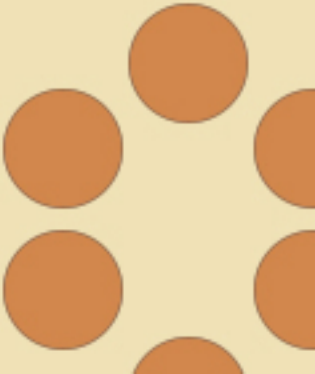
pr::grammatic PERSPECTIVES

Volume 13 | Issue 1



CPTSC

TABLE OF CONTENTS

Issue Preview
Volume 13, Issue 1

Lora Arduser
University of Cincinnati
Lee-Ann Kastman Breuch
University of Minnesota

In this issue we celebrate some endings and beginnings. First, we'd like to thank Danielle Mollie Stambler, our editorial assistant. Danielle will be moving on to her new position at Arizona State University (ASU) and we wish her our very best! Second, we would like to announce the new, annual *Programmatic Perspectives* Best Research Article of the Year Award. Each year, a committee composed of members of our Editorial Board will be judging and nominating a research article for the award. Currently, the committee is reviewing *Programmatic Perspectives* research articles from 2021, and the winner will be announced at the 2022 CPTSC annual conference.

We'd also like to congratulate Amber Lancaster, Susan Rauch, and Carie S. T. King for their work on the upcoming *Programmatic Perspectives* special issue "Collaboration Models for Programmatic Development: Stakeholder Engagement in Program Design, Growth, and Assessment." The issue will be published in November of 2022 as Issue 13.2.

We're very excited to introduce three research articles in this issue, which focus on writing for nonprofits, teaching UX, and working with engineering capstone students. In "Moving from Implicit to Explicit: Talking Culture and Justice in a Writing for Non-Profits Certificate," Chris Andrews and Charles L. Etheridge analyze how a writing for non-profit certificate program at their institution is meeting the social justice goals that the faculty defined for the program. Through their interview study with their Hispanic students—the students the program was designed to serve—the authors discovered that although the program was connecting students to the community, they were not making connections with larger issues of social justice. To address this need, Andrews and Etheridge conclude the article with actions for improving similar programs that focus on social justice.

In "Student Technical Editors as Writing Consultants for Mechanical Engineering Capstone Design Teams: A Case Study in Interdisciplinary Curriculum

Development" Russell Kirkscey and Anilchandra Attaluri present the findings from a case study that involves a project in which technical and professional communication (TPC) students worked as technical editing consultants for a mechanical engineering instructor during the final semester of their client-based capstone design projects. In the article, Kirkscey and Attaluri explore opportunities and challenges in both TPC pedagogy and program administration afforded through this innovative course design, and they offer suggestions for inter-program collaboration.

In Heather Noel Turner and Emma J. Rose's "What Do We Teach When We Say We Teach UX? A Study of the Practices of TPC Instructors," the authors examine the following research questions: 1) What do TPC teachers do when they say they teach UX? What are their definitions, approaches, and activities? 2) What are the structures or constraints that influence UX pedagogical choices? Using data from 80 questionnaire responses, 22 interviews, and a corpus of 53 teaching artifacts, the article offers readers evidence-based UX practices for instructors and programs. Noel and Rose's article is is the result of a 2020 CPTSC Research Grant and a terrific resource for TPC programs considering and/or already fostering UX curricula.

Articles in our FOCUS feature in this issue directly address technical and professional communication pedagogy. In "Civic Social Media: A Detailed Case for Classroom Use," Stephen Carradini describes a pedagogical case involving civic social media in a service-learning course project. The case offers several insights that colleagues can apply to TPC courses involving areas such as content management, audience analysis, social media, project development, and more. In "Towards a Social Justice Agenda: Learning Outcomes as a Site for Coalition Building," Isidore Dorpenyo and Lourdes Fernandez discuss the absence of social justice learning outcomes in syllabi for general technical communication courses in a TPC program. In a step toward coalition building, they drafted explicit social justice learning outcomes to add to course syllabi; they plan to extend this work to course and program descriptions. Their work will be helpful to all TPC instructors and programs seeking to explicitly address social learning outcomes.

This issue concludes with three book reviews. Morgan D. Beers reviews Rachel Gramer, Logan Bearden, and Derek Mueller's edited collection *Radiant Figures: Visual Rhetorics in Everyday Administrative Contexts*. Laurence José reviews *Digital Strategies: Data-Driven Public Relations, Marketing, and Advertising* by Regina Luttrell, Susan F. Emerick, and Adrienne Wallace, and Jennifer Wilhite reviews *A Research Primer for Technical Communication: Methods, Exemplars, and Analyses* (2nd Edition) by George F. Hayhoe and Pam Estes Brewer.

We thank all the authors for their wonderful contributions to issue 13.1, and we thank you, the readers, for continuing to engage in programmatic scholarship. Enjoy the issue!

Moving From Implicit to Explicit: Talking Culture and Justice in a Writing for Non-Profits Certificate

Christopher D. M. Andrews
Charles Etheridge
Texas A&M University-Corpus Christi

Abstract. Our institution's Writing for Non-Profits certificate program, which developed out of long-term partnerships with area non-profit programs in our predominantly Hispanic community, initially appeared to be an ideal vehicle for social justice. However, interviews with our Hispanic students showed us that, although the program effectively engaged students with the community, students were not making connections with larger issues of social justice taking place in the discipline of technical communication and the nation. After reviewing conversations on social justice within technical communication, particularly at Hispanic-Serving Institutions (HSIs), we describe an IRB-approved interview study that critically examines our program and the opportunities it presents for deeply engaged social justice work for students. We conclude that, although social justice orientations may be implicit in the program and its design, this orientation needs to be made explicit, and we propose actions that can be made to improve such programs. We conclude by noting the disciplinary implications for social justice that can be had by deeply listening to minority students' perspectives.

