2. Beyond Lore: UX as Data-Driven Practice

Kelli Cargile Cook
Texas Tech University

Kate Crane
Eastern Washington University

Abstract: This chapter opens by connecting user experience (UX) and pedagogical practice. It then asks and addresses the central question of this collection: *How can we engage user experience approaches to better understand and engage students in order to strengthen technical and professional communication degrees, programs, courses, units within courses, and even lessons?* With this question in mind, the final section of this chapter offers four journey maps through the collection. Each map offers readers a distinctive route through the collection while introducing individual chapters and exploring how these chapters can be read as a whole.

Keywords: lore, pedagogy, user experience, student-centered, journey maps

Key Takeaways:

- UX as a pedagogical practice offers teachers a methodological alternative to lore.
- UX methodologies allow teachers to test what they think they know and provide insights about that which they do not clearly understand.
- Student-centered and user-centered are not pedagogically synonymous terms.
- UX terminology needs to be critically examined and carefully adopted as it refers to students as users.

Teachers have always been iterative information designers. Stephen North (1987) discussed how teacher-practitioners create their students' classroom experiences over 30 years ago in *The Making of Knowledge in Composition: Portrait of an Emerging Field*. He writes that "[Teacher] practitioners are always tinkering with things, seeing if they can't be made to work better" (p. 25). Through this tinkering, teacher-practitioners build a body of "*lore*," which North defines as "what has worked, is working, or might work in teaching, doing, or learning writing" (1987, p. 23). Compared to other methods of inquiry, North critiques lore for its lack of generalizability: it is a "self-contained" solution arising from experience that either works or doesn't work (p. 51). If the solution works, it may be passed on to others; if not, it is discarded and forgotten. In its place, another solution

DOI: https://doi.org/10.37514/TPC-B.2022.1367.2.02

is tried, and so it goes. In concluding his chapter on practitioner lore, North acknowledges the following:

> The academic reflex to hold lore in low regard represents a serious problem in Composition, and Practitioners need to defend themselves—to argue for the value of what they know, and how they come to know it. For that very reason, though, they need to be more methodologically self-conscious than any other communities: to know the limits of authority the other modes of inquiry can claim, on the one hand; but to know the limits of their own, as well, and work within them. (1987, p. 55)

Although this collection focuses on technical and professional communication, not composition, we begin this chapter with a nod to North (1987) because the collection's focus on *user experience* (UX) has deep roots in both the concept of *practice* and the concept of *inquiry*: *UX* might be defined as a practice that improves human experiences through situated inquiry within a highly contextualized space. As Crane discusses in Chapter 1 of this collection, UX is a practice that evolved when the usability profession moved from experimental laboratory designs "to a focus on smaller-scale studies that provided an easier, more cost-effective method for incorporating usability iteratively in a product's design process." These small-scale iterative studies are somewhat like the daily, weekly, and semesterly revisions teacher-practitioners historically have made to their courses and curricula. To decide what needs to be changed, teacher-practitioners perform reflection-in-action, "the art by which practitioners sometimes deal with situations of uncertainty, instability, uniqueness, and value conflict" (Schon, 1984, p. 50). In other words, when teacher-practitioners encounter a comforting or discomforting situation affecting student success, they take note and, if necessary, adjust. The situations noted or adjusted do not occur in isolation: teachers encounter them with their students. Successful or failed situations *with* students lead teachers to reflect on ways to improve their practice.

While we honor the iterative knowledge-making of teacher-practitioners, we agree with North's concerns that teacher lore lacks methodological rigor. Decision-making and adjustments often rely on a guess or hunch about what would make classrooms a better experience. As veteran teachers ourselves, we recognize that our classroom experiences from one semester affect the classroom experiences we build the next. At the same time, UX research has made us aware that, although we watch our students in the classroom and monitor their successes, often we do not solicit or invite their participation when we make curricular decisions. For example, our students are rarely with us when we revise our course syllabi as a semester begins or work with other faculty to update or revise our programs. Even when we can solicit and implement student feedback, we may face challenges that prevent us from implementing student recommendations. (For an example of these challenges, see Mark Zachry's chapter in this collection.)

If we neglect to include students in curricular decisions, we are not alone. In fact, assessment practices in higher education rarely acknowledge student experience. While curricular design and assessment at the degree, program, course, and even unit/lesson levels are commonplace on university and college campuses, in most cases, content experts—teachers, program directors, and other administrators—decide what content is taught and how that content will be assessed. These decisions are then codified in plans that track students' demonstrable achievement of assessment measures. Students function as by-products of curricular design, and, as such, students and their achievements are measured, weighed, analyzed, and reported. Rarely do teachers, program directors, and other administrators engage students other than as functional by-products of curricula. In typical waterfall design, students' functionality is measured at the end of the instructional unit in terms of what they can and cannot do.

This collection examines a different approach to instructional design and assessment, one that moves students and their experiences to the center of academic practice and provides teacher-practitioners with numerous methods to support inquiry. It explores a central question: *How can we engage user experience approaches to better understand and engage students in order to strengthen technical and professional communication degrees, programs, courses, units within courses, and even lessons?*

In choosing chapters to include in this collection, we looked for three key qualities:

1. authors who exhibited reflection-in-action, a quality we admire in teacher-practitioners;
2. rigorous method(s) employed to identify educational needs and promote change; and
3. student engagement in identifying and implementing needed change.

As we worked with our authors, we learned that UX approaches can be applied successfully within educational settings, but, as Dawn Opel and Jacqueline Rhodes (2018) have noted, UX terminology is not comfortably overlaid when describing educational situations. Further, like teacher lore, findings from UX approaches are often local and ungeneralizable. We discuss these problems in the next section. In the latter sections of this chapter, we argue that, nevertheless, UX is an effective academic practice. Using a series of journey maps through chapters, we introduce the collection's authors who have shown us that UX can lead to methodologically sound, responsive iterative changes in our classrooms and degree programs.

Problems with UX as an Academic Practice

There are many examples of scholars employing user experience design and research methods to investigate important aspects of students' experiences. Natasha

Jones (2018) uses human-centered design to study how viewing students as end users of syllabi can create a stronger document for student use. By surveying students' attitudes about syllabi, Jones finds that "students are able to identify design elements that help them to locate and use information in a course syllabus" (p. 33). Further, she argues that "In positioning our students as expert end users, we can include them as co-creators for designing our course deliverables" (p. 34). Brian Still and Amy Koerber's (2010) usability study focusing on how students use instructor feedback on an assignment and Tharon Howard's (2008) study concluding that students use writing handbooks in ways that simple usability testing cannot accurately gauge are both examples of how UX methods can be used to test our preconceived ideas of how students do (or do not) use the resources instructors provide. These studies show that testing what we think we know can provide insights about that which we do not clearly understand.

However, any attempt to adapt UX design principles to academic practice bumps immediately into terminology and naming issues. UX evolved from industry practices and, with those practices, came terminology that many academics find unacceptable. UX is associated with terms like "user," "product," and "processes," terms that seem to strip away the humanity of the classroom. Opel and Rhodes (2018) argue, in reference to user-centered design (UCD), that "certain industry discourses have become so ubiquitous that design and use of technology is tied inextricably to accumulation of capital" (p. 74). Further, they claim that "an ethic of expediency and efficiency undergird the move" to using UCD in learning environments (Opel & Rhodes, 2018, p. 75). Collin Bjork (2018) provides a similar argument about the limitation of usability studies, claiming that they lack "attention to politics and ideology" (p. 7). Michael Greer and Heidi Harris (2018) further these claims, stating, "We cannot simply substitute 'students' or 'learners' for 'users'"; instead, they choose the term "student-user" to distinguish between a user who "seeks to achieve a single task or goal" and a student who "is a learner, with complex, long-term needs and goals" (p. 15). These authors are concerned that language and frameworks emerging from commercial endeavors (making better products for end users) are inadequate, especially when considering student needs. Instead, Opel and Rhodes and Bjork call for merging rhetoric with UCD/usability studies to remind us of the complexities inherent in the use of any product.

Similarly, we have been asked how or if "user-centered" and "student-centered" practices are synonymous. We see two problems with conflating the terms. First, student-centered, as we understand it, was a movement to decentralize the classroom: from lecture to student-centered activities that promote learning (Barker and Kemp, 1990). Writing studies already has a long history of promoting pedagogies moving away from a lecture-centric classroom toward a student-centered classroom (Opel and Rhodes, 2018). Donna Kain (2003) explains that "student-centered approaches derive from constructivist views of education, in which the construction of knowledge is shared and learning is achieved through stu-

dents' engagement with activities in which they are invested" (p. 104). Viewing students as users is different from this movement. Student users are, instead, people who rely on resources created or chosen by an instructor or program administrator to facilitate their learning and complete their work.

A second problem is that authors who prefer "student-centered" instead of "user-centered" narrow the focus of user experience. As discussed in Chapter 1, the evolution from usability to user experience in technical and professional communication (TPC) has positioned itself as one of user advocacy. On the one hand, how UCD and usability are defined in industry does not need to be transferred verbatim to TPC classroom contexts or TPC research. However, user experience design and research methods can be used to generate user data and pedagogical products (such as syllabi, learning management system designs, iterative student profiles, program learning outcomes, etc.) in ways that consider student users innovatively. While we should never disregard the limitation of our research, user experience methods can help instructors and program directors iteratively design documents or test their own assumptions. It is, of course, the responsibility of TPC class and program designers to consider the rhetorical factors involved in creating course materials and spaces for learning. Whereas we understand the difficulty in conflating industry and academic practices, they are inextricably connected. To dismiss industry practices and terminology completely is to erase the history of our field.

While we acknowledge that these problems exist, in this collection we do not grapple with these terms extensively. Instead, we have allowed our authors to choose terms they are comfortable with, and they have not disappointed us. While some have chosen to use terms directly from UX, e.g., referring to students as "users" and curricula as "products," others have chosen to reference students with terms ranging from "student users" to "co-creators." As we wrapped up the collection, we considered asking for one final revision to make more terminology consistent throughout, but eventually we decided to let the differences stand. Our decision leaves the terms open for consideration and discussion, and we encourage readers of these chapters to arrive at their own conclusions.

