



Play, Not Necessity, is the Mother of Invention

A Reflection on Accessibility Research

Ashlyn C Walden

Table of Contents

Play or Necessity? Figuring It Out
Report, Reflect, or Revise? Analyzing My Data
References & Selected Readings

Alternate Access & Downloadable Content

If an effort to support reading preferences and needs, I have included three alternate access versions as well as downloadable versions of the resources and study data discussed in this piece.

Alternate Access: [Play, Not Necessity, Inteactive PDF](#)

Alternate Access: [Play, Not Necessity, Audio File](#)

Alternate Access: [Play, Not Necessity, Google Doc](#)

Resource: [Universal Design vs. User-Center Design](#)

Resource: [Unversal Design Guidelines](#)

Study Data: [Student Survey 1](#)

Study Data: [Student Survey 2](#)

Acknowledgements

I would like to formally acknowledge all of those who made my study, research, and reflective work possible. First, I would like to thank Joan Mullin and Cat Mahaffey who spent countless hours mentoring me through the process of developing my initial study. To the four instructors, Cat Mahaffey, Julie A. Cook, Lynn Raymond, and Angela Mitchell my gratitude for allowing me to use their courses to explore student perception of accessibility. I am also grateful for the patience, editorial suggestions, and idea development that my colleagues, Jessie Borgman, Christine McClure, Ravynn Stringfield, Justin Cary, and Nadine Gordon provided at various stages of this process. To my husband Chase Walden, and my children--thank you for being there to listen, encourage, and put up with me as I try crazy new things. And finally to Chase--thank you for lending your voice and talent to my mapping video.



Download/Viewing Options

View or download the UC/UCD comparison infographic here.



Play or Necessity? Figuring it Out

As a teacher-scholar, I am sometimes guilty of upholding the status quo. The teacher part of me values students taking risks in their research and writing; I encourage them to think beyond traditional academic texts and most importantly, I want them to consider the learning needs and preferences of their audiences both real and imagined. Yet, when I began analyzing my pre-pandemic accessibility study for a peer-reviewed journal, all that advice I offer my students didn't even register. My role as writer-researcher on some level was performative. I needed to adopt a certain rhythm, a discourse, lest I be denied entry to conversations of interest like accessibility, Universal Design (UD), and User-Centered Design (UCD). Said areas of research are welcoming and inclusive communities encouraging innovation, creativity, and a way of communicating that can be easily accessible for any reader, but I ignored it. Even the opportunity to produce a multimodal version of my research by the same publication was an afterthought. Necessity was to be the mother of invention, not play or experimentation--or so I thought.

Combing through my data sets was time-consuming and exhausting, so I began with what I thought was easiest: take up Oswalt and Meloncon's (2014) charge to explore, "what do students—both those with disabilities and those without disabilities—find to be the most useful elements of UD," (pp. 293-294). Necessity dictated I simply report what students found accessible in their courses noting any significant patterns, which is hardly inventive. What I actually discovered, however, was that participants were implicitly aware of six out of seven UD principles: Principle 1: Equitable Use, Principle 2: Flexibility in Use, Principle 3: Simple & Intuitive to Use, Principle 4: Perceptible Information, Principle 5: Tolerance for Error, and Principle 6: Low Physical Effort (CEUD 2014).



“[...] blur the boundaries between data analysis, practical application, and participatory course design.”

This video takes you through the sometimes messy process of locating self, genre, and focus when sharing research. My hope is to convey the sense of tension teacher-scholars feel as writers still trying to find their way into conversation of interest.

Report, Reflect, or Revise? Analyzing My Data

Accessibility scholarship has long emphasized the importance of involving stakeholders in design and development processes be it in course design, technology platforms, products, etc. (Fischer 2000; Lazar, 2007; Oswal, 2014; Still & Crane, 2017). I believed and continue to believe in the value of participatory design, yet if I am completely honest, my immediate goal in December 2021 was to do data analysis well enough to produce an article that could make it through the rigorous process of peer review. I am truly embarrassed to admit this was my initial approach to data analysis; it reduced the student experience that was shared in good faith as a means to advancing my career.

However, when I actually sat down and started to read the data sets, I found myself quickly becoming frustrated with how Google Forms exported the data in spreadsheets. It was difficult to identify patterns or perhaps more accurately, it was just plain impossible to read--some of the answers appeared incomplete, the columns which corresponded with the original survey questions didn't quite match up with the rows of answers, and the material wasn't organized in a way that I could analyze all the student responses. On some level, the problem of readability was my own making; I assumed Google could do all the work for me, and it certainly did to some degree, but not in any meaningful way that would be immediately transparent to me or other readers.