Keywords: Hispanic-Serving Institutions, Latinx Students, Non-Profit Writing, Program Design, Service Learning, Social Justice

Contact author: Christopher.Andrews@tamucc.edu

Texas A&M University–Corpus Christi's (TAMU-CC) Writing for Non-Profits (WNPR) certificate program, which has community engagement as a core value, was built in response to needs of our predominantly Hispanic[1] community. Additionally, we know our students value the opportunity to participate in curricular work that engages them in their communities. The WNPR is a 16-hour program aligning closely with topics and courses that characterize the "burgeoning core" of minors and certificates in technical communication (Melonçon, 2012, p. 213). Students in the WNPR program take the following courses to enhance a combination of rhetorical, technological, genre, and social literacies:

- Technical and Professional Writing
- Document Design and Publishing
- Writing for the Web
- Grants and Proposals
- Writing in the Non-Profit Agencies
- Non-Profit Writing Project (a single-credit-hour capstone designed to be taken concurrently with the student's last course in the certificate)

The certificate's first iteration, launched in 2016, was 12 hours and did not include Writing for the Web or the Writing Project capstone.

Five years after the initial launch of this program, we wanted to assess to see if it does what we intend it to. We conducted a study of our students to learn how they experienced the program and what, if any, value they got out of it. Reviewing the spreading conversations around social justice and antiracism in the last few years, our assumption was that the program was inherently organized around social justice work because it grew out of the lifelong commitments and community coalition-building of the faculty who created it; we similarly assumed students would see tons of connections between work done throughout courses in the program to contemporary discussions of social

[1] As we drafted this paper, we were reminded by our colleague Yndalecio Hinojosa of how preferred terms and re-designations by researchers are often acts of covert violence. Which word would we use to identify students? Latina? Latinx? Something else? Recent scholarship in technical communication and writing studies that we reviewed prefers the intersectional *Latinx*, while older scholarship has used Latina/o. In our IRB documentation we used *Latina* in the title and study goals, although we did not use any demographic language or preferred terminology in interviews or recruitment materials, allowing students to self-identify. For this study we have chosen to use *Hispanic* when we talk about our participants because that is how the majority of them identified themselves in their interviews. We also use *Hispanic* when talking about students from a general perspective, to remain consistent with demographic terminology and the Hispanic Serving Institution designation. We use Latinx as a keyword to speak to current scholarship in technical communication. Gonzales et al. (2020) provide an insightful discussion of the semantic and cultural distance between Latinx and Hispanic.

justice in the news and in our academic disciplines. What we learned is that the program prepares students for work in the non-profit world, but that we have missed opportunities to discuss critical social justice issues. Our response had to this point been tactical—when identifying poverty and seeking to address it and other social challenges facing our community, we have worked on ways to address immediate needs (Mathieu, 2005), and haven't examined why certain groups are more vulnerable to these injustices, nor have we addressed the structural inequalities that perpetuate these injustices. And as the faculty who designed the program have retired or begun to shift out of administrative roles and new faculty have come in, we learned how the commitments and strategies we thought were built into the program were really only manifested on individual levels and were not sustained programmatically. We concluded that we need to make explicit what is implicit, that we need to build conversations about justice into our course design, and that we need to do more to address racial injustices that are present for a number of reasons, especially disciplinary but also because the program is delivered through asynchronous online courses.

Introduction

In the final section of *Technical Communication after the Social Justice Turn: Building Coalitions for Action*, the phrase "after all" appears 10 times. Perhaps not especially conspicuous spread out over two chapters, but enough to be noticeable. "After" is a small word. Nothing fancy. But in picking open competing senses of the word, we are led to wonder what "after the turn" means. In a temporal sense, some might see the field in the time following the turn—the turn has been made, and scholars in Technical and Professional Communication (TPC) are oriented towards the work of problem-solving at sites of injustice. However incompletely and imperfectly, attention is there. In another and more important sense, the field is behind the turn, chasing it. There is much undone and much to do. For both a temporal and spatial sense, we must be able to imagine, as Rebecca Walton et al. (2019) have done, the kinds of work that must happen after the turn. It would be easy to say that the social justice turn for scholarship, teaching, and programmatic conversations in TPC has been well documented and clearly articulated (Walton et al., 2019), as has the field's discussion of diversity (Savage & Matveeva, 2011). On top of that, as Laura Gonzales et al. (2020) pointed out, there has been more than 15 years of work highlighting the challenges and successes for TPC programs at Hispanic-Serving Institutions (HSIs) as they continue to articulate how localization and other curricular strategies present opportunities for further

orienting our field and our programs to social justice, antiracism, and diversity. After all this work, the need for more work continues. There is more turning yet.

This research article describes how we (the outgoing and incoming administrators of an undergraduate WNPR certificate and Technical and Professional Writing minor at a regional majority-minority HSI) took on student interviews as part of program assessment and how that grew out into larger work centered around social justice and inclusion in our academic programs. We then share our strategies for mediating white supremacist elements of our program: by listening to our students and working toward installing a more inclusive environment programmatically and coalitionally rather than just at a tactical level. A localized participatory approach (Agboka, 2013) is especially necessary for us as a pair of white, male professors in a discipline that is historically given to ignoring racial and justice issues. First, we trace conversations about localization and responsive pedagogy on TPC programs, especially in the HSI context. Then we describe how we gathered data and discuss how students perceive and experience the program, and how students think of our Writing for Non-Profits program specifically regarding inclusion, culture, and community. We close echoing Chris Dayley's (2021) call to action for program administrators and explaining the moves we have begun to make to be more intentional and explicit about antiracist orientations in the program, specifically: how we are working to go beyond tactical solutions and the urgency of the immediate and to implement structural actions.