UX as an Academic Practice and Solution

Awareness of the sometimes uneasy fit of UX terminology, we argue, does not weaken UX's potential as an academic practice. As we noted above, we prefer to think of UX (and experience architecture [XA], for that matter) in terms of the inquiry afforded. A UX toolkit offers teacher-practitioners many potential methods, as Crane describes in Chapter 1. These methodological tools, when applied in context-rich settings with student users, deliver data that confirm or deny hunches that gut instinct and lore have previously relied on. The chapters in this collection demonstrate how a UX toolkit can be employed to make innovative decisions about lessons/activities, courses, curricula, and extracurricular problems

or other academic challenges. Because readers may come to these chapters with a variety of questions or challenges, we considered four different organizations for the collection, each one providing a different user/reader experience through the collection as a whole. In the subsections below, we introduce the chapters through four different journey maps and invite readers to choose their own journey through the collection.

Focus on Student-Users Journey Map

In this first journey map, the chapter organization illustrates how UX methods allow teacher-practitioners to work with students to design course activities, lessons, and entire curriculum. Chapters fall into four categories: Situating User Experience, Understanding Users, Designing with Users, and Redesigning with Users, and chapters are ordered as they are in the table of contents (Figure 2.1).

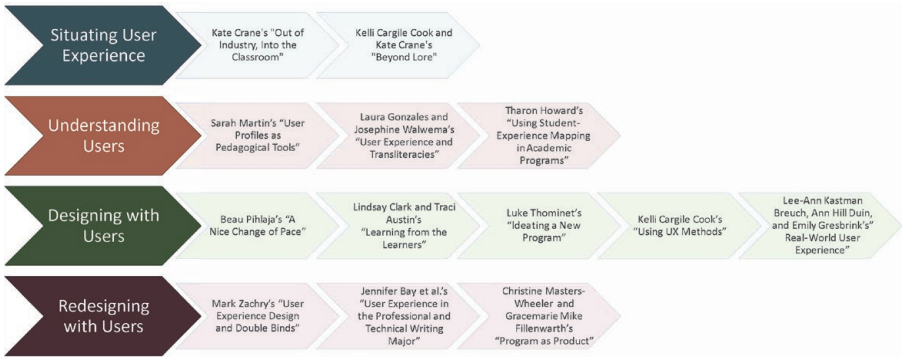

Figure 2.1. Focus on student-users journey map.

The first set of chapters following the introductory chapters—Understanding Users—provides examples of how surveys and journey maps can be used to collect data from students. Sarah Martin's chapter describes a series of surveys she uses throughout the semester to collect data from students on their expectations, majors, and interests in order to determine what workplaces to focus on when teaching a technical and professional communication service course. On the other end of the academic spectrum, Tharon Howard's chapter describes two case studies. The most detailed case presents an assignment his graduate students completed to collect user data in order to redesign a departmental website. Also working with graduate students, Laura Gonzales and Josephine Walwema's chapter explores a course design they developed with a transliteracy focus. In their chapter, four of their graduate students provide their own transliteracy narratives and describe the UX projects they implemented, ranging from a high school classroom to a non-governmental organization (NGO) website.

The next set of chapters—Designing with Users—explores how academic innovations can be identified and implemented by engaging with students who will

use them. Beau Pihlaja's chapter describes how he used UX methods to teach students in a pilot course, Texts and Technologies that Changed the World. Through an examination of the course learning management system (LMS) and syllabus, he asked students to consider how their experiences might suggest changes to these documents to better suit their needs. Lindsay Clark and Traci Austin's chapter provides a description of how they used a variety of methods, ranging from surveys to observations, to prototype an oral communication lab in their department. Luke Thominet's and Kelli Cargile Cook's chapters both discuss how they used multiple UX methods to write student learning outcomes and gauge the efficacy of new certificate and degree programs. In the final chapter of this section, Lee-Ann Kastman Breuch, Ann Hill Duin, and Emily Gresbrink recount their use of UX methods to design a mentor program between graduate and undergraduate students and their program's advisory board.

The final set of chapters explores how students can support the redesign of academic course assignments, courses, and programs. Mark Zachry's chapter identifies double binds as a problem instructors may face when they use UX methods to adjust student assignments within a course. His chapter considers how students' needs and wants can conflict with other course or administrative requirements. Both Jennifer Bay et al.'s chapter and Christine Masters-Wheeler and Gracemarie Mike Fillenwarth's chapter take on the revision of programs, but with different approaches. Bay and her student co-authors describe how they engaged students and alumni to assess their program's effectiveness, while Masters-Wheeler and Fillenwarth's chapter considers how program data gathered from a common student survey can be employed in two different academic programs.

Focus on Goals Journey Map

Another approach to this collection asks readers to consider what questions they seek to answer through UX inquiry. To ask questions through a UX lens, we need to have clear goals for what the data and process are seeking to accomplish. Goals, of course, affect scope:

- Does an individual assignment in a course need revision to better communicate the assignment requirements to students?
- Does an existing course LMS shell need revamping for a new term so students can locate content more easily?
- Is a program trying to revise its course offerings to appeal to students looking for courses focusing on professionalization?

All of these questions have a goal, and UX methods can be useful to design or redesign any of these new "products." The goal of the project, its scope, and the context must shape the UX process. Not only is this necessary to ensure teacher-practitioners have developed a product or system that considers student

experiences, but it is also necessary to create goals and develop a UX plan that matches the scope and context of the project. Doing so may lead to upending the linear process we typically follow in curricular design and assessment, but that process is not representative of the dynamic work UX professionals and researchers engage in every day. From a UX perspective, chapters in this collection can be organized into working with four curricular design/redesign goals: activity/lesson design, course design, curricular design, and extracurricular design. See Figure 2.2 for a journey map that illustrates this organization.

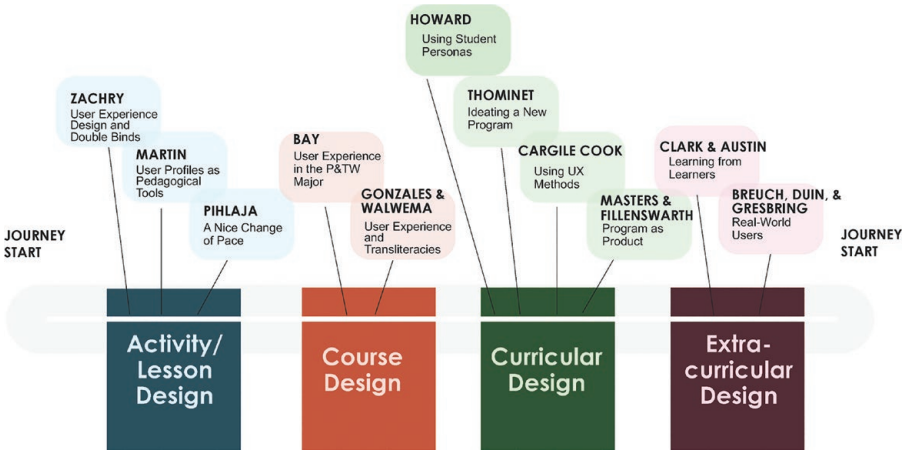

Figure 2.2. Focus on goals journey map.

Following this map allows readers to focus on specific areas of change, whether their interest is in making small adjustments to a class activity or adding new extracurricular activities between students and a successful advisory board. Chapters within each section can be read in any order.

Focus on Methods Journey Map

Although the third journey map has only three categories—understanding, looking, and making—it is more complex than the previous two. The journey map is based on Luma Institute's (2012) *Innovating for People: Human-Centered Design Planning Cards*, a card deck which categorizes the design process into three skill sets:

- **Looking**: Observing human experience
- **Understanding**: Analyzing challenges and opportunities
- **Making**: Envisioning future possibilities (n.p.)

Using Luma Institute's card deck, we sorted the chapters into these categories. Readers who decide to follow this journey map will find that some chapters appear in more than one category and under more than one method. For

example, Tharon Howard's chapter includes two case studies; within those case studies, he explains how his studies included multiple methods, including user profiles and personas, task analyses, and operative imaging. On the other hand, some chapters use only one method, such as Masters-Wheeler and Fillenwarth's surveys. For this reason, some chapters appear only once on the map.

By including a map that focuses on methods, we emphasize the idea that user experience is a methodology, as Brian Still (personal communication, February 24, 2020) frequently reminds us. As a methodology, user experience is a set of methods we engage in this collection to design innovative academic activities, courses, curricula, and extracurricular activities. Among UX's methods are the six Crane introduces in Chapter 1 (contextual inquiry, self-reporting, collaborative design studio, affinity diagramming, prototype feedback, and usability testing) as well as 14 additional methods that we have grouped using Luma Institute's categories. Figure 2.3 provides a journey map you can follow if you are particularly interested in specific methods and their application in this collection's chapters.

Figure 2.3. Methods journey map.

Focus on Design State Journey Map

A UX process can begin anywhere in the design process. Texts about UX tend to discuss UX from the beginning of a design process, focusing on human/user research and ideation. However, UX can begin anywhere in a design cycle. Sometimes, it is more useful to examine a current design, test that design, and redesign it to create better products or processes. In other cases, testing an existing design, learning about its weak points, collecting human/user research, and then redesigning is the best process for improving a design. This design state journey map's purpose is to meet our readers, or users, where they are. Based on where readers are in their design process, they can use the chapters associated with that design stage to help strategize their current and next moves in the design process. Some of these chapters overlap with previous stages' recommended chapters; however, as is the nature of user experience, we do not see these chapters needing to be followed linearly or sequentially. We invite readers to use these chapters where they best assist them in their design.

In this cyclical map (Figure 2.4), we use the user-centered design (UCD)/ human-centered design (HCD) design process map presented in Chapter 1 to place the collection's chapters in relation to the design stage they use or discuss. For research and defining human/user needs, we recommend focusing on Martin's, Thominet's, and Cargile Cook's chapters for studies that collect user research and incorporate that research in the design of student profiles, program learning outcomes, and program design.