What I had originally imagined as several days of reading through the responses and taking notes quickly turned into a massive undertaking of false starts in basic statistical analysis, compiling tables, pie charts, Likert scale plots, and bar graphs. This information had to be perceptible, require low physical effort to navigate, and have a tolerance for potential user/reader error--three out of the seven principles of UD. The boundaries of data presentation and practical application were blurring implicitly as I struggled through my analysis. I had an opportunity not only to report what I learned for others to consider further on their own, but I also had the chance to meld the research and practical application using my course design as a case study.

When considering the results of this research within my own classroom, I focused on the two highest-ranked categories (Course Resources at 67.5% and Assigned Tasks at 72.9%) and the lowest-ranked category (Teacher Feedback at 21.6%) to revise and assess. These areas are integral to successful tech-mediated writing courses because learners come with various abilities and histories that may impact their engagement with course contents (CCC 2011; CCC 2013; Foley & Ferri, 2012; Warnock, 2015; CEUD 2014; GSOLE 2016; Cargile-Cook 2005; Cason & Jenkins 2005; Grady & Davis, 2005; Mahaffey & Walden 2019).

7 Principles of UD

Directly quoted from the Centre for Excellence in Universal Design (CEUD) (2014). The 7 Principles Retrieved from <https://universaldesign.ie/what-is-universal-design/the-7-principles/#p2>.

Principle 1 Equitable Use: The design is useful and marketable to people with diverse abilities.

- Provide the same means of use for all users: identical whenever possible; equivalent when not.
- Avoid segregating or stigmatizing any users.
- Provisions for privacy, security, and safety should be equally available to all users.
- Make the design appealing to all users.

Principle 2 Flexibility in Use: The design accommodates a wide range of individual preferences and abilities.

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

Principle 3 Simple & Intuitive to Use: Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting and feedback during and after task completion.

Principle 4 Perceptible Information: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Provide adequate contrast between essential information and its surroundings.
- Maximize "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Principle 5 Tolerance for Error: The design minimizes hazards and the adverse consequences of accidental or unintended actions.

- Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail-safe features.
- Discourage unconscious action in tasks that require vigilance.

Principle 6 Low Physical Effort: The design can be used efficiently and

Download/Viewing Options



View or download the UD infographic guidelines here.

Though my course evaluations demonstrated consistent positive commentary on the locating of course materials, assignments, and teacher feedback, I also wondered how students' perceptions of course content and accessibility might broaden especially if given the specific language of the field.

Mulling over this question, I quickly realized that UD was passively modeled in course materials and only introduced and practiced as an explicit concept in one independent homework activity. I had always felt this was a strong exercise as it included direct faculty instruction through a self-produced, brief video, and infographic introduction followed by an exercise that allowed students to assess the application of UD in two student digital compositions. Even more troubling was the fact that I then assessed students on their ability to apply UD principles using rubric language such as “describe how a page is meant to function,” and “choose a color scheme that is appealing but not overpowering,” without ever explicitly unpacking how these choices matter in terms of accessibility (Walden, 2020). There was a disconnect between my theory and practice.

Addressing this disconnect, I slowly integrated UD principles such as a tolerance for error and perceptible information by developing an assigned task template. This design was consistent throughout the course and included color-coded content tabs developed using html code, hyperlinked or embedded intra/extra course resources, appropriately named section titles, descriptive navigational text, and the use of color, space, shape, font, and heading formats. It was a lot of work, to say the least, but it was this process of letting theory concretely inform my practice that helped me to see that perhaps there was something to be gained in talking through this process with both my students and colleagues. How can I model this reflexive relationship between research and teaching practice? To answer this question, I slowly worked toward both telling the story of my data and mapping out how this data influenced my practice as a teacher. It did not make sense to me to simply report my findings in one space and then revise my course materials in another--this was a part of a larger narrative.

“[...]I also had the chance to meld the research and practical application using my course design as a case study.”

