

Case Study 03: Is This Good Design? When You Notice The Absence of The Universal

INTRODUCTION

We have been discussing design: good design, bad design, and how to tell the difference. Now we want to expand our awareness to the concepts of Universal Design.

Why? Why is Universal Design important? As you move through your daily life and interact with the world around you, you probably don't even notice most of the design you encounter—until you encounter something that annoys or inconveniences you.

If you're lucky, it's nothing more than a passing aggravation as you just get on with your day. But what if it's not? A trivial annoyance for you might present a literally impenetrable

barrier to someone else (see the picture right). The goal of Universal Design is to remove those obstacles in a way that just solves the problem without calling attention to the accommodation.



OBJECTIVES

The specific goals for this exercise are:

- Identify an existing example (object/structure/etc.) of good Universal Design found on the UCA campus
- Document the features or aspects of your example that adhere to the principles of Universal Design
- Locate an example (also found on the UCA campus) of an object/structure/etc. that does not follow the tenets of UD
- Articulate the way(s) in which your example's design is difficult or obstructive to access or implement
- Specify how your identified design flaws could be either minimized or corrected completely
- Create a brief, well-designed presentation and deliver your findings to a group of peers

STEP 1: START PAYING ATTENTION

Actually, Step 1 is forming and contacting your team. You must sign yourself up using <u>the shared spreadsheet</u>. Make sure that you know how to contact every member of your team, and that everyone agrees on preferred methods for staying in communication.

As you go about your typical day on campus, start paying close attention to the structures and objects you interact with. Classrooms, dorms, common areas, the HPER, the cafeteria—your options are nearly endless!) Start asking yourself, "Is this Universal Design?" Ask yourself if something *you* think is well-designed would be just as easy for someone *else* to utilize.

Examples of good or great design can be hard to identify, because the best designs should be unobtrusive to the point of being almost invisible. So pay attention.

Get your phone out and start snapping! Document instances of both good and poor design. Collect at least four or five examples of each. Don't forget to make a few notes to remind yourself later of what you thought was good or bad about the designs.

STEP 2: POOL YOUR RESOURCES

Meet with your team and check everyone's pictures. You should have a lot of options to choose from, but you'll have to

narrow it down. *Do not pick stairs.* Because unless I put it in writing, every single group will pick stairs. **No. Stairs**.

Work together to decide which of your examples you want to analyze further.



Choose one incidence of well-executed Universal Design, and a single example of poor design. Be creative; you do not want to be the fourth presentation in a row that points out the same obvious problems with a flight of standard stairs. **No. Stairs.**

STEP 3: ANALYZE THE GOOD ONE

Start with your example of good design. Clearly identify which aspects of the design you find well done. <u>Run through this list</u> and explain how each of the main principles of Universal Design apply to your example. As you think about the design, consider explicitly how the design functions for people of differing abilities. Does an accommodation for differing abilities impact your ability to use or enjoy the design?

For example, if a sign or signal is color-coded, people with <u>deuteranopia or protanopia</u> could have extreme difficulty parsing color-related information. So how does a colorblind person know whether to stop or go at a traffic light? Well, because all traffic lights are designed with the same configuration: the top light means stop and the bottom light means go, so even if someone cannot distinguish between the green and red colors, they can tell the difference between the top and bottom light. If you can see color, the order of the lights doesn't really matter, but your experience is not negatively impacted by having all lights arranged identically.

STEP 4: DECONSTRUCT THE BAD ONE

Now focus on your example of poor design. Is it a bad design in general (*nobody* has a good experience), or is the design non-inclusive (only some people have a good experience)?

Again, use <u>the list of seven principles</u> and show explicitly how your chosen design violates or falls short of these ideals. If the design fails for certain specific users, suggest a modification that could accommodate those users (you don't need to consider whether your accommodation is practical, technologically feasible, or economical).

Lastly, how common is your bad design? Is it something you see in other places and contexts besides on campus? If it's not good Universal Design, what are some reasons why it shows up? For example, is it old design that's expensive to update? Is it possible that a decision was made to use a cheaper, less inclusive design because the number of affected users is very small? Is it just carelessness (implementing a design without the awareness that it excludes a subset of users)?

STEP 5: SUMMARIZE YOUR FINDINGS

Revisit your original candidates for both good and bad design. Was it easier to find examples of well-implemented Universal Design, or were examples of poor design more pervasive?

If you expand your consideration beyond campus, are you more aware of examples of Universal Design in other aspects of your life (like where you work or shop or go out to eat, etc)?

Why is it important to consider these principles? Are there some situations in which engineers *cannot* realistically use Universal Design?

STEP 6: CREATE YOUR PRESENTATION

1. Pick a platform. If you are already comfortable using PowerPoint, you may want to use that. I routinely use Keynote. Perhaps you prefer an online tool like Prezi, Slides.com, or Google Slides. If you have never used *any* presentation software before, please consult with me.