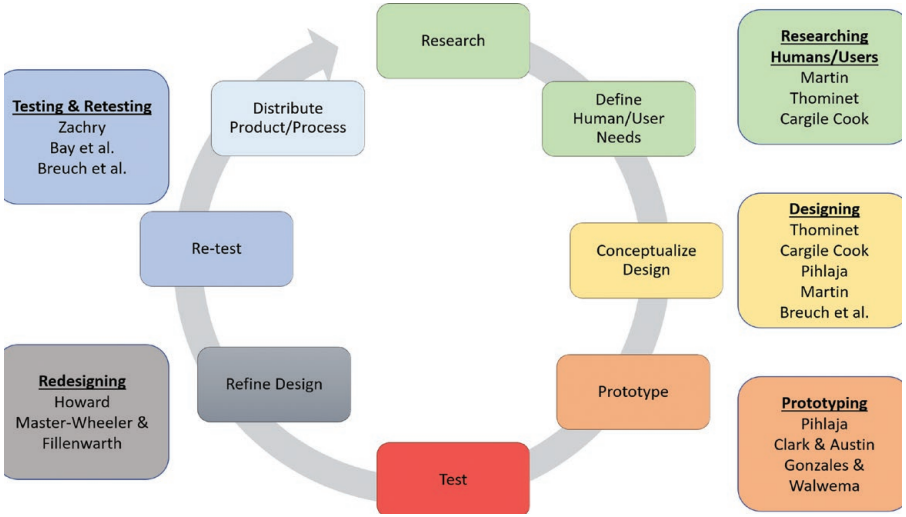

Figure 2.4. Design state journey map.

If the reader has researched and has analyzed that research to determine human/user needs, we recommend beginning with chapters that discuss designing

curricular products: Cargile Cook, Thominet, Pihlaja, Martin, and Breuch et al. These chapters discuss the design of curricula, outcomes, course resources, student profiles, and a mentoring program respectively. In all these chapters, authors detail the process they used to decide how to take their research and ideations to create new, contextually appropriate products or processes for their students and programs.

The prototyping chapters discuss the use of prototyping to create sketches of ideas, sometimes with students (as in the case of Pihlaja and Gonzales and Walwema), or to test ideas (in the case of Clark and Austin). These chapters are particularly useful for readers who have conceptualized designs but are looking for a way to incorporate these designs into a working model that can be tested.

The next stage—redesigning—skips the testing stage, not because testing is unimportant or should move elsewhere in the cycle, but because we grouped test and retest categories together (this will be discussed next). Testing is still an important stage to gauge and reflect on prototypes or existing products you are trying to learn more about. Redesigning assumes that at least one round of testing has already taken place (through usability testing or heuristic evaluation). Howard's and Masters-Wheeler and Fillenwarth's chapters both discuss redesigning a product based on feedback given for previous products and curricula.

Finally, the testing and retesting stage discusses the use of UX methods to test an implemented program (such as a mentoring program, academic program, or course curricula) and reflections based on these tests. Zachry's, Bay et al.'s, and Breuch et al.'s chapters exemplify the reassessment of previous work to indicate the success of this work and where improvement may be needed.

With these four journey maps, we have attempted to provide readers with multiple tables of contents to make the user experience of this collection adaptable for different users and goals. Though there are certainly endless ways to reimagine the journeys readers will take with this book, these are the four patterns we thought most useful. We invite readers, however, to make their own journey map with this collection and use it to best meet their needs.

User Experience as a Tool for Innovative Academic Practice

Whichever journey map readers decide to follow through this collection, we expect that they will find innovative ideas for using UX as an academic practice. UX methods, as Martin explains in her chapter, produce new insights grounded in student data. Similarly, Nick Carrington (2020) explains that he uses UX methods to "validate what I thought to be true along the way" (n.p.). As these teacher-practitioners note, using UX methods helps to document lore and support hunches with data. Further, it moves technical and professional teacher-practitioners from just teaching about user experience methods to actually using them

to improve their students' experiences. Even in situations like the double binds Zachry describes, taking a UX approach to academic innovation provides teacher-practitioners with a means to articulate the conflict that can exist between student needs or wants and instructor expertise and know-how.

As Janice Redish (2010) noted, "we are not our users, and users will always surprise you" (p. 193). Students are one user population in the technical and professional communication ecosystem. Other users are present too: faculty, staff, administrators, future employers, and accreditation agencies, among others. However, student know-how and expertise are too often silenced when faculty and administrators design course materials and build programs. When students feel they cannot complete an assignment or reasonably dedicate the time to complete program requirements, they know they have other options better aligned to their particular experience. Viewing students as users situates them in a place where we can truly study their needs and interactions with our courses and programs; in return, we can create content and design programs that students understand, and, through student feedback, we can improve them.

As we noted at this chapter's beginning, we believe instructors do UX every time they teach a class. Instructors use student feedback, observations from classes, and assessment to alter assignments or syllabi to better fit the needs of students and meet the outcomes of a course. While they may not be acknowledged formally as UX, certainly an element of UX exists in these practices. Engaging with UX design processes and methods takes the guesswork out of this common experience and replaces hunches with data. While UX practice is more time-consuming than relying on hunches, UX data provides unique situational insights about specific contexts in which we teach and learn, and, although UX methods naturally pair with the pedagogical work teacher practitioners do, we may not use them in a formalized, conscious way. We should.

References

Barker, T. T., & Kemp, F. O. (1990). Network theory: A postmodern pedagogy for the writing classroom. In C. Handa (Ed.), *Computers and community* (pp 1-27). Boynton/Cook.

Bjork, C. (2018). Integrating usability testing with digital rhetoric in OWI. *Computers and Composition*, *49*, 4-13.

Carrington, N. (2020). *Using UX/UCD methods to create a content strategy* [Doctoral dissertation, Texas Tech University]. Texas Tech University Libraries. https://ttu-ir.tdl.org/handle/2346/85744

Greer, M., & Harris, H. S. (2018). User-centered design as a foundation for effective online writing instruction. *Computers and Composition*, *49*, 14-24.

Howard, T. (2008). Unexpected complexity in a traditional usability study. *Journal of Usability Studies*, *3*(4), 189-205.

Jones, N. N. (2018). Human centered syllabus design: Positioning our students as expert end-users. *Computers and Composition*, *49*, 25-35.

Kain, D. J. (2003). Teacher-centered versus student-centered: Balancing constraint and theory in the composition classroom. *Pedagogy*, *3*(1), 104-108.

Luma Institute. (2012). *Innovating for people: Human-centered design planning cards*.

North, S. M. (1987). *The making of knowledge in composition: Portrait of an emerging field*. Boynton/Cook.

Opel, D. S., & Rhodes, J. (2018). Beyond student as user: Rhetoric, multimodality, and user-centered design. *Computers and Composition*, *49*, 71-81.

Redish, J. (2010). Technical communication and usability: Intertwined strands and mutual influences. *IEEE Transactions on Professional Communication*, *53*(3), 191-201.

Schon, D. A. (1984). *The reflective practitioner: How professionals think in action*. Basic Books.

Still, B., & Koerber, A. (2010). Listening to students: Usability evaluation of instructor commentary. *Journal of Business and Technical Communication*, *24*(2), 206-233.

3. User Profiles as Pedagogical Tools in the Technical and Professional Communication Classroom

Sarah Martin
Texas Tech University

Abstract: This chapter presents a 16-week exploratory study on developing student-user profiles in an introductory undergraduate technical and professional communication (TPC) course. It explores the following research question: *How can TPC instructors leverage student-user profiles to guide course and lesson design decisions in an introductory TPC course?* Presenting three iterations of a student-user profile, the chapter describes two key activities that TPC instructors can practice and refine for their own courses and lessons: (1) developing and iterating a student-user profile before, during, and after a course; and (2) understanding how information from a student-profile can inform course and lesson design decisions. It addresses the role of user-centered design (UCD) approaches in TPC activities such as course and lesson design, and encourages TPC instructors to conceptualize UCD as a philosophy and methodology (Johnson, 1998; Norman, 1986, 1999; Still & Crane, 2016) to apply UCD approaches in the TPC classroom. Benefits and challenges of developing a student-user profile are discussed.

Keywords: user profiles, user experience, user-centered design, technical communication pedagogy

Key Takeaways:

- Developing student-user profiles grounded in UCD methods offers a way for technical and professional communication instructors to apply UX approaches to their course and lesson design.
- Following UCD methods to develop a student-user profile can help TPC instructors and department chairs avoid self-referential design where they impose their own understanding or mental models of how students should interact with, understand, and apply course material.
- Development and use of a student-user profile as a pedagogical tool is not unique to TPC. A student-user profile can be used to understand the student experience in broad academic settings, but TPC instructors should lead this charge.

Developing user profiles is a central activity in user-centered design (UCD) projects that support user experience (UX) inquiries (Cooper, 2004; Garrett, 2011; Pratt & Nunes, 2012; Still & Crane, 2016). User profiles are visual and textual

DOI: https://doi.org/10.37514/TPC-B.2022.1367.2.03

composites that codify actual observational, self-reported, or performance data about a user. They help guide decision-making during a design process by keeping stakeholders' needs at the forefront of a UX project. UX projects may address product, process, and program development, but course and lesson design has not always been considered a primary venue for UX or related UCD activities, such as user profile development (K. Crane & K. Cargile Cook, personal communication, 2019; Getto & Beecher, 2016; Lallemand et al., 2015). Approaching the curriculum design process from a UX perspective with associated UCD methods, however, can ground curriculum decisions in student-user data.

Students are not always framed as central stakeholders in course and lesson design (Still & Koerber, 2010). Course and lesson design decisions are often the result of expert knowledge; seasoned instructors, program directors, and department chairs regularly evaluate, brainstorm, and codify what will "work" best for users (students). Yet this expert-based design approach does not always result in user-centered outcomes (Garrett, 2011; Lowgren & Stolterman, 2007). In this way, developing user profiles—student-user profiles—grounded in UCD methods offers a way for technical and professional communication (TPC) instructors to apply UX approaches to their course and lesson design. A UX approach positions students as central stakeholders, rather than functional by-products (K. Crane & K. Cargile Cook, personal communication, 2019), as curriculum decisions are made. Accordingly, TPC instructors should apply UCD methods to the curriculum design process to better understand the student-user experience.