Learn More

Interested in seeing a more comprehensive view of my data? See the public data sets below:

[Student Survey 1](#)
[Student Survey 2](#)

References & Selected Readings

- Cargile Cook, K. (2005). An argument for pedagogy-driven online education. In K. Cargile Cook & K. Grant-Davie (Eds.), *Online Education: Global Questions, Local Answers* (1st ed., pp. 49–66). Routledge. <http://dx.doi.org/10.2190/OEGC3>.
- Cason, J. & Jenkins, P. (2005). Adapting instructional documents to an online course environment. In K. Cargile Cook & K. Grant-Davie (Eds.), *Online Education: Global Questions, Local Answers* (1st ed., pp. 213–236). Routledge. <http://dx.doi.org/10.2190/OE2C11>.
- Centre for Excellence in Universal Design (CEUD). (2014). How to make accessible documents. Retrieved from <http://universaldesign.ie/Products-Services/Custom-Communications-Toolkit-for-the-Public-Service-A-Universal-Design-Approach/Digital-and-Web-Based-Communication-Systems-and-Services/How-to-make-accessible-documents/>.
- College Composition and Communication (CCC). (2013). A position statement of principles and example effective practices for online writing instruction (OWI). Retrieved from <http://cccc.ncte.org/cccc/resources/positions/owiprinciples>.
- College Composition and Communication (CCC). (2011). A Policy on Disability in CCC. Retrieved from <http://cccc.ncte.org/cccc/resources/positions/disabilitypolicy>.
- Fischer, G. (2000). Symmetry of ignorance, social creativity, and meta-design. *Knowledge-Based Systems*, 13(7-8), 527–537. [https://doi.org/10.1016/s0950-7051\(00\)00065-4](https://doi.org/10.1016/s0950-7051(00)00065-4).
- Foley, A. & Ferri, B. A. (2012). Technology for people, not disabilities: ensuring access and inclusion. *Journal of Research in Special Educational Needs* 12(4). 192-200. <http://doi.org/10.1111/j.1471-3802.2011.01230.x>.
- Global Society of Online Literacy Educators (GSOLE). (2016). Mission statement. In GSOLE Organization Homepage. Retrieved from <https://www.gsole.org/>.
- Grady, H.M. & Davis, M.T. (2005). Teaching well online with instructional and procedural scaffolding. In K. Cargile Cook & K. Grant-Davie (Eds.), *Online Education: Global Questions, Local Answers* (1st ed., pp. 101-122). Routledge. <http://doi.org/10.2190/OEGC6>.
- Lazar, J. (Ed.). (2007). *Universal usability: Designing computer interfaces for diverse user populations*. Chichester, UK: John Wiley & Sons.
- Mahaffey, C. & Walden, A.C. (2019). #Teachingbydesign: Complicating accessibility in the tech-mediated classroom. In K. Becnel (Ed.) *Emerging Technologies in Virtual Learning Environments*. (pp. 38-66). IGI Global. <http://doi.org/10.4018/978-1-5225-7987-8.ch003>.

References & Selected Readings

Oswal, S. K. (2014). Participatory design. *Communication Design Quarterly*, 2(3), 14–19. <https://doi.org/10.1145/2644448.2644452>.

Oswal, S. K., & Meloncon, L. (2014). Paying attention to accessibility when designing online courses in technical and professional communication. *Journal of Business and Technical Communication*, 28(3), 271–300. <https://doi.org/10.1177/1050651914524780>.

Pengilly, C. (2021). Confronting ableist texts: Teaching usability and accessibility in the online technical writing classroom. In J. Borgman & C. McArdle (Eds.), *Pars in Practice: More Resources and Strategies for Online Writing Instructors* (pp. 53–66). The WAC Clearinghouse. <https://doi.org/10.37514/PRA-B.2020.1145.2.09>.

Still, B., & Crane, K. (2017). Research users. In *Fundamentals of User-Centered Design: A Practical Approach* (pp. 67–122). CRC Press. <https://doi.org/10.4324/9781315200927>.

Walden, A.C. (Fall 202). Portfolio check 1: Building your portfolio shell. [Assignment guidelines]. Canvas. https://uncc.instructure.com/courses/123244/assignments/774025?module_item_id=2188018.

Warnock, S. (2015). Teaching the OWI course. Hewett, B. L., DePew, K. E. (Eds.), *In Foundational Practices of Online Writing Instruction* (pp. 157-187). WAC Clearinghouse. <http://doi.org/10.37514/PER-B.2015.0650.2>.

Author Bio & CV

Ashlyn Walden is a Senior Lecturer in the Writing, Rhetoric, and Digital Studies Department at the University of North Carolina at Charlotte. She teaches a combination of hybrid and online courses in composition and advanced writing and research. Beyond the classroom, Walden co-revised the department's successful online writing course for faculty and actively mentors faculty in digital design every year. Research interests primarily include: fostering inquiry-based research in the writing classroom, digital composition and design, accessibility, and user-centered design. Her most recent co-authored book chapter with Cat Mahaffey, “#teachingbydesign: Complicating Accessibility in the Tech-Mediated Classroom,” was published in 2019 by IGI Global.

Awil143@uncc.edu

Ashlyn.Walden@uncc.edu

[Curriculum Vitae](#)