Conversations

In a series of collaborative works, Rebecca Walton and Godwin Y. Agboka (2021) and Walton et al. (2019) have thoroughly described a two-decade social justice turn in TPC scholarship. Throughout that period, scholarship in TPC has pointed to service learning and community engagement as an opportunity to help students learn and practice civic engagement (Bourelle 2014; Cargile Cook, 2015; Dubinsky, 2002; Hea & Shah, 2016). At the same, we recognize that this attention to ethics and civic engagement so frequently evoked by white scholars and teachers—such as ourselves—does not by default translate to social justice. Social justice is an active practice and ongoing disposition (Walton et al., 2017) that "amplifies the agency of oppressed people—those who are materially, socially, politically, and/or economically under-resourced" (Jones & Walton, 2018, p. 242) as well as "actively verifying the equality of individuals and communities in any context" (Walton et al., 2016, p. 120). A pedagogical emphasis on social justice investi-

gates how TPC does this work and how "to equip the next generation of technical communication scholars and practitioners for the complex work of recognizing, acting within, and shaping issues of social justice and diversity" (Jones & Walton, 2018, p. 242).

Localization has been a frequently-cited framework for articulating and meeting social justice goals through its "emphasis on contexts, situatedness, and locality" (Agboka, 2013, p. 29). Importantly, localization cannot stop at considering the linguistic and cultural factors of location but also ideology, economy, and ethics dimensions of a locale (Agboka, 2013). Thus, it is important for us to consider our own location, context, and situatedness at an HSI, and to center our conversations on "servingness" as we engage in examining social justice action in our curriculum (Garcia, 2019). We see this emphasis as a kind of "localization as articulation" (Leon & Enríquez-Loya, 2019), which frames (and names) "elements of a writing program within the framework of HSIs, and specifically with the identity of its users in mind" (p. 162)—that is, we design "from here." We follow Kendall Leon and Aydé Enríquez-Loya's argument that TPC can be "a pivotal space where HSI as an identity can be articulated on a programmatic level" (2019, p. 163) and invoke our users—our students—as participants in thinking about the culture of our program and how the work they do in it may fit into larger conversations about inclusion, race, and justice. Research about TPC at HSIs points to intricate differences in the broad cultural categories that are otherwise obscured in homogeneous institutional labels like HSI (Baca et al., 2019; Gonzales & Baca 2017; Kells, 2007; Matveeva, 2015; Newman, 2007). Faculty must develop "culturally responsive pedagogy" that is based in the reality of students' lived experiences (Araiza et al., 2007, p. 93; also refer to Hinojosa & Zepeda, 2018), but they are often limited in doing so because faculty at such institutions may rely on prominent discourses about Hispanic students that do not accurately represent the reality of their students. For example, Isabel Araiza et al. (2007) typified this discourse as having an at-risk tone characterized by a strict profile for Hispanic students: 1st generation college students from low-income households who have less academic preparation and are less likely to complete college. This profile is extremely one-sided and does not capture the multidimensionality inside the homogenous label. As well, academic discourse about postsecondary Hispanic students frequently focuses on schools located closer to the U.S.-Mexico border, but not all HSI students experience borderlands in these geographically localized ways. Although the 170 miles between our city and the border cities of Estado Tamaulipas seems short (at least in terms of Texas driving distances), the border cultures of Paso

Del Norte or the Rio Grande Valley sometimes seem distant from the border culture of the Texas Coastal Bend.

A review of scholarship about TPC and HSIs shows a growing attention on how these and other types of minority-serving institutions can create meaningful and justice-oriented curricula and programs for students. Gonzales et al. (2020) aptly describe the ways that TPC programs at HSIs wrestle with commitments to inclusion, justice, and attention to HSI-ness. For a variety of reasons, faculty and programs do not frequently attend explicitly to their HSI designation and struggle to move beyond individual, small-scale efforts into system-level, programmatic changes. This is, according to Gina Ann Garcia (2019), a common fault among HSIs, which only must meet a demographic marker for the designation. TPC HSI scholars have highlighted several important strategies for creating and sustaining programs that are culturally and linguistically diverse and attenuated to justice for people from underrepresented backgrounds, including:

- highlighting inclusivity and racial/linguistic difference across courses, rather than working from a "diversity course" approach (Gonzales & Baca, 2017)
- approaching Latinx students from an assets-based framework that assumes students bring relevant work-related experiences to courses, know how to blur lines between expert and lay discourses, and understand the need for research and cultural sensitivity in TPC (Gonzales, 2019)
- emphasizing meaningful curriculum-community connections (Matveeva, 2015), including work such as: making community-building and engagement part of program outcomes and learning objectives (Leon & Enríquez-Loya, 2019), ensuring curriculum-community connections are transparent and intrinsically linked (Leon & Enríquez-Loya, 2019), and developing training for faculty in building community partnerships (Gonzales & Baca, 2017)

Gonzales et al. (2020) attended to how programs are being localized through a faculty perspective; in our study we attend to how students experience their program, and how they saw that experience intersecting with their cultural background and identity. We see this as a participatory approach, which can be essential to justice-oriented work (Agboka, 2013; Jones, 2016). In the following section, we describe how we used an interview methodology as a way of amplifying student narratives and perspectives, which is a way for us to localize our program through listening.

Current conversations concerning the seeming incommensurabil-

ity of capitalist logics and social justice in the "deeply pragmatic" field of TPC (Phelps, 2021, p. 204; also refer to Hashlamon & Teston, 2021) are also relevant as we grapple with our own neoliberal rhetoric of job preparation in the WNPR program. Miriam F. Williams and Octavio Pimentel described how TPC, alongside so many parts of American society, is rooted in "the belief of a merit-based system of reward and penalty" that "rarely works to the advantage of people of color" (2012, p. 272). This false ideology has led to what Eduardo Bonilla-Silva called "color-blind[2] racism," (2014, p. 2) which can be defined as "a set of ideologies and discourses that uphold contemporary racial inequality by denying either its presence or its significance" (Burke, 2017, p. 272), or what Leon and Enríquez-Loya have described as the "imperialist tradition" (2019, p. 857) of TPC programs and discourses positing themselves as neutral. Our own WNPR certificate was created in the moment of an institutional rush to create job-relevant certificates across the university, and the color-evasive ideology informing that rush is passed along to students via our program's appeals to direct job preparation and workplace applications. In his survey of student perceptions of diversity in TPC programs, Dayley (2019) showed how his results may have been limited by students' acceptance of this type of "colorblind meritocracy" (p. 65). Persons who have enrolled and found success in programs already may "have found ways to navigate white-dominated spaces" (Dayley, 2019, p. 67) and may resist narratives about race and diversity that they see as radical. In adopting interviews to invite students to narrate their experiences, we hoped to gain insight into the challenges our students face and perhaps push back against color-evasive portrayals.