This chapter presents a 16-week exploratory study on developing student-user profiles in an introductory undergraduate TPC course. It offers a starting point to explore the following research question: *How can we leverage student-user profiles to guide course and lesson design decisions in an introductory TPC course?* This exploratory study describes two key activities that TPC instructors can practice and refine for their own courses and lessons:

1. developing and iterating a student-user profile before, during, and after a course
2. understanding how information from a student-user profile can inform course and lesson design decisions

First, I will discuss the role of UCD approaches in TPC activities such as course and lesson design. I will address what TPC instructors can gain by conceptualizing UCD as a philosophy and methodology to apply UCD approaches in the TPC classroom (Johnson, 1998; Norman, 1986, 1999; Still & Crane, 2016). Next, I will review how user profiles support UCD projects, noting how they are developed, iterated, and consulted to make design decisions (Baxter et al., 2015; Bias & Mayhew, 2005; Ceraso, 2013; Garrett, 2011; Ma & LeRouge, 2007; Still & Crane, 2016). I will then describe the methods I used to develop, alter, and apply my student-user profile during the exploratory study and include models of my

draft student-user profile during the semester to its current state. I will present mock-ups of different phases of the student-user profile and address how I altered both the profile and course content based on profile development.

Lastly, I will outline the benefits of developing and applying a student-user profile during the course and offer suggestions to fellow TPC instructors who want to adopt similar profile development practices. I will also discuss why student profiles are useful in individual course and lesson development and how they might be applied in broader curricula decisions (e.g., department meetings, online vs. live class course design, designing for international students, etc.). In turn, this chapter showcases one approach to making curriculum design decisions at the course and lesson level more student-user-based rather than solely expert-based.

UCD as a Philosophy and Methodology in TPC Classrooms

For technical and professional communicators (TPCs), understanding *users*—students or other institutional stakeholders—is not just a pretense to ensure users "get" the content, follow directions, or comply with product or process requirements. TPCs bring a unique reverence for user advocacy when defining, addressing, and evaluating problems (Andersen et al., 2013; Anschultz & Rosenberg, 2002; Brumberger & Lauer, 2015; Cargile Cook, 2002; Carliner, 2001; Ceraso, 2013; Cleary & Flammia, 2012; Hart-Davison, 2013; Johnson, 1998, 2004a, 2004b; Mirel, 2013; Redish & Barnum, 2011; Rude, 2009; Schriver, 2013). This reverence for user advocacy can extend to pedagogical and curriculum design decisions.

Applying UCD methods such as user-profile development in the classroom is ultimately about identifying and honoring a user's "knowledge of know-how and use" (Johnson, 1998, p. 5) or honoring the knowledge that users bring to a communication interaction. Accordingly, drawing on UCD methods to honor student knowledge in the curriculum design process is a suitable step for TPC instructors.

For TPC instructors to successfully apply UCD methods to course and lesson design, they must conceptualize UCD as both a philosophy *and* methodology. As Brian Still and Kate Crane (2016) put it, UCD is "something to be believed but also practiced" (p. 44). Applying UCD methods when we make curriculum, course, or lesson design decisions allows TPC instructors and administrators to holistically value student users in these contexts. It is the valuing of user knowledge, of *metis*, in technical communication that creates a "rhetoricized space" (Johnson, 1998, p. 33) where users can "negotiate technology in use and development" (Johnson, 1998, p. 33) through a "dialogic relationship" (Salvo, 2001, p. 276). Honoring user knowledge to design meaningful systems is the work of UCD. UCD as a methodology, then, provides a vital framework for TPCs to place student users at the center of the course and lesson design process.

At the heart of sound UCD methodology is an iterative design process with representative users, representative tasks, and triangulated user research and usability testing methods (Barnum, 2011; Cooper, 2004; Dumas & Redish, 1999; Garrett, 2011; Hackos & Redish, 1998; Krug; 2014; Pratt & Nunes, 2012; Still & Crane, 2016). UCD as a methodology then follows "its own set of methods and principles that serve to execute the methodology's theoretical concepts" (Still & Crane, 2016, p. 44). There is no single path, or to Norman's (1986) concern, no single method or specific combinations of preferred methods to "do" UCD. There are hundreds of UCD methods (Hanington & Martin, 2012). More so, UCD draws on methods from many different fields. Contextual inquiry, for example, which is heavily regarded in UCD (Beyer & Holtzblatt, 1999), stems from ethnographic research (Lowgren & Stolterman, 2007). A UCD method is suitable or not based on the researcher's inquiry, the design situation (Lowgren & Stolterman, 2007), and the determination of how the information gleaned from a particular method informs the design process.

In short, UCD as a philosophy in TPC is necessary, but not sufficient. UCD as a philosophy and methodology offers principles and frameworks to champion user perspectives throughout the design process. UCD methods, such as user profiles, offer a fruitful means for TPC instructors to bring a UCD approach to course and lesson design.

User Profiles as a UCD Method

As a method, user profiles help UCD practitioners understand user goals, the use environment, and use context so that they can make informed design decisions. *User profiles* are documents that codify actual observational, self-reported, or performance data about a user. As Still and Crane (2016) put it, "A user profile is a set of defining characteristics, based on your research, that represents a particular group of users" (p. 101). They suggest that user profiles help distinguish different user groups and the "most significant representative characteristics" (p. 195) of these groups.

Accordingly, user profiles can include real demographic information; observational or self-reported data about user habits, goals, motivations, and pain points; and even direct user quotes that capture their perspectives (Baxter et al., 2015; Bias & Mayhew, 2005; Ceraso, 2013; Garrett, 2011; Ma & LeRouge, 2007; Still & Crane, 2016). Like a customer or empathy map (Cao, 2018; Knox, 2014), user profiles can help designers consider what a user thinks and says, sees, does, hears, and feels as they complete primary tasks and goals. In turn, user profile development strategies generate actionable user data that UCD practitioners can use to design products, systems, content, and processes that help users achieve their primary goals, or, as Janice Redish (2010) puts it, to help users simply do the work they need to do.

Personas differ from user profiles in that they are fictionalizations of user profiles. That is, once a user profile is generated based on user research, it can be

repurposed into a persona to help design teams understand broader groups of general user needs. As Jesse Garrett (2011) notes, "A persona is a fictional character constructed to represent the needs of a whole range of real users" (p. 49). He explains that personas can serve as "example cases during user experience development" (p. 51). That is, while a user profile is built upon specific, individual user data, a persona offers a macro synthesis of these user insights. Alan Cooper (2004) explains this relationship:

> Personas are not real people, but they represent them throughout the design process. They are hypothetical archetypes of actual users. Although they are imaginary, they are defined with significant rigor and precision. . . . Personas reveal themselves through our research and analysis. (p. 101)

Creating user profiles is part of this UCD research and analysis that can be further developed into personas as the design process evolves.

In summary, profiles and personas differ in that they are actual vs. fictionalized representations, but they are both generated from user data and incorporated into UCD projects (Getto & St. Amant, 2015; Pratt & Nunes, 2012; Still & Crane, 2016; Unger & Chandler, 2012; Van Velsen et al., 2013). A user profile should therefore include relevant information that will help a designer anticipate user needs for the design outcome. In turn, TPC instructors can leverage student-user profiles to help guide course and lesson design decisions by considering student expectations and behaviors with the course content.

Methods: Developing Student-User Profiles for an Undergraduate TPC Course

My goal for this exploratory study was to see how creating a student-user profile might facilitate course and lesson design decisions in an introductory TPC course. At the time of data collection, I was teaching two 16-week synchronous online sections of an undergraduate TPC course at a large state university. The course fulfilled a general university degree requirement and included 25 students from a variety of majors and school years in each section.

I had previously taught the same course at the same institution but perceived a disconnect between the course material and student understanding about the material, learning management system, and course expectations. In response, I reframed my role as a TPC instructor facing student confusion to *a designer facing a design problem for users*. I had some general demographic data about my student users (i.e., year in school, major, residency) from institutional databases, but I only had a superficial, anecdotal recollection of their attitudes, expectations, challenges, motivations, and perspectives about the course material based on prior teaching experiences.

Accordingly, I drew on specific observational, self-report, and student performance information during the new semester to develop a student-user profile to better understand my students and their needs. I did not apply for or receive Institutional Review Board (IRB) approval for this study because I am reporting on the process I used to develop a student-user profile rather than directly reporting on student data. The user profiles I developed and present include composite characteristics that represent a particular user group (Still & Crane, 2016).

Recall that I focused on two key activities to explore how TPC instructors might leverage student-user profiles to guide course and lesson design decisions:

1. developing and iterating a student-user profile before, during, and after a course
2. understanding how information from a student-user profile can inform course and lesson design decisions

Table 3.1 describes the time period, data documentation, and analysis methods that I used to develop and refine different iterations of my student-user profile.

Table 3.1. Data Collection and Analysis Methods

Time Period	**Data Documentation Method**	**Data Analysis Format**
Before 1st class meeting	General Information Questionnaire	Google Forms, 14 questions, exported to Excel spreadsheet
Develop Student-User Profile		
Class meetings	Student questions, homework sharing, class discussion	Diary entry in course log
Assignment grading	Major assignments 1 and 2, major problems and success implementing TPC principles	Diary entry in course log
Mid-term	Midterm Questionnaire	Google Forms, ten questions, exported to Excel spreadsheet
Refine Student-User Profile		
Class meetings	Student questions, homework sharing, class discussion	Diary entry in course log
Assignment grading	Major assignments 3 and 4, major problems and success implementing TPC principles	Diary entry in course log
Refine Student-User Profile		
After course completion	Institutional Course Evaluation	TBD

First, I reviewed self-reporting data from a 14-question General Information Questionnaire (Appendix A) that I send to students as standard practice before the course begins. I issue the General Information Questionnaire to my students each semester to learn about who my students are and their general course and professional goals. The questionnaire is voluntary, and I have used past data to address student concerns regarding accessing online courses, for example, or to plan specific lessons regarding TPC artifacts (e.g., if I know many students are engineering majors, I will find TPC artifacts in the engineering field for specific lessons).