- 2. Can you export and share it? Check (and double-check before your presentation date!) that you will be able to both share the presentation slides during a live classroom meeting, and that you will be able to export your slides to a .pdf format that you can submit via Blackboard.
- 3. Prepare to prepare. Visit the slides for <u>Creating a</u> <u>Presentation</u> to review the instructions and tips for putting together a high-quality, professional presentation. There are also many online resources offering advice and pro tips for presenting. Google "creating effective presentations" or something similar. There's lots of good advice out there but be aware—the internet is forever. Articles from 2010 or 2013 will be less helpful than articles published more recently. Time spent here can help keep you from making rookie mistakes.
- 4. Organize and outline. Do not skip this step. Outlining isn't glamorous, but neither is your skeleton, and it serves precisely the same purpose. Get your thoughts organized, make sure that you're not skipping anything important.
- 5. Nuts and bolts. Once you have outlined your content, you are ready to start shaping your presentation. Nuts and bolts before bells and whistles! Part of my own process is to build my slides on a white background, using one functional font for text. Again—not glamorous, but very necessary for making sure you have your content complete, correct (spelling and grammar), and in the order you want to present it. A blank background without images will help you ensure that you are not overloading your slide with too much text.

- 6. Bells and whistles. Once you have the structure in place, you can start embellishing. Your presentation needs to be professional, but that does not automatically translate as formal; you can be casual, but still be professional. You can show warmth and humor and still be professional.
- 7. Fonts and colors. There are so many tools available online that there is no excuse for using awful colors or unreadable fonts. If you start with an existing theme, please make sure that any background images do not interfere with



your text or compete with your own images. If you design a custom theme, google "font pairing" and notice how to combine fonts in ways that don't look amateur. Let the images you want to use help inform your color palette.

- 8. Images and embeds. Use judiciously! Images keep your slides from being monolithic slabs of text. But images, video, audio, animations, builds, and slide transitions all contribute to sensory overload. You have probably witnessed presentations in which over-use of these techniques left you distracted and hindered your comprehension (if you were able to stay focused at all).
- Permissions and citations. Word of warning: image credit! In our very informal context, no one will notice if you use a copyrighted image without permission or attribution. However, when you have been



commissioned to prepare something for a client, your engineering firm's legal department might be much stricter about re-use permissions. Creative Commons is your friend for finding resources that can be re-used and modified without worry.

- 10. Revise and refine. You should be revising and refining continuously, noticing that you need to break this slide into two pieces, or add a bit more text to that slide, or swap the order of those other two slides. Using the "Light Table" or "Slide Sorter" view can help you see the overall progression of your slides and notice if there are slides that stick out or don't seem to flow withe the others.
- 11. **Practice, practice, practice.** If you decide to wing it on presentation day, it's going to show. Off-the-cuff is fine for comedy improv. This is not the time. And if you decide to freestyle during your portion of the presentation, you're going to leave your partner flustered and angry that you went three minutes over the ten-minute time limit.

STEP 7: PRACTICE, PRESENT, SUBMIT

Your team must sign up for a presentation time slot using the <u>shared Google spreadsheet</u>. The sign-up deadline is 6:00 PM on Friday, 23 February 2024. If your team does not sign up for a time slot, one will be assigned to you.

Teams will present in lab on Monday, 25 March 2024. Please be prepared to complete your presentation within 10 minutes. Two additional minutes have been allocated for audience questions, and there is a three-minute buffer for transitions between presentations.

Be sure to complete a dress rehearsal (or several) in advance. Make sure that you can share your slides using the technology in CCCS 112. The projector has both VGA and HDMI cables; do you have or need an adapter? Do you know how to connect your laptop (just ask, it's not hard or anything).

Please export your slideshow to a .pdf document. You must submit the .pdf of your slides electronically via the Blackboard assignment no later than 6:00 PM Friday, 29 March 2024. Only one assignment per group!

REFERENCES

Center for Excellence in Universal Design: https://universaldesign.ie/home/

The 7 Principles of Universal Design: https://universaldesign.ie/what-is-universal-design/the-7-principles/the-7-principles.html

Universal Design: Process, Principles, and Applications: <u>https://www.washington.edu/doit/universal-design-process-principles-and-applications</u>

National Eye Institute: Types of Colorblindness: <u>https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/color-blindness/types-color-blindness</u>

PERFORMANCE ASSESSMENT

Your Case Study is worth 80 points, and each participating team member will receive the same score. Your team performance will be evaluated using the rubric below:

Assessment	Criteria / Value		Points Earned
Analyze the Good One (20 points)	Have you selected a suitable example of good Universal Design to analyze?	4 points	
	Have you clearly identified the design features that correspond to the specific principles of good Universal Design?	8 points	
	Have you considered explicitly how the design functions for people of differing abilities?	5 points	
	Did you discuss whether an accommodation for differing abilities impacts your ability to use or enjoy the design?	5 points	
Deconstruct the Bad One (20 points)	Have you selected a suitable example of poor Universal Design to analyze?	3 points	
	Have you clearly identified the design features that violate the specific principles of Universal Design?	8 points	
	Have you identified specific modifications to improve the poor design?	5 points	
	Have you analyzed the reasons for the propagation of the poor design?	5 points	
Summarize (10 points)	Did you adequately summarize your findings?	5 points	
	Did you identify situations where Universal Design cannot be implemented?	5 points	
Slide Quality (15 points)	Are your slides readable (font, color, contrast)?	3 points	
	Is the information on the slides concise and relevant?	3 points	
	Are your graphics appropriate and meaningful? Attributions where necessary?	3 points	
	Overall design: Do your slides look like they all belong to same presentation?	3 points	
Live Presentation (15 points)	Have you practiced your delivery? (Or is it really obvious that you have not?)	3 points	
	Did you speak clearly and audibly?	3 points	
	Did you make eye contact with your audience? You can't connect with your audience if your camera is switched off.	3 points	
	Did you speak extemporaneously (as opposed to reading your slides line-by- line in a monotone while staring at your shoes)?	3 points	
	Were you able to address audience questions adequately?	3 points	