Methods

This project started in May 2019 as an outgrowth of our program assessment; we wanted to understand who our students were, why they were attracted to the program, and what their experiences were like in it. Beyond that, we wanted to understand how students from underserved populations and from cultural backgrounds other than our own experienced our online program. How do their identities and experiences as Hispanics, as women, as immigrants or children of immigrants, as working class, contribute to their experience of the

[2] We acknowledge that the terms "color-blind racism" and "colorblind meritocracy" have ableist connotations, both of which convey abstract liberalism's attempts to divorce politics from race in an attempt to support the fiction we now live in a "post-racial" society. However, the phrase "color-blindness" is commonly used in relevant scholarship, and we have cited that term here. The term "color-evasiveness," coined by Annamma et al. (2017) is preferable, and we rely on it for our own usage.

program? We selected interviews as a method because we saw them as an opportunity for the students who use the program to contribute to its continued iterative design. By volunteering, people become participants; by saying "yes, we want to add our story to your project," participants contribute a part of themselves as "user[s]-in-community" (Agboka, 2013, p 42). It is one thing to say one is student-centered and design programs that are based in what one perceives to be student needs. It is another thing to talk to students, to hear their needs, to complicate the monolith of "students" or "Hispanics." This is doubly so considering our own positionalities in relation to theirs. While interviews don't fully bring users into the center of the design process, centering their experiences and seeking their knowledge helps us as administrators reflect on and change our own attitudes.

Hearing our students' individual perspectives allows us to recognize intricate differences in the broad cultural categories of Latino, Latina, Chicanx, Hispanic, and border(ed) people without falling back on quasi-Freirean constructs that frame white HSI instructors and Hispanic students as "liberators" and "oppressed" (Newman, 2007, p. 19). By interviewing our students and moving beyond reliance on anecdote and standard assessments like course surveys and evaluations, we engaged in four capacities of narrative: fostering identification, facilitating reflexivity, interrogating historicity, and understanding context (Jones & Walton, 2018). We learn more about the peculiar context of our programs, our community, our HSI, and our online TPC program.

Recruitment and Participants

We worked with university staff to collect a complete list of declared certificate students in order to identify both graduates and current students in the WNPR Certificate program; we compiled a list of 28 students (the certificate was launched in 2016). To participate in the study, interviewees must have either graduated with their declared certificate or had completed the course sequence as described in the university's catalog. Working from our list of graduates and current students we identified a list of 12 possible participants. We sent each student personalized email invitations to participate in informal interviews about their experiences in the program with the goal of continuing to develop and grow it—that is, we explicitly invited them to participate in the future redesign and revision of the program.

Seven of the 12 students we invited agreed to be interviewed as part of this study. All participants were provided the basic questions of the study via email beforehand and signed an informed consent at the outset of each interview. Table 1 summarizes anonymized details

about our seven participants; all demographic language is self-described by the interviewee. With a small sample made up of our own students, even working from numbered transcripts would not provide true anonymity; at the same time, to protect the information and identity of participants, all data and transcripts were de-identified. Of our seven participants, five were Hispanic women, one was a Hispanic male, and one was a White male. As discussed in greater detail in an earlier section, we purposefully avoided any specific demographic language or preferred terminology in interviews and recruitment materials, allowing students to self-identify during the interview. For this study we have chosen to use Hispanic when we talk about our participants because that is how the majority of them identified themselves in their interviews (see footnote 1).

Table 1. Participants' self-described demographic details

Participant	**Gender**	**Ethnicity**	**Socioeconomic status**	**Originally from**
Participant 1	M	Hispanic	low-income	Oaxaca, Mexico and Corpus Christi, TX
Participant 2	F	Hispanic	lower middle class	Corpus Christi, TX
Participant 3	M	White	middle class	not from Corpus Christi, TX
Participant 4	F	Chicana	working to middle class	North TX
Participant 5	F	Hispanic	middle class	Corpus Christi, TX as an adult
Participant 6	F	Hispanic	middle class	Corpus Christi, TX
Participant 7	F	White Hispanic	middle class	Austin, TX

Our participants' demographics are consistent with TAMU-CC's institutional demography. Hispanic students are, by far, the institution's largest demographic group, comprising 48.25% of enrollment. White or Caucasian students make up 37%.

Data Collection

All interviews were one-on-one semi-structured interviews conducted by our research assistant, who met with each participant for approximately an hour at a variety of on-campus locations. While designing our study, we decided to employ[3] a graduate research assistant to conduct, record, and transcribe interviews; because we are faculty in the program and one or both of us knew all of our potential participants, we supposed participants might be more honest about the program with a separate interviewer. Research about ethnicity-of-interviewer effects suggested our Hispanic students would be more forthcoming if the interviewer were also Hispanic.[4]

We created an IRB-approved script of fifteen interview questions (provided in Appendix), and encouraged our research assistant to be flexible with how she organized and followed up on questions in our regular research meetings. Semi-structured interviews allow interviewees to follow tangents and tell stories as they respond broadly to interview questions, and let interviewers make connections and follow up in the moment of the interview—eliding a line of questioning if it becomes clear participants want to avoid it, or refining if participants are confused. In some sessions, our research assistant shared her own stories as a way of connecting with participants. In each case, participants retained the right to refuse to answer questions or change consent at any time during the study. Interviews were recorded with permission on a laptop computer and transcribed with oTranscribe, an HTML application that uses a computer's local storage instead of uploading files to the internet. All audio files were deleted after transcripts were finalized.