I emailed the General Information Questionnaire to both of my course sections one week before, three days before, and one day before our first class meeting. I received 35 responses (87% response rate) and exported the data into a new Profile Data Excel spreadsheet. I reviewed and isolated information that would help me distinguish the "most significant representative characteristics" (Still & Crane, 2016, p. 195) of my student users based on my design goal—to see what I could learn by developing a student-user profile. In my case, understanding (1) my students' motivations for taking the course, (2) their expectations for what the course was about, and (3) their current understanding of the course topic was valuable. Profile development practices stress a need to understand what users care about, their mental model when they engage in an experience, or similar perspectives that help characterize the user experience (Cooper, 2004; Garrett, 2011; Getto & St. Amant, 2015; Pratt & Nunes, 2012; Still & Crane, 2016; Unger & Chandler, 2012). Accordingly, I created an Excel spreadsheet that reflected student motivations, expectations, and their understanding of TPC. The spreadsheet had the following headings and corresponding information:

- Motivations: rationales for why students were taking the course, including what skills they hoped to achieve by taking the course, or what university requirement they hoped to fulfill
- Expectations: what students anticipated the course might be about, including specific subjects, strategies, or assignments, that may or may not be addressed
- TPC Understanding: what students indicated TPC was about, what TPC was not about, and how they defined different TPC terms

I also isolated general demographic data and included a summary of my students' majors and year in school in the spreadsheet.

Next, I reviewed the data under the Motivations, Expectations, and TPC Understanding categories for alignment with student habits, goals, motivations, and pain points about the course (Cooper, 2004; Garrett, 2011; Getto & St. Amant, 2015; Pratt & Nunes, 2012; Still & Crane, 2016; Unger & Chandler, 2012). I annotated this data on a piece of paper separated into six general user profile categories that were relevant for my study goal. This paper became the start of my student-user profile. (See *Results: Using Student Profiles to Inform Curriculum De-*

sign for a description of profile categories and iterations).

During the semester, I reviewed additional questionnaire and observational data to refine my student-user profile. That is, I incorporated new questionnaire and observational information about student comments and performance in a diary log format (Rolfe, 2006; Tracy, 2013) to help triangulate the user data with user see-say-do information (Still & Crane, 2016) as a guide. I took notes during class discussions, assignment reviews, and on student questions regarding the course content. For example, if a student commented that TPC only seemed relevant to writing, I noted this in the "Thinks TPC is About" part of my user profile. I also noted problems and successes that students had applying TPC principles in the first and second major course assignments, and subsequently their third and fourth major assignments. I completed a similar process with the Midterm Questionnaire information. I emailed students and posted on the course Blackboard page a link to a second, 10-question Google Forms Midterm Questionnaire (Appendix B). (This questionnaire is also standard practice in my course.) I received 32 responses (80% response rate) and exported the data into an Excel spreadsheet to compare any new relevant information about students' experiences with my user profile.

As later discussed, the student-user profile categories expanded or shifted based on new insights from the observational, self-report, and student performance information during the semester. I then incorporated data from my formal institutional course evaluation for additional user insights.

Results: Using Student Profiles to Inform Curriculum Design

This exploratory study aimed to accomplish two key things: (1) demonstrate a way for TPC instructors to develop and iterate a student-user profile before, during, and after a course and (2) showcase how information from a student-user profile might inform course and lesson design decisions. Suitably, this section will review the study results by explaining the process I used to develop and refine my student-user profile. I will also offer specific examples of how insights from my student-user profile directly informed course and lesson design decisions.

Student-User Profile Iteration A

As previously mentioned, the initial draft of my student-user profile was based on general student demographic data and student responses to a 14-question General Information Questionnaire. Based on this information, I concentrated on six primary categories that describe the TPC student. I focused on these six categories because they helped me better understand my TPC student user: a personifying quotation, demographic information, student perceptions of TPC, concerns, needs, and wants. That is, these categories helped me account for student perceptions,

expectations, and needs. While some of these category themes are common in user profile or persona development (Cooper, 2004; Garrett, 2011; Pratt & Nunes, 2012; Still & Crane, 2016), I did not create these specific categories before I began my data collection. Rather, I based these categories on data from the General Information Questionnaire and the course registration list.

I began with a basic pen and paper drawing for my first student-user profile. (Note: the drawings were refined to a higher fidelity in PowerPoint for publication and legibility.) Figure 3.1 illustrates the first iteration of my student-user profile. It includes one box for each information category, which I labeled with the category title. Next, I listed relevant information for each information category.

Personifying Quotation: In the first box, "Intro to TPC Student," I included a personifying quotation based on student questionnaire comments. The personifying quotation is a general synthesis—in my own characterization—of user information that I reviewed for the student-user profile. The quotation framed the general attitude of my students and their concerns before the first day of class.

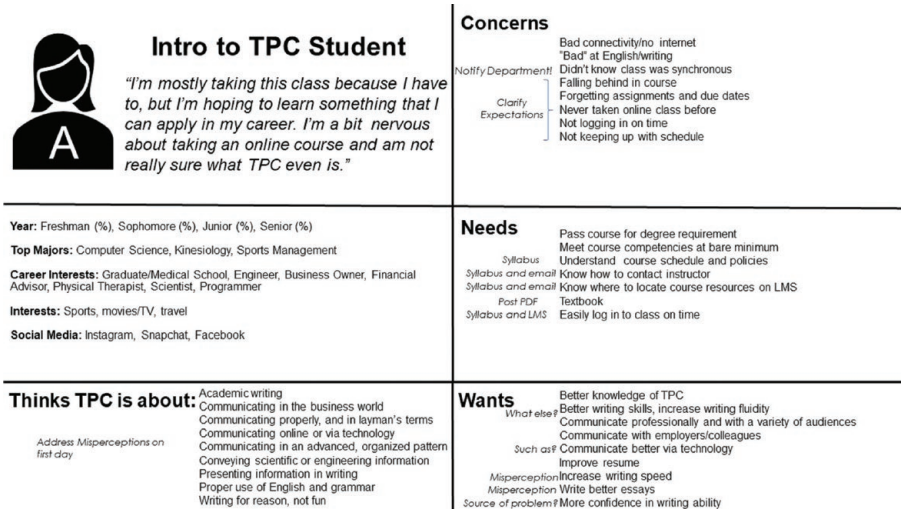

Figure 3.1. Student-user profile A.

Demographic Information: The second student-user profile category, general demographic information, indicated who my students were, their interests, and some basic TPC habits. I documented their year in school, major, career interests, leisure interests, and social media use. The most useful part of this data in terms of lesson and course design was student majors and career interests. As you will read in subsequent sections, I removed the general demographic information from my second and third iterations of the student-user profile. In these profiles, I focused more on documenting student perspectives about TPC content because it more meaningfully informed my lesson design.

Perspectives about TPC: The third category pinpointed what my students thought TPC was about. Recall that students made a variety of statements via the General Information Questionnaire or during class discussions about what TPC was. Their responses varied from simplistic to partial definitions, and sometimes they referenced specific genres and mediums involved.

Concerns: The fourth category identified three major student concerns about the course: students did not know the course met synchronously, they were uneasy about the online medium, and they were nervous they might do poorly in the course based on previous English class experiences.

Needs and Wants: The fifth and sixth categories of my student-user profile included student needs and wants. As an instructor (serving as a course designer), I had to anticipate and distinguish student needs and wants. For example, I based the information in the student needs category on student questionnaire responses, my previous instructor experience, and department and university initiatives. The information focused on passing the course, understanding the main concepts, and successfully functioning in the course. Student wants were directly informed by the introductory questionnaire responses.

Course and Lesson Design Changes (Student-User Profile A)

I was able to make five immediate course and lesson design changes before the course started based on my student-user profile draft. First, I included more definitional TPC work in the first lecture. Creating the user profile gave me insight into my students' attitudes towards the course: they were mostly apathetic about it, they were unsure what TPC was, but they were looking forward to at least making a resume. In response, I presented multiple TPC definitions to highlight how TPC differs from and complements communication practices and products in different career fields. (Note: I learned from the demographic information in my user profile that some of my students were public relations and marketing majors, so I chose to explain how TPC related to these fields because of this finding.)

Second, I selected TPC documents and scenarios common in my students' desired career fields to illustrate course concepts (e.g., patient discharge and medication instructions for aspiring medical professionals) rather than choosing random examples that might generate engagement. Using these documents resulted in rich discussion where students offered personal experience to support the concept. For example, one student shared their tattoo care instructions as an example of bad TPC.

Third, based on my work to understand student concerns for my profile, I was able to immediately notify the department about student registration confusion. As the student-user profile indicates, students were concerned that the course was synchronous because they did not understand that during registration; they had concerns about scheduling and sufficient internet access. Since these student concerns were captured in the profile, the department could accommodate students needing to change sections before the course began and could alter the

registration process for subsequent semesters. Fourth, and related to my new knowledge about student confusion over the synchronous course, I refined the syllabus to emphasize important components of a synchronous online course. I did not realize that most of my students thought the course was asynchronous, so this was a meaningful content change.

Lastly, having a better understanding of student needs meant I could prepare responses to student questions or confusion ahead of a class meeting or plan to ask particular clarifying questions during a class meeting. For example, the student-user profile illustrated key student misperceptions—that we would focus heavily on writing speed or essays. In turn, I made a point to review what the course would particularly cover and *not* cover, rather than just sharing the general learning objectives (that might leave them still thinking we were writing essays!). Information in the student wants category, for example, guided me to ask clarifying questions of students; I could plan to ask in a lecture what they were specifically hoping to learn about "communicating via technology" (which they shared on the questionnaire).

Overall, preparing a student-user profile draft before the course started let me make actionable plans and changes to course content and lesson design. Figure 3.1 also illustrates the personal notes that I made in each category to facilitate this process.

Student-User Profile Iteration B and C

During the second and third student-user profile iterations, I refined the profile to better understand and clarify student perceptions about the course and its content. I reviewed student assignment performance, my diary log, and midterm questionnaire information (see Methods) and made three primary changes to the student-user profile in response.

First, I removed the demographic information. Students' school year, for example, did not indicate a key difference in student perceptions or experience based on class discussion or assignment performance. This change streamlined my profile to include more relevant observational data, with a "Think & Say" category to more pointedly capture student perceptions about the course content. *"Think & Say" statements* in a user profile capture what a user might state or contemplate when they interact with a product or process (Still & Crane, 2016).

Second, I included a "Do" category that captured relevant student practices such as their willingness to share examples during class discussion, their confusion over certain course concepts, and their failures or successes following assignment guidelines (see "Do," Figure 3.2). I also expanded the "Challenges" category to include problems students had with the course content. For example, I noted that while students were remembering certain concepts, they were also overgeneralizing their application (see "Challenges," Figure 3.2). I still included general student challenges from the first iteration of the student-user profile because they

hindered student performance: falling behind in the course, missing due dates and assignments, not logging in on time, not keeping up with the schedule, and having technology problems during class.

