if we hit the mark. The feedback loops all trace back to the fact that there's just too many things that we don't know that we don't know.

Design ends up being both a noun and a verb. Design, as a noun, is a thing. This is the design that we create, document and iterate. Design, as a verb, represents the actions, thinking, feedback incorporation, persona creation, constraint analysis, brainstorming, prototyping, whiteboarding, and so on that reflect action. With all of this in mind, I struggle to read that: “Design is a planning process that includes consideration of many content and process issues related to the intended learning outcomes” (Vaughn et al, 2013, p. 21). Thinking of design as a “planning process” sounds rather shallow. Does it mean that once I create a plan I have a design? Or that as long as I follow the plan I am designing? In addition, it sounds like a one-way flow – we plan, we follow the plan, and voila, we've designed an educational experience. Paraphrasing old sayings, plans are useless, but the act of planning is essential. Which could be further elaborated by the idea that the further out we attempt to plan, the more difficult it is to plan with any degree of accuracy. Having an overall vision, high level longer term plans, and detailed short term plans better leverages planning efforts (in essence, having multiple planning horizons).

In continuing with the chapter by Vaughn et al., I see many constraints and principles (some could even be patterns), but I don't see design. I see ideas that go into my design efforts. Similarly, the special reports on Blended and Flipped classes also provided interesting ideas, approaches and results that could shape future designs. I think this has been a challenge for me throughout our modules. We touch upon many constraints and aspects that go into a design, but we have had very little discussion about design as an activity. For instance:

- How can we produce small portions of an educational experience, validating each as we go?
- How can we create prototypes?

- How to run workshops to better understand the needs of our students and how they learn?
- How do we best capture feedback during design?
- How can we collaborate with others during the design (or re-design) of our courses and workshops?
- How do we balance between documenting a design and actually designing? What value is a lengthy design document? The value is derived from the actual course or learning object. Once upon a time, the software industry made significant investments in creating models in advance of coding. This approach at creating blueprints in advance of developing led to a worst practice of “big design upfront.” This was especially troublesome as models don’t run/execute – only code runs. Keeping everything theoretical kept things clean and simple. However, there’s a big difference between theory and practice.
- Even with our design proposals, we operated in isolation, isolated from other groups and from potential users. It would have been great to review other design ideas and approaches to design.
- Are there tools/aids that we can use to help us better understand goals, personas, and how we can optimize design activities?
 - o [Product Canvas?](#)
 - o [Discovery Delivery Loop?](#)
 - o [Mobius Loop?](#)
 - o [User Story Maps?](#)
 - o [Deming Cycle?](#)
 - o [Personas?](#)
 - o User Stories and/or Use Cases (The video interview with Salman Khan had references to Use Cases).

In summary, I worry that some would read the chapter by Vaughn et al, and attempt to stitch together a selection of these practices and call it a “design” and claim that they had “designed” a learning experience. For example, would advice such as “Students should be encouraged to develop personal relationships in a forum specifically designed for social sharing” (Vaughn et al., 2013, p29) lead to just creating “course café” threads in online discussion forums. Would the students use such a resource? Is this the best way to bring together students that are distributed across geographies and time zones?

Before wrapping up – I’ll share that I did enjoy reading this week’s materials (and the videos). However, I’d sure like to see more background on design as an activity and how we successfully leverage these practices, ideas, and suggestions.

Lee.

References

Salman Khan. Liberating the Classroom for Creativity. Edutopia. 2011.

<http://www.edutopia.org/salman-khan-academy-flipped-classroom-video> (10:32)

Vaughan, N. D., Cleveland-Innes, M., & Garrison, D. R. (2013). Teaching in Blended Learning Environments: Creating and Sustaining Communities of Inquiry. Edmonton, AB, CAN: Athabasca University Press.