Data Analysis

As each transcript was completed, both of us would read them and

[3] We gratefully acknowledge Kelsy Mascorro's work as a graduate research assistant collecting and transcribing interviews on this project. We were able compensate Kelsy for her work on this project; funding was provided from internal College Research Enhancement grant funding.

[4] "Ethnicity of interview effect" has been a topic of discussion since at least the mid-1980s. Put simply, in interview situations, interviewees feel more comfortable, are more responsive, and give more full answers if the interviewer is of the same ethnicity as the interviewee. Some examples include Reese et al. 1986 and van Bochove et al., 2015.

meet periodically to discuss patterns we noticed across interviews. After this initial holistic review, we relied on structural coding to identify key themes and answers to our research questions. Structural coding (Saldaña, 2013) is a question-based style of qualitative coding particularly effective for semi-structured protocols gathering information from multiple participants. We used the following six questions from our IRB proposal as prefigured indexing devices that allowed us to identify and focus on comparable segments:

- BENEFIT: What if any benefit have students derived from the courses they took in the program?
- DIFFERENT: In what ways do students in courses feel as if they are being read differently by students from backgrounds other than their own?
- DRAWS: What draws students to the program?
- IMPROVE: How could the program be improved?
- SKILLS: What skills do students develop in the program?
- SOCIAL: What social or socialization experiences do students have in the program?

Meeting regularly to compare notes, we began to notice emergent patterns that we hadn't been looking for; the results of our study were mixed, revealing some unexpected complications arising from the program's design as well as demonstrating some program strengths. The following section focuses on the three most relevant results.

- **Result One:** We were surprised to find that students didn't connect community and social justice issues with what they learned in the program or how the program benefitted them, but did talk about those topics extensively when asked about other topics. Each of the Hispanic students talked about how their community and their background influenced their choice of the program (and projects); the one white student didn't.
- **Result Two:** Students perceived the program as beneficial and primarily articulated its relevance to career advancement (and economic benefits associated with advancement), or placed a premium on skills developed in the program both in terms of learning new technology as well as new writing skills.
- **Result Three:** Students experienced the program primarily through instructors as individuals rather than as a programmatic whole or in relation to other students in the program. Often students did not view the program as an opportunity for professional collaboration but instead equated collaborative tasks more negatively, as "group work." They reported no differences in treatment from students from other backgrounds,

describing their online courses as largely gender- and culture-neutral.

These interviews revealed some of our students' goals, bits and pieces of their backgrounds, and how they connect those two things in our programs. These interviews also point us towards things we can highlight about the program and ways we can grow into a social justice mission, turning from implicit goals to explicit structures, stories, and work. While our students' stories don't point us towards generalizable claims about HSI students in technical communication programs everywhere, they do point us towards a road map for ourselves and for other programs to use for making social and cultural justice orientations more explicit—or making them real in the first place. In the Takeaways section below, we will discuss curricular strategies we are developing that respond to these findings.

Result One: Culture and Community

When asked how their cultural backgrounds influenced their experiences in the program, students had a nuanced response. Most respondents were Hispanic women, one was an immigrant from Mexico, at least one other was a child of Mexican immigrants. Students emphasized their backgrounds, families, and communities as part of their motivations for being in NPO work. And though some did not say culture had anything to do with it (especially the white male), other students talked about how their gender and background (growing up a child of immigrants or their experiences as a Chicana or Mexican woman) was motivation to do the work and added perspective on how to effectively write/labor for marginalized communities, despite this not being a part of instruction.

Some directly linked their cultural backgrounds to their motivations for joining the program. Participant One, who grew up in Corpus Christi's predominantly Hispanic West Side, participated in a project with the Corpus Christi Literacy Council (CCLC); her personal memories included her grandmother taking ESL classes. This participant said her work with this agency was "really important to me because it was something that I saw was really important in the community." She emphasized that the CCLC was "something I've seen my family benefit from, and I felt it was important for others to be able to participate in that." She expressed the belief that her cultural background placed her in a position to mediate between her own community and the non-profits intended to serve that community: "when I was writing for [the CCLC], I was able to write with them in mind, knowing their needs and knowing their- what they're looking for in order to facilitate

that communication between the non-profit and the community." This participant expressly linked her cultural background to experiences in the program, and framed the results in positive terms. As a resident of Corpus Christi's West Side, her community background gave her special knowledge that she was able to utilize when writing for non-profit agencies, meeting a community need and providing information the agency needs. She went on to say that "my cultural background helped a lot" in other classes.

Other students expressed a nuanced view when discussing their backgrounds and possible links to their experiences in the program. Participant two, who self-identified her family background as "lower middle class" and, later, as "working class," stated that her background had no effect on her experience in the program. However, elsewhere, she stated that when she was engaged in a class project—in this case, grant writing—she asked "what is there for women? And what is there for minorities?" She did so, she stated, because "I felt like I was representing that." Later, she stated very clearly "that I'm … a woman and minority wanting to get out there in the community."

Participant four, who self-identified as a working-class Chicana, said her background did not affect her experience in the program. However, she created an interesting distinction: while she said background did not affect her experiences, she often "drew upon" her background in choosing her projects. She restated the importance of her Chicana identity[5] throughout the interview; at one point, she was trying to find visuals to use in a project, and notes:

> And I found this photo, and it was about- it was this woman, Chicana identifying. She had really long hair and she was walking, and that became my logo. Just really being able to imply- like shine through- the idea of a revolution, especially in the times that we're at in this moment, at the border.

She stated that "I want to take my knowledge and make it accessible to people so that they can change society in some way." Her experiences as a woman were another theme she referenced consistently as being a double-edged sword, as evidenced in the following passage:

> … women have a more detail-oriented- take a little more time to focus on it. And it's a little stereotypical, but also goes into how we're raised. The expectations of us to admire beauty and

[5] We hesitate to interpret this participant's use of the term "Chicana" and were unable to follow up with her about it later. However, we acknowledge that to many individuals the choice to identify with the term "Chicano/a" has historically been a specifically political act. An excellent overview of the term, its explicit links to a politicized stance, and its use as a deliberate embrace of the pre-Hispanic, pre-colonial past can be found in activist-turned-political scientist José Ángel Gutiérrez (2011).