Overall, in iteration B and C, I was able to include more detailed information about student challenges, needs, and wants (see Figure 3.2 and Figure 3.3) as I reflected on user see-say-do (Still & Crane, 2016) information. While some of the general student needs remained the same from iteration A to C (e.g., pass the course, meet minimum requirements), the biggest change was greater specificity in student needs and wants as I refined the student-user profile.

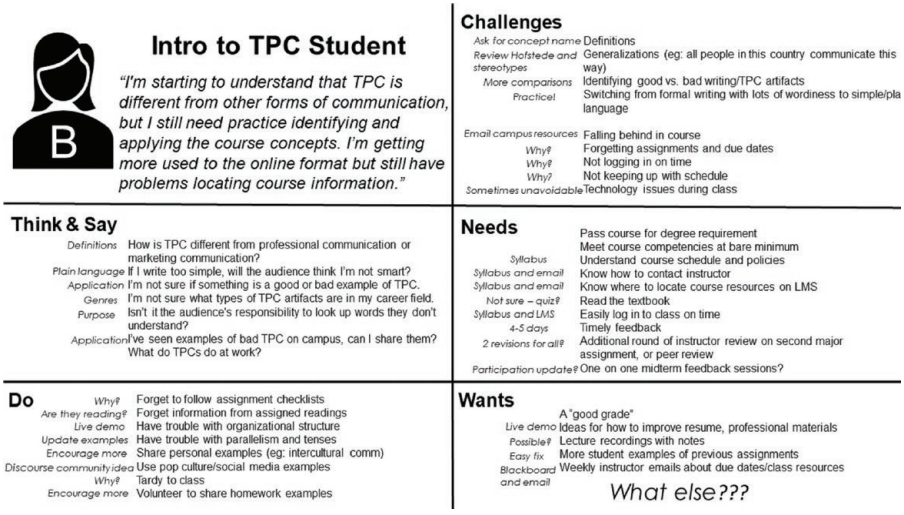

Figure 3.2. Student-user profile B.

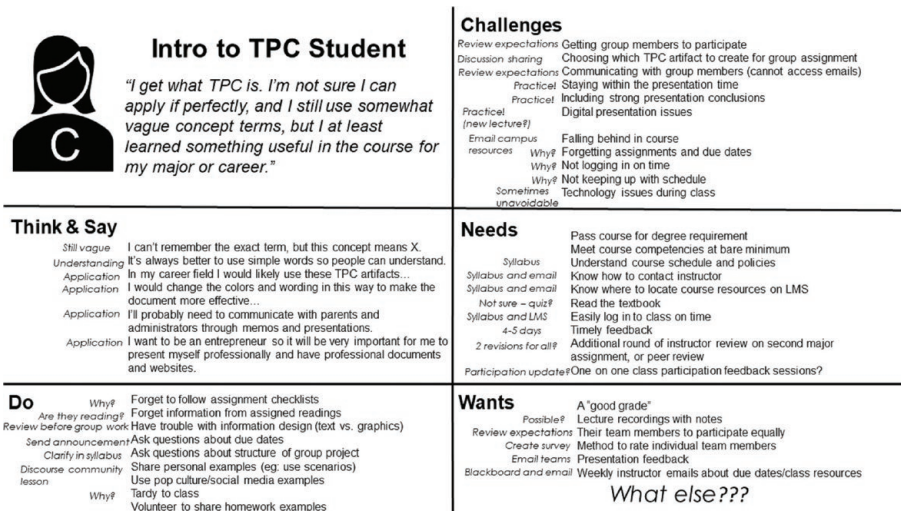

Figure 3.3. Student-user profile C.

Last, I refined the personifying quotation. Recall that the *personifying quotation* is a general synthesis, and my own characterization, of user information that I reviewed for the student-user profile. The quotation in iteration B and C is my characterization of what I observed users see, say, or do during the course (Still & Crane, 2016). The personifying quotes in iteration A through C provide a distinctive view of the student experience as students progressed through the course:

> Iteration A: "I'm mostly taking this class because I have to, but I'm hoping to learn something that I can apply in my career. I'm a bit nervous about taking an online course and am not really sure what TPC even is."
>
> Iteration B: "I'm starting to understand how TPC is different from other forms of communication but still need practice identifying and applying the course concepts. I'm getting more used to the online format but still have problems locating course information."
>
> Iteration C: "I get what TPC is. I'm not sure I can apply it perfectly, and I still use somewhat vague concept terms, but I at least learned something useful in the course for my major or career."

Refining the personifying quotation in each iteration meant I could detect a change in student attitudes, experiences, and competencies at different points of the course.

Course and Lesson Design Changes (Student-User Profile B and C)

I made direct pedagogical changes during the course based on iteration B and C of the student-user profile. Some changes were simple and procedural:

- uploaded more student examples from previous assignments onto the LMS
- created a live video demo of me grading an assignment where I emphasized specific course concepts such as information design based on student challenges and needs in the student-user profile
- provided additional student examples and a grading video in response to the "Think & Say" profile B category (e.g., "I'm not sure if something is a good or bad example of TPC") and C category ("I can't remember the exact term, but this concept means X")
- emailed a class recap after each class that repeated due date information already available on the LMS, and included assignment due dates on all lecture slides, and other LMS locations besides the physical assignment, based on student challenges with forgetting or not locating due dates

A larger pedagogical change included a new discussion activity about genres. In iteration B, for example, I learned that students were grappling to

understand what TPCs might do in the workplace or what TPC artifacts they might have to create or manage in the workplace if they do not become TPCs. In response, I altered my lesson on genres to include an exercise where students brainstormed potential TPC artifacts that they might be responsible for in their desired career field. I documented the genres for each career field in a notebook that was visible on the screen during class (see Figures 3.4 and 3.5). (Note: we started off with presentations and expanded to broader genres as the discussion evolved.) We discussed which genres overlapped and what TPC concepts might be important for each genre. I often used examples of the specific artifacts my students mentioned during this genre activity to illustrate concepts in other lectures.

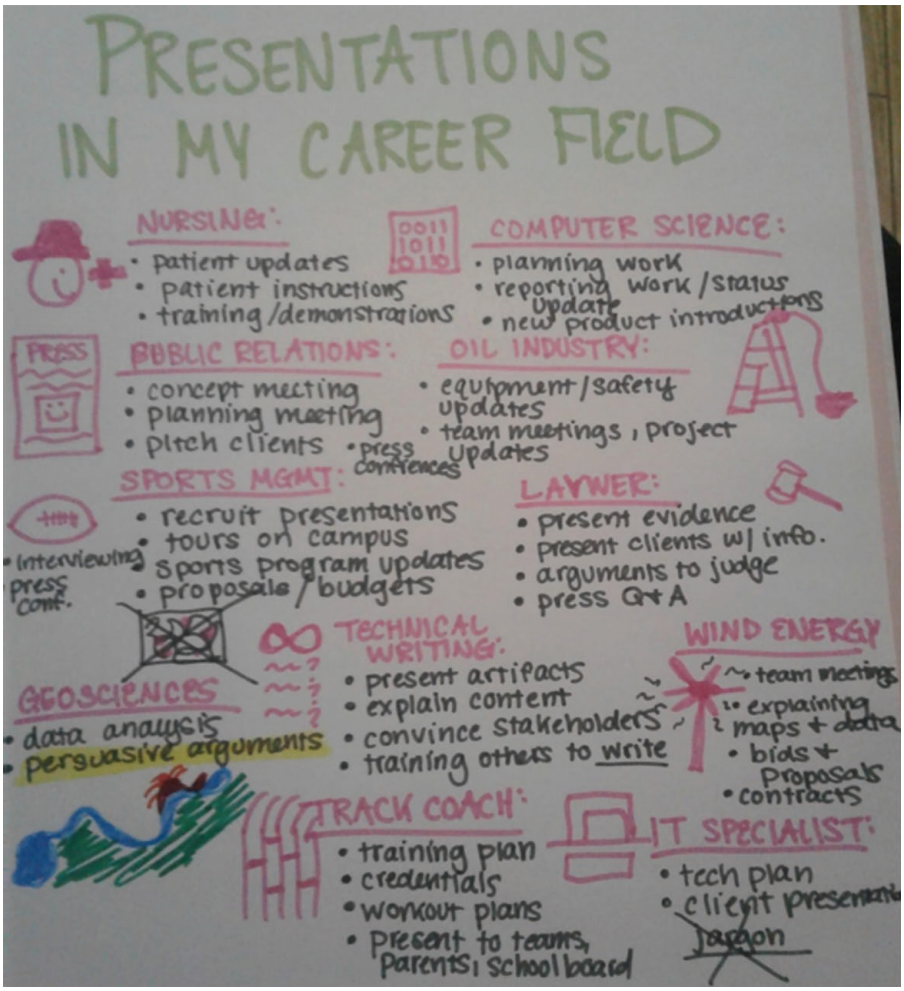

Figure 3.4. Potential TPC artifacts in student career fields.

Figure 3.5. Additional potential TPC artifacts in student career fields.

Adopting Student-User Profile Development

I offer the following suggestions to fellow TPC instructors who want to adopt similar profile development practices. First, start small with low-fidelity activities

where the actual features and functions of the profile are minimal (Garrett, 2011); paper, pencil, and a class roster are just fine. You do not need colorful photos, an interactive digital profile, or complete academic background information for every student. A student-user profile will ideally end up as a robust, detailed tool to help you make informed pedagogical decisions. You may have information about how your students conceptualize TPC, interpret assignments, and even navigate an LMS. But starting out, all you need is a piece of paper and some general student information from your registered student list.

On the paper, simply place the title of your student user in the center. Review the demographic information that you have about your students (i.e., year in school, major, hometown). Determine if there are any patterns that create relevant user categories. For example, are all your students TPC majors? Are they all freshman? Are they a mix of non-majors and different school years? Segmenting this demographic information can help you consider how to present TPC on the first day of class with a strategic level of technicality (e.g., "genre" vs. "types" of communication for majors and non-majors respectively). Think about what else you might know about your students to start building your student-user profile. Do you have any international students? Do you have students from different parts of the country? These distinctions may or may not be relevant based on what you subsequently learn about your users, but they offer simple starting points to consider as you brainstorm student perspectives until you can refine them with observational and self-reporting data.

