Lecture 20 – Building a Visual Narrative

Learning Objectives

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Design Guidelines Covered

G6.1

G6.2

Announcements

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Visual Cognition

Building a Presentation

- You are faced with creating a presentation in which you need to present some results. It's easy to make a bad or just OK presentation, but what makes a really great presentation? Or at least an effective one? Let's discuss
- Things that I consider when writing a lecture or presentation:
  - **What take-away ideas do I want the audience to understand?** This is it, right? This is the point. If your audience doesn't come away with the idea that you want them to take away, it was all a big waste of time!
  - **Background and knowledge of audience**. Most broadly, I know the backgrounds of the people in this class (in terms of education, course background). Easy, you are all about the same in this way (if you've been keeping up with the material more or less). I told y'all to read but I have to assume some of you didn't, but if I want it to be understandable to the maximum number of people, I will probably have to highlight main points of the text. It boils down to:
    * Does my audience have the required background knowledge to understand the concepts I'll present?
    * Do the concepts build appropriately on this background knowledge?

    If either answer is "no," I have to rethink how to present it, whether I need additional background, or if the concept is important to cover at all or not!
  - **What are the methods of communication available?** This is important and difficult in switching to online education because a lot of the ways I would gather information (looking at faces, looking for confusion or understanding) are not available anymore. You may have to think about presentation, about what types of methods are available for communicating ideas, and what are the best practices for using those media options.
  - **Where is your audience's attention?** With multi-media presentations now being the norm, it is imperative that you consider where the audience's attention is and their cognitive load at any given time during your presentation.
- **Take-away ideas and the process of building.** This requires two things: you to be deliberate with how you present something and also the audience understanding what you intend through the presentation. For that, you must have feedback. Building is an intentional word, it's not that something effective is created whole-cloth the first time by a genius. A really effective visualization (and presentation) is built in iterations of creation and editing. But at every stage, you need to re-ask and analyze what is the take away message and does it clearly come through to the audience?

- **Considering Audience Background.** This is so critically important, that we're going to take some time to work with it. We've talked about the curse of knowledge before, but let's consider it backwards. Here is a graph and I'd like you to tell me the concepts that are required to understand the graph.
  - **Discussion:** What concepts are required to understand the concept presented in the graph?
  - Some of this information you can assume that your audience knows. Some you can't. This is where knowing your audience matters!
  - If you may know what a passion fruit tastes like and some of you may not. If you do, then you can understand the placement, if you don't, there is not a way I can really describe it to you, so you are simply left out! Be careful to reach the maximum number of people you can. This may require just a bit more thoughtfulness on your part!
- **Types of media**. The type of media you have at your disposal is obviously really important – it dictates how you are going to be able to interact with your audience! Each type of media has its pluses and minuses, and mixing media is also a thing that most people do during presentations.
  - **Discussion**: fill in what types of media are available in the types of formats listed on the slide.
  - A separate but related question is how do you expect your audience to engage with you during your presentation? This is an important piece of the puzzle because a lot of how someone understands something can be flexible if you're able to communicate with them. If you aren't (if it is a poster without you there, if it is a scientific paper that someone will just read on their own), then the degree to which the product needs to stand alone is much greater!
- **Attention of your audience.** Consider carefully where you are asking your audience to place their attention and how many things you're asking your audience to do at once. This is cognitive load, and the greater the load, two things will happen: 1) they won't get all the things you want them to get, and/or 2) they will stop paying attention all together. Make the cognitive load lighter and you'll get better comprehension and better engagement!

Best Practices for Building a Narrative

- Verbal versus visual languages: which is better? It depends!
  - Reading text, although visual, is limited to serial processing. Verbal language is the same thing. Although it is extremely powerful, if you print a word in a color and ask to name the color the word is printed in, you will struggle to not say the word itself!
  - Visual processing is serial, so you can pack a lot more information into a figure than you can describe using words. "A picture is worth 1,000 words!" is true.
  - Trick is – some concepts and objects are better presented verbally and some are better visually.

        * Relationship diagrams: these can be better as words, but it is much, much easier to understand these connections in a visual diagram.
        * Programming concepts: these are actually much easier to understand as text, visual diagramming makes comprehension worse in students.
    - Evaluate the media in which you are presenting from primarily to make sure it makes sense. Use the media that results in the smallest cognitive load.

- Mixed media: linking images and words
    - Any time you're asking your audience to listen and look you have the opportunity to dramatically increase cognitive load (because you're introducing the possibility that you will throw more than one concept on them in a short time!)
    - Be sure to first: coordinate. Don't let your audience's attention slide to something else. Be sure that visuals, verbal, and text are consistent.
    - Place text on images close to objects to visually link them.
    - Use verbal instead of text to highlight information.
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- Gestures
- Non-animated graphic devices
- Animation versus no animation.
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Action Items for next time

1. Edited version of Data Visualization Challenge # 1 submitted in assignments.
2. Prepare for Challenge #2.

Reading for next time

1. None