> to be beautiful. It's a double-edged kind of thing. It's like, "oh, you had that expectation forced upon you at birth. But now it's really helping you because you're a little more detail-oriented and you can really make something look pretty." So that was one thing. I am worried that in the field- not necessarily in the field of non-profits, but just trying to get money and stuff, it's a little harder for women to negotiate. Just because if they do, it's more seemed as a, "oh, this woman's demanding" as opposed to, "oh, this person knows their worth."

At other points in the interview, this participant made repeated indications that she was read differently as a woman, but that she perceived that difference as a strength.

Other participants expressed views similar to those expressed here—that their cultural background influenced their choice of projects, but that it did not affect their experience in the program. Participant 5, a middle-class Hispanic woman, noted that "the projects I picked were related to regional needs that may be underserved." However, she noted that, because she grew up "middle class," she had a "limited scope" of "what people experience." While she expressed a commitment to "the underserved" she attributed that to her work in the field of education as opposed to her own upbringing. She also noted that her gender never influenced her experience in the program because it was never "brought forward … by the professor or the student." She also said "I just feel like the courses themselves were- I wouldn't say gender neutral … I just never saw it. We never saw it, and I never myself put my gender in position to be used in a way to navigate the experience."

Participant Three, who self-identified as a white male, similarly indicated that he felt his background had no effect on his experience in the program. Like the other participants, he expressed a desire to do projects that benefit "the community" (not surprising since students who are drawn to a non-profit certificate program are likely to be community-oriented). This student was an online student who does not live in the Corpus Christi area, and, in contrast to other participants, his sense of community seemed more abstract: he consistently used "the community," the idea of doing a general good, as opposed to Hispanic students, who consistently used the phrase "*my* community" (emphasis ours).

Result Two: Employment Skills and Program Draws

Respondents described being drawn to the program out of a desire to better prepare for jobs or advance in their current employment and

all of them mentioned the opportunity to practice and get better at writing as a major attraction. None of the respondents were English majors; most were seeking degrees in the social or natural sciences. The program was initially envisioned to serve professionals who work in non-profit agencies or students who have a strong desire to do so. One non-profit professional participant noted the program helped her "understand a little bit more about my non-profit work." All seven participants indicated that they found the program useful to their current jobs or future career plans.

Susan L. Popham (2016) shows how students from underserved backgrounds have a strong desire for skills-oriented coursework, and Natalia Matveeva (2015) describes identifying and teaching skills towards employability as a strategy "that can positively impact educational experiences of Hispanic students." (p. 6). Our participants reflected this finding; all seven quickly and readily described skills they had developed as a result of the program. When asked to reflect on particular skills, five participants described genres they had learned to adopt—frequently the standard list of proposals, letters, emails, and communications plans. Five participants explicitly linked the program to grant writing and one actually called it a "Grant Writing Certificate," even though grant writing is only one course in the program's sequence. Five of the seven participants highlighted technical and document design skills, such as working with text and color, designing for readability, placing visuals, and increasing their facility with software. Three participants highlighted writing and editing skills, or learning directness and concision, while two participants mentioned "writing for the web" in a general sense. Finally, when asked about skills, five participants talked about a variety of lessons learned that we coded as 'rhetorical sophistication,' including:

- The importance of thank-you messages
- When to bring in collaborators
- Balancing storytelling with data
- Heuristics for writing, or processes and questions to ask in the grant-writing process
- Knowledge of resources for grant writing
- Speeding up turnaround time on writing projects
- Audience awareness
- The importance of creativity
- Distinguishing between organizational needs, stakeholder needs, and served populations needs

Again, skills related to grant writing featured prominently in students' descriptions. One student described her most lesson learned as:

"I definitely learned how to not feel bad about asking for money." She, like many other participants, not only identified this skill as one that would be important to her work, but also expressed pride at being able to develop it.

Result Three: How Students Experience the Program

Because our program is delivered entirely online, we wanted to understand how participants engaged with faculty and connected to other students. The program's catalog description and assessment both highlight working in conjunction with non-profit staff and leadership as an essential outcome. Both in a pedagogical sense of community-building and with eyes towards the "relationships and genuine collaborations" that we see as typical of technical communication work at its best (Jones, 2016, p. 356). Participants universally described liking working with program faculty and each instructor in the program was mentioned by name positively at least once across all interviews. But fundamentally students' connections in the program are to individual courses and faculty rather than other students. While we see our courses as designed around collaboration, our students see group work. When asked about how connected they felt to other students in their courses, only three female participants described sustained connections and male participants talked negatively about their experiences with group work. Only one participant mentioned learning to collaborate as an important skill or takeaway in the program. All students rejected the idea that gender, cultural, or socioeconomic differences played a role in their course or program experiences. Four students specifically noted that they "didn't see" or "never saw" those things influencing their courses. This and each of the other results indicate takeaways that we must address in the certificate program.

Takeaways and Paths Forward

One final question remains: What do we do with what we've learned? If we want to improve our program and if we want to meaningfully help our students understand the systemic issues that cause the social problems that non-profits exist to address, how do we go forward? And what, if any, lessons are there for other TPC programs at HSIs that emphasize community engagement? We offer three takeaways that interweave and build on our results.

Takeaway One: A Strong Community and Social Justice Identity will Strengthen the Writing for Non-Profits Curriculum and Address Larger Disciplinary Needs

Initially, the program's identity was job preparation, an attempt to explicitly link writing skills to specific career paths. As an HSI, we were aware that job preparation was a major consideration for the students who attend our university, and the WNPR program appeared to be an opportunity to serve our students and offer a benefit to the community. Our second result concerning program draws confirms this perspective. When focusing on job preparation, we focused on equipping students to function in the linguistic and cultural spaces of non-profit writing. However, we did not build into the curriculum any examination of the ideologies that govern these linguistic and cultural spaces, nor did we include any methodologies to conduct such an examination. As our first result indicates, the program fails to ask students to investigate and draw on community- and culture-based motivations—this is something they bring to the table themselves.