Starting small with a low-fidelity version of your student-user profile also gives you flexibility to adjust and identify new profile categories that will strengthen your synthesis of student perspectives and needs. For example, you may decide that demographic information such as year in school is not as relevant to student perceptions about TPC content. By being flexible with your student-user data categories you can simply follow the data to identify more meaningful categories as you interact more with students. Table 3.2 lists sample student-user questions to focus on at the lesson, course, and curricular design level as you start to develop your student-user profile.

It's important to be open to trial and error as you create and iterate your student-user profile. Creating a user profile is a research activity; like all research, new questions and insights will emerge. Alter your student-user profile categories as needed. The point is to develop a student-user profile that helps you describe and understand the TPC student in relation to a specific lesson, course, or program.

In addition to starting small with a low-fidelity student-user profile, you should document assumptions and misperceptions—from both students *and* you. Were you sure that juniors and seniors would understand writing in a professional style and tone more easily than underclassmen because they have taken a composition prerequisite? Were you surprised that a freshman knew more about information design because they saw a student project about information design

and poster presentations featured on your department web page? Understanding and documenting what our student users come into our courses knowing (or not knowing) and where they are learning about TPC outside our immediate classrooms can strengthen the student-user profile. More importantly, it can also help you make departmental suggestions about where students might be looking for information about TPC programs. Students might also vocalize assumptions about content and assignments (e.g., "I figured that everyone in the audience spoke English so I didn't see a reason for visuals," and "The assignment checklist didn't give examples of what a professional font was so I just used the font you used in the syllabus"), which can guide areas of clarification for instructors and limit the number of frustrated students who might be nervous about an assignment requirement.

Table 3.2. Sample student-user questions for lesson, course, and curriculum design

Lesson Design	What do students think TPC is? What do students think the difference between TPC and other communication or writing courses is? What types of TPC documents do students encounter in a typical day? What types of TPC documents do students encounter in their major? What types of TPC documents do students encounter on campus? What popular culture reference might students understand?
Course Design	What are students' frustrations about taking this course? What are students' misperceptions about taking this course? What do students think this course is about? What are students' goals for this course? (Besides an "A") What are students' career goals and how do the TPC course and assignments support them? What campus organizations are students involved in that they could support with TPC assignments?
Curriculum Design	Why do students select TPC as their major? Why do students drop TPC as their major? How do students think our TPC program differs from other writing or communication programs? Where are students learning about curriculum/major course offerings? What order do students expect courses to be offered in? What skills do students expect to learn as a TPC major? Where do students find information about the curriculum? Do students understand the major/minor requirements?

For instructors who decide to develop student-user profiles, further research regarding the profile development process, student engagement, and department collaboration is beneficial. Research about the profile development process can help determine, for example, how long one iteration of a student-user profile is relevant, or when instructors or departments should start from scratch. What system, artifact, or process you are trying to improve will determine whether an existing profile can be iterated or a new profile should be created. Specifically, your design inquiry, or what you are trying to learn about users to improve their experience, (e.g., how do TPC students use the LMS?) will determine how much a profile must be altered or discarded. In short, your design inquiry will guide your student-user profile development activities. Be open to altering or creating new profiles, but remain focused on understanding your representative users (Barnum, 2011; Cooper, 2004; Garrett, 2011).

Different profile development processes might also include more formal test session environments where instructors can ask more direct questions about student perceptions. For example, because I was logging student comments and actions during class sessions, I was not always able to stop and ask follow-up questions about related insights. If a student stated during class discussion that they expected to learn new technologies in the course while in the same breath mentioning they chose PowerPoint for the presentation they abruptly started to give, it was not an appropriate time for me to ask questions. I could not ask which technologies they were hoping to learn or what gave them the impression, from the course description or elsewhere, that we might do so.

Reporting on student engagement in the profile development process is also useful. TPC instructors might consider applying participatory design methods (Muller & Druin, 2009; Sanders, 2002; Schuler & Namioka, 1993), having students work in groups to create their own profile, or having students discuss whether an instructor-developed profile is an accurate reflection of their student experience. Engaging students in the profile development process may clarify student perspectives as users can put things into their own words and reduce instructor assumptions about the student experience. However, TPC instructors should triangulate their profile data with what they observe students do (Still & Crane, 2016).

Lastly, reporting on departmental collaboration in creating or evaluating student-user profiles can tell us how, and if, student-user profiles inform departmental decisions. Sharing user profiles, for example, means a department can gain a broader view of student perceptions and focus their profiles on specific course/department objectives and initiatives (e.g., where do students go to find our major requirements?). Also, creating student-user profiles as a department can foster dialog about the most important user perspectives instead of who in the department knows more about what students want or need based on a colleague's position or length of service. Discussions regarding user considerations can actually deescalate conflicts (Jurca et al., 2014). The focus of the discussion

becomes more about sharing observational, performance, and behavioral data to reach relevant user insights rather than disagreeing about past experience with students or what students might want.

Conclusion

In this study, I created a student-user profile for an introductory TPC course. It helped me make meaningful course design decisions grounded in actual student-user data and practice reflection-in-action (Lowgren & Stolterman, 2007) during the course; I could adjust the course and lesson design based on insights from the student-user profile so the course remained user-centered. Importantly, the student-user profile was based on triangulation of user "see-say-do" information (Still & Crane, 2016) rather than sole self-report data such as course surveys or student evaluations. While those tools can support a student-user profile, on their own they cannot supplement the robust approach of creating a user profile based in UCD methods. Additionally, developing the student-user profile helped me reflect on my own pedagogical choices and style to improve my performance. It also encouraged me to keep learning more about my students' experiences.

While I received anecdotal feedback that students appreciated the design changes I made, I did not formally measure the relationship between the use of the student-user profile and student success. Recall that my study was exploratory in nature. Future studies could examine the efficacy of student-user profiles in a TPC course setting. There are challenges with implying causation and isolating student success indicators based on implementing a student-user profile. For example, justifying the results and adoption of UCD, or related UX approaches, can be nebulous (Bias & Mayhew, 2005; Jokela & Buie, 2012; Martin et al., 2017; Redish, 2012). TPC instructors then might isolate a particular student outcome and develop a student-user profile based on that outcome vs. student success in an entire course.

For example, a TPC instructor could create a student-user profile geared toward understanding a more acute use context, such as LMS interactions. The instructor could have specific student success parameters, such as reduction in questions about where to locate course information and student submission errors, or an increase in student visits to a particular LMS page, to measure success in response to design changes they make based on a student-user profile about the student LMS experience. The challenges of evaluating the efficacy of a UCD method such as a student-user profile, however, should not dissuade its study.

Additionally, the development and use of a student-user profile as a pedagogical tool is not unique to TPC. A student-user profile can be used to understand the student experience in broad academic settings. But TPC instructors are likely candidates to lead this charge. In the TPC classroom, a student's experience with the course content—lessons, assignments, reading material, instructor feedback, and the like—reflects a specific knowledge or experience within a use context

(Johnson, 1998; Spinuzzi, 2013; Wilson & Wolford, 2017) that TPC instructors have an obligation to honor. In turn, being part of the TPC field means we have an obligation to honor the knowledge, experience, perceptions, and goals that students bring to the TPC classroom when we design our courses. If we are to be design-oriented user advocates, as James Dubinsky (2015) suggests, it is time to practice UCD methods ourselves to best support the primary users—students—of the courses and lessons we design. UCD and overarching UX work is, after all, a "natural extension of the work that [TPCs] already do" (Lauer & Brumberger, 2016, p. 249), and there is a call for more UX-based approaches in TPC (Pope-Ruark et al., 2019). TPC instructors with prior TPC industry experience may also be well-versed in user profile or other UCD design methods. I encourage them to apply these methods to TPC course design and report on their work.

The nuance between making course design changes grounded in user data, such as insights gleaned from a student-user profile, to improve the student-user experience versus doing what we "think is best" as TPC instructors is paramount. Following UCD methods to develop a student-user profile can help TPC instructors and department chairs avoid self-referential design where we impose our own understanding—our own mental models—of how students should interact with, understand, and apply course material as we design our courses. This self-referential and "expert-based design" is a quick recipe for discouragement, disappointment, and confusion about why students did not understand content, did not follow directions, or could not even locate the syllabus. We can do our diligence to avoid self-referential design and creating elastic users (Ilama, 2015) in our mind that fit the mold of what an ideal TPC student should be. From a UCD and TPC perspective, *not* taking the time to methodically understand users, or worse, making assumptions about who your users are and what they care about, is a fast track to failure for any design process.

Ross Unger and Carolyn Chandler (2012) warn that personas, and I argue this is also applicable to user profiles, are "going to be a lot like Santa Claus: They'll only be valuable as long as people believe in them" (p. 125). Believing in student-user profiles helps us move from an instructor/chair (i.e., expert/designer) view to a student-user view of our course content and lessons to make meaningful course design changes. Developing a student-user profile may be a new technique for the most seasoned instructors—a technique potentially even viewed as elementary given its simplicity—but student-user profiles offer a strategic UCD-based approach to capture user perspectives across TPC departments that can streamline and prioritize an understanding of the student-user experience.

References

Andersen, R., Benavente, S., Clark, D., Hart-Davidson, W., Rude, C., & Hackos, J. (2013). Open research questions for academics and industry professionals: Results of a survey. *Communication Design Quarterly Review*, *1*(4), 42-49.

Anschultz, L., & Rosenberg, S. (2002). Expanding roles for technical communicators. In B. Mirel & R. Spilka (Eds.), *Reshaping technical communication: New directions and challenges for the 21st century* (pp. 149-163). Lawrence Erlbaum.

Barnum, C. (2011). *Usability testing essentials: Ready, set…test!* Morgan Kaufmann.

Bias, R., & Mayhew, D. (2005). *Cost-justifying usability: An update for the internet age*. Morgan Kaufmann.

Baxter, K., Courage, C., & Cain, K. (2015). *Understanding your users: A practical guide to user research methods.* Morgan Kauffman.

Beyer, H., & Holtzblatt, K. (1999). Contextual design. *Interactions*, *6*(1), 32-42.

Brumberger, E., & Lauer, C. (2015). The evolution of technical communication: An analysis of industry job postings. *Technical Communication*, *62*(4), 224-243.