We have been practicing poor non-profit management. A central tenet of effective non-profit management is that good non-profit managers are proactive rather than reactive (in non-profit fundraising circles, something we spend a fair amount of time on in our program, the terms are "proactive" and "responsive"). Proactive managers initiate "change from within and plan ahead to avoid or manage future problems" (Sakellariou, 2016, para. 7). In contrast, reactive managers react to events as they occur, which often results in a constant state of "firefighting mode," which is "stressful, inefficient, and expensive" because "it costs more to solve problems than prevent them" (para. 5). As a program that works closely with non-profit agencies and as one that discusses strategic planning and program design in some of our courses, this irony does not escape us.

As our program has developed, attention to social justice has been reactive. By conflating community involvement, social justice, and antiracism (as discussed above), we have created a situation in which we expect social justice and antiracist work will happen rather than explicitly planning for it or redesigning our program to ensure that it happens. Going forward, one of the major takeaways we get from listening to our students is that we need to work proactively to ensure such work is an explicit part of our program from now on.

The two senior-level (4000-level) courses in our curriculum would appear to be logical places to begin this proactive work. These two courses (Writing in the Non-profit Agency and Grants and Proposals) deal most specifically with TPC work within non-profit agencies,

and students are already studying and, in some cases, working with non-profit agencies. Alongside their work we plan to include readings and discussions which offer additional critical perspectives on non-profits and how these agencies have developed in the United States, specifically including selections from *The Revolution Will Not Be Funded: Beyond the Non-Profit Industrial Complex* by INCITE! Women of Color Against Violence. For example, Paul Kivel's "Social Service or Social Change" provides a useful heuristic of self-analysis and reflection questions for people working in and for non-profits, while Ruth Wilson Gilmore's "In the Shadow of the Shadow State" offers readers a critical history of the non-profit industrial complex. Another point of discussion could be an exploration of how, no matter the motivations behind it, charities and "benevolent giving" perpetuate imbalances of power, creating a "benevolent empire" where those being dominated are ruled "for their own good" (Gilbert & Tiffin, 2008, p. 6). Non-profit agencies and private foundations which distribute grants owe their very existence to U.S. tax codes. Another relevant topic for social justice inquiry could be a discussion of how U.S. income tax codes, particularly the joint tax return, were created in a way that specifically puts African Americans at a substantial economic disadvantage (Brown, 2021). The above are examples of the kinds of resources program faculty are exploring in order to frame social justice conversations as part of our path forward. Many resources exist, and once we develop a common framework, individual faculty will identify resources appropriate for themselves and their pedagogical approaches.

As we identify the social problems the non-profit organizations we work with address and the ways those problems affect our community, we must build in discussions of the social structures that create and perpetuate those problems. We must invite our students to see themselves as part of those systems. And, most importantly, we must help our students to look beyond those ideologies, to ask questions such as "Does it have to be this way?" and "What can be done to change this system?" and "How can things be made more just?" Doing so also encourages us to be reflexive about whether our program codifies or resists narratives about higher education and TPC, and to what extent our program codifies meritocratic and color-evasive narratives about writing professionals.

Takeaway Two: Service Learning in the Curriculum Does Not Necessarily Equate to a Social Justice Curriculum

Although students reported they were gaining valuable skills and experience and felt that the service learning projects they were engaging

in were meaningful, this does not translate to doing the work of social justice. Meaningful work in the community has its own value, but the work alone does not invite students to explore their own agency; it does not equip them to challenge social, cultural, or economic inequalities, nor does it seek to examine the systems of power and privilege that create those inequalities and keeps them in place. Our students appreciate the value of enhancing their skillsets or rhetorical and genre knowledge; however, skills were the only things they reported learning about.

While a focus on improved writing and communication through service learning is a program strength, students' lack of descriptions of learning experiences related to justice, ethics, collaboration/coalition-building, or social problems points to a missed opportunity. For example, as part of the Grants and Proposals course, WNPR students regularly work with the local food bank, youth services agencies, homeless shelters, health service organizations, and literacy councils. As a result of the work these agencies do and as they write their individual grant projects, students are introduced to studies about the effects of poverty, limited access to education, transportation injustice, and juvenile delinquency. As the program is currently configured, students study these social issues and work with agencies seeking to address them, but the courses are not configured to explore why these problems exist in much detail. Essentially, we left out a step. Creating assignments where students research and write about why social inequities exist beyond the immediate problem-solving context of a particular non-profit organization can provide a framework for conversations about social justice to occur, conversations that can be continued throughout the curriculum in a logical way, because each new agency provides a chance for student inquiry about different kinds of injustice and which populations are most affected by them.

Additionally, as our third result indicates, our students struggle to learn about collaboration and the significant role of coalition-building in justice work. As a first step, the two faculty who teach the Grant Writing course (one of whom is not part of this study) are developing in-class procedures, including work teams with specific roles, that more closely reflect the kinds of collaborative work that occurs in non-profit agencies. Additionally, students in different sections of the course (currently there are three sections) who are working with the same agency are being encouraged to communicate with one another and share information and ideas; we have developed a database to facilitate such collaborations. These are preliminary steps, and program faculty will continue to explore ways to more effectively foster meaningful student

collaborations.

Takeaway Three: We Must Continually Listen to our Students to Identify the Gaps as Well as the Successes in our Program

This final takeaway is the easiest to state and the hardest to implement. As reflective teachers, we build opportunities into our courses for students to reflect on their own work and to give us feedback in a variety of meaningful ways beyond end-of-term, one-size-fits-all course evaluations. However, this exercise—looking at the program as a whole, examining how students move through it, and getting input about how course content impacts their experiences in the program and fits into their lives—was both affirming and humbling. Students affirmed some things we hoped were true about the program: that they felt they were developing job skills that they found relevant and useful and that they found the service learning projects they were engaging in to be meaningful. When we asked students what courses, experiences, or skills they would like to see in the program, some of their answers—such as requesting more networking opportunities with local agencies or doing more video and visual projects to help students build their portfolios—are things we are adding to our courses right now. In this way, students participate in the program as co-designers, rather than just as customer-feedback survey fillers. These conversations inform choices about course and program-level strategies, pedagogical changes, and more.