Cargile Cook, K. (2002). Layered literacies: A theoretical frame for technical communication pedagogy. *Technical Communication Quarterly*, *11*(1), 5-29.

Cao, J. (2018). *The practical guide to empathy maps: 10-minute user personas*. UXPin. https://www.uxpin.com/studio/blog/the-practical-guide-to-empathy-maps-creating-a-10-minute-persona/

Carliner, S. (2001). Emerging skills in technical communication: The information designer's place in a new career path for technical communicators. *Technical Communication*, *48*(2), 156-175.

Ceraso, A. (2013). How can technical communicators plan for users? In J. Johnson-Eilola & S. Selber (Eds.), *Solving problems in technical communication* (pp. 237-261). University of Chicago Press.

Cleary, Y., & Flammia, M. (2012). Preparing technical communication students to function as user advocates in a self-service society. *Journal of Technical Writing and Communication*, *42*(3), 305-322.

Cooper, A. (2004). *The inmates are running the asylum*. Sams.

Dubinsky, J. (2015). Products and processes: Transition from "product documentation to ... integrated technical content." *Technical Communication*, *62*(2), 118-134.

Dumas, J., & Redish, J. (1999). *A practical guide to usability testing*. Intellect Books.

Garrett, J. (2011). *The elements of user experience: User-centered design for the web and beyond*. New Riders.

Getto, G., & Beecher, F. (2016). Toward a model of UX education: Training UX designers within the academy. *IEEE Transactions on Professional Communication*, *59*(2), 153-164.

Getto, G., & St. Amant, K. (2015). Designing globally, working locally: Using personas to develop online communication products for international users. *Communication Design Quarterly Review*, *3*(1), 24-46.

Hackos, J., & Redish, G. (1998). *User task analysis for interface design*. Wiley.

Hanington, B., & Martin, B. (2012). *Universal methods of design: 100 ways to research complex problems, develop innovative ideas, and design effective solutions*. Rockport.

Hart-Davidson, W. (2013). What are the work patterns of technical communication? In J. Johnson-Eilola and S. Selber (Eds.), *Solving problems in technical communication* (pp. 50-74). Chicago: University of Chicago Press.

Ilama, E. (2015, June 9). Creating personas. *UX Booth*. http://www.uxbooth.com/articles/creating-personas/

Johnson, R. (1998). *User-centered technology: A rhetorical theory for computers and other mundane artifacts*. SUNY Press.

Johnson, R. (2004a). Audience involved: Toward a participatory model of writing. In. J. Johnson-Eilola & S. Selber (Eds.), *Central works in technical communication* (pp. 91-103). Oxford University Press.

Johnson, R. (2004b). Complicating technology: Interdisciplinary method, the burden of comprehension, and the ethical space of the technical communicator. In J. Dubinsky (Ed.), *Teaching technical communication: Critical issues for the classroom* (pp. 24-44), Bedford/St. Martin's.

Jokela, T., & Buie, E. (2012). Getting UX into the contract. In E. Buie & D. Murray (Eds.), *Usability in government systems: User experience design for citizens and public servants* (pp. 251-265). Morgan Kauffman.

Jurca, G., Hellmann, T., & Maurer, F. (2014, July). Integrating Agile and user-centered design: A systematic mapping and review of evaluation and validation studies of Agile-UX. In *Agile Conference (AGILE), 2014* (pp. 24-32). IEEE.

Knox, N. (2014). How to use persona empathy mapping. *UX Magazine*. http://uxmag.com/articles/how-to-use-persona-empathy-mapping

Krug, S. (2014). *Don't make me think, revisited: A common sense approach to web usability*. New Riders.

Lallemand, C., Gronier, G., & Koenig, V. (2015). User experience: A concept without consensus? Exploring practitioners' perspective through an international survey. *Computers in Human Behavior*, *43*, 35-48.

Lauer, C., and Brumberger, E. (2016). Technical communication as user experience in a broadening industry landscape. *Technical Communication*, 63(3), 248-264.

Lowgren, J., & Stolterman, E. (2007). *Thoughtful interaction design: A design perspective on information technology*. MIT Press.

Ma, J., & LeRouge, C. (2007). Introducing user profiles and personas into information systems development. *AMCIS 2007 Proceedings*, 237.

Martin, S., Carrington, N., & Muncie, N. (2017). Promoting user advocacy to shift technical communication identity and value. *Technical Communication*, *64*(4), 328-344.

Mirel, B. (2013). How can technical communicators evaluate the usability of artifacts? In J. Johnson-Eilola & S. Selber (Eds.), *Solving problems in technical communication* (pp. 285-309). University of Chicago Press.

Muller, M., & Druin, A. (2009). Participatory design: The third space in HCI. In A. Sears & J. Jacko (Eds.), *Human computer interaction: Development process* (pp. 166-181). CRC Press.

Norman, D. (1986). Cognitive engineering. In D. Norman & S. Draper (Eds.), *User centered system design: New perspectives on human-computer interaction* (pp. 31-61). Lawrence Erlbaum.

Norman, D. (1999). Affordance, conventions, and design. *Interactions Magazine*, *6*(3), 38-43.

Pope-Ruark, R., Tham, J., Moses, J., & Conner, T. (2019). Introduction to Special Issue: Design-thinking approaches in technical and professional communication. *Journal of Business and Technical Communication*, *33*(4), 370-375.

Pratt, A., & Nunes, J. (2012). *Inter-active design: An introduction to the theory and application of user-centered design*. Rockport.

Redish, G. (2010). Technical communication and usability: Intertwined strands and mutual influences. *IEEE Transactions on Professional Communication*, *53*(3), 191-200.

Redish, G. (2012). *Letting go of the words: Writing web content that works*. Morgan Kaufmann.

Redish, G., & Barnum, C. (2011). Overlap, influence, intertwining: The interplay of UX and technical communication. *Journal of Usability Studies*, *6*(3), 90-101.
Rolfe, G. (2006). Validity, trustworthiness and rigor: Quality and the idea of qualitative research. *Journal of Advanced Nursing*, *53*, 304-310.
Rude, C. (2009). Mapping the research questions in technical communication. *Journal of Business and Technical Communication*, *23*(2), 174-215.
Salvo, M. (2001). Ethics of engagement: User-centered design and rhetorical methodology. *Technical Communication Quarterly*, *10*(3), 273-290.
Sanders, E. (2002). From user-centered to participatory design approaches. In J. Frascara (Ed.), *Design and the social sciences: Making connections* (pp. 1-8). CRC Press.
Schriver, K. (2013). What do technical communicators need to know about information design? In J. Johnson-Eilola & S. Selber (Eds.), *Solving problems in technical communication* (pp. 386-427). University of Chicago Press.
Schuler, D., & Namioka, A. (1993). *Participatory design: Principles and practices*. CRC Press.
Spinuzzi, C. (2013). How can technical communicators study work contexts? In J. Johnson-Eilola & S. Selber (Eds.), *Solving problems in technical communication* (pp. 262-284). University of Chicago Press.
Still, B., & Crane, K. (2016). *Fundamentals of user-centered design*. CRC Press.
Still, B., & Koerber, A. (2010). Listening to students: A usability evaluation of instructor commentary. *Journal of Business and Technical Communication*, *24*(2), 1-28.
Tracy, S. (2013). *Qualitative research methods: Collecting evidence, crafting analysis communicating impact*. Wiley-Blackwell.
Unger, R., & Chandler, C. (2012). *A project guide to UX design*. New Riders.
Van Velsen, L., Wentzel, J., & Van Gemert-Pijnen, J. (2013). Designing eHealth that matters via a multidisciplinary requirements development approach. *JMIR Research Protocols*, *2*(1), e21.
Wilson, G., & Wolford, R. (2017). The technical communicator as (post-postmodern) discourse worker. *Journal of Business and Technical Communication*, *31*(1), 3-29.

Appendix A: General Information Survey

Welcome! Please answer the following questions so that I can better understand your interests and course goals.

1. **Name (First and Last)**
2. **Major (or undecided)**
3. **Year** *Mark only one oval.*
   - ○ Freshman
   - ○ Sophomore
   - ○ Junior
   - ○ Senior
4. **I am taking this course because...** *Mark only one oval.*
   - ○ I have to
   - ○ I'm interested in the subject
   - ○ Both

5. **If I had to describe technical communication in 1 sentence it would be:**
6. **Career goals after (i.e., work as a Public Relations executive)**
7. **Favorite hobbies**
8. **Favorite foods**
9. **Beach or mountains?** *Mark only one oval.*
   - ○ Beach
   - ○ Mountains
10. **Dogs or cats?** *Mark only one oval.*
    - ○ Dogs (Woof, woof)
    - ○ Cats
    - ○ No thanks
11. **Favorite shows or movies**
12. **Last social media account you used**
13. **Any concerns about taking an online course?**
14. **What you want to get out of this course?**
15. **Anything else you want me to know?**

Appendix B: Midterm Survey

This survey is anonymous. Please be honest in your responses so I can improve the course.
* Required

1. **Check all course lesson tools that you find helpful** * *Check all that apply.*
   - ○ PowerPoint Slides
   - ○ Sketch Videos
   - ○ Document Camera (when Instructor writes on paper during class)
   - ○ Textbook
   - ○ Blackboard Announcements on how to prepare for class
   - ○ Other:
2. **I can find the course content I need easily on the Blackboard site.** * *Mark only one oval.*

   1 2 3 4 5
   Disagree Agree
3. **I like that we have live class meetings.** * *Mark only one oval.*

   1 2 3 4 5
   Strongly disagree Strongly agree
4. **I feel completely comfortable asking the Professor questions during class.** * *Mark only one oval.*

   1 2 3 4 5
   Strongly disagree Strongly agree

5. **The Professor values student time.** * *Mark only one oval.*

1	2	3	4	5
Strongly disagree				Strongly agree

6. **I am learning something that I can apply to my career in this course.** * *Mark only one oval.*

1	2	3	4	5
Strongly disagree				Strongly agree

7. **I'm glad ENGL 2311 is a required course.** * *Mark only one oval.*

1	2	3	4	5
Strongly disagree				Strongly agree

8. **What are two things you like about how the Professor teaches this course?** *
9. **What are two things you wish the Instructor did differently?** *
10. **Is there anything else you want to say about the course so far?**