We were also humbled to learn that students found what we believed to be important aspects of the program, including working on collaborative projects, to be less valuable and equated it with school drudgery. More humbling was the realization that doing situated work in the community did not lead the students to think about social justice in systematic, useful ways. Garcia (2019) recommended that organizations that not only proclaim but actively promote an HSI identity must "value and embrace nondominant input, process, and outcome variables" (p. 118). One way for us to enact this identity in our program is to formalize regular student input beyond an exit interview as program assessment, either through interviews or a student advisory council (we are currently exploring the feasibility of each avenue for our online program). By framing conversations with current and recently graduated students as a feedback and change mechanism for them as members of the community, we offer a way for students with Hispanic and other multiply marginalized identities to participate in continued iterative development of our program. By specifically inviting students to connect their experience in the program to their

identities rather than just their demographics, we are able to consider our students' varied perspectives and see them as characters/agents in their own stories of causes, people, spaces, and communities rather than just male or female, white or Hispanic, 22 or 37 or 63 years old. By inviting them to tell us how the program benefits them and how they would improve it, we invite them to participate in localizing it to our actual students rather than what we imagine our students to be from limited in-class (or in-LMS) interactions.

Conclusion

The old proverb "be careful what you wish for" applies to us as we draw conclusions on this study. We wanted to discover what our students think of the WNPR program, to learn how they experience it, to ascertain whether students feel the program has value, and to learn what's working and what needs improvement. We received answers to these programmatic questions about our program, yes. We also—despite the study's small size and scope—learned a great deal that is relevant to current discussions about social justice, especially as it applies to HSIs trying to innovate in this curricular space to meet the needs of their students and communities. Long-term faculty members in our program had assumed that having students engage in meaningful service-learning projects in their own communities provided an openly social justice component to our curriculum. Our own students showed us these were gaps in our program; conversations with them helped us identify and address those gaps.

Among the usual suspects in limitations of studies of this scale, we recognize that the initial research was designed to look for some different things than we ended up finding. When writing our initial proposal and IRB our primary interest was the modality of the online program and how students experienced it and each other. We designed our protocols to learn about how their social and cultural backgrounds affected their experiences, but did not explicitly set out to study the social justice orientation of the program; this was a theme that emerged during analysis rather than something we set out to find. At the same time, that these themes emerged regardless of our study design suggests to us something about their importance. As we seek ways to continually and intentionally gather the kind of data this study generated—to listen to our students—we must also be prepared to continually act on what we learn. Follow-up research from this project will investigate the uptake of social justice curricula among TPC students: how do they perceive, experience, and understand social justice pedagogies as part of their larger experiences and studies?

What characterizes effective ways to frame and inspire this work in our program, in our university, and in our region? We must be flexible and adaptive—something we know from the discipline of technical communication, but something which can be difficult to implement in higher education.

References

Agboka, Godwin Y. (2013). Participatory localization: A social justice approach to navigating unenfranchised/disenfranchised cultural sites. *Technical Communication Quarterly, 22*(1), 28–49. https://doi.org/10.1080/10572252.2013.730966

Annamma, Subini A.; Jackson, Darrell D.; & Morrison, Deb. (2017). Conceptualizing color-evasiveness: Using dis/ability critical race theory to expand a color-blind racial ideology in education and society. *Race and Ethnicity in Education, 20*(2), 147–162. http://dx.doi.org/10.1080/13613324.2016.1248837

Araiza, Isabel; Cárdenas Jr., Humberto; & Garza, Susan Loudermilk. (2007). Literate practices/language practices. In Cristina Kirklighter, Diana Cárdenas, & Susan Wolff Murphy (Eds.), *Teaching writing with Latino/a students: Lessons learned at Hispanic-serving institutions* (pp. 87-97). State University of New York Press.

Baca, Isabel; Hinojosa, Yndalecio Isaac; & Murphy, Susan Wolff. (2019). Introduction. In Isabel Baca, Yndalecio Isaac Hinojosa, and Susan Wolff Murphy (Eds.), *Bordered Writers: Latinx identities and literacy practices at Hispanic-serving institutions* (pp. 1-12). State University of New York Press.

Bonilla-Silva, Eduardo. (2014). *Racism without racists: Color-blind racism and the persistence of racial inequality in America* (4th ed.). Rowman & Littlefield Publishers, Inc.

Bourelle, Tiffany. (2014). Adapting service-learning into the online technical communication classroom: A framework and model. *Technical Communication Quarterly, 23*(4), 247-264. https://doi.org/10.1080/10572252.2014.941782

Brown, Dorothy A. (2021). *The whiteness of wealth: How the tax system impoverishes Black Americans—and how we can fix it.* Crown Publishing.

Burke, Meghan. (2017). Colorblind racism: Identities, ideologies, and shifting subjectivities. *Sociological Perspectives, 60*(5), 857-65.

Cargile Cook, Kelli. (2014). Service learning and undergraduate research in technical communication programs. *Programmatic Perspectives, 6*(1), 27-51.

Dayley, Chris. (2019). Student perceptions of diversity in technical and professional communication academic programs. *Technical Communication Quarterly, 29*(1), 46-69. https://doi.org/10.1080/10572252.2019.1635210

Dayley, Chris. (2021). Combatting embedded racism in TPC academic programs: Recruiting for diversity using student-informed prac-

tices. *Programmatic Perspectives, 12*(1), 5-38.
Dubinsky, James M. (2002). Service-learning as a path to virtue: The ideal orator in professional communication. *Michigan Journal of Community Service Learning, 8*(Spring), 61-74.
Garcia, Gina Ann. (2019). Defining "servingness" at Hispanic-serving institutions (HSIs): Practical implications for HSI leaders. *Race and Ethnicity in Higher Education: A Status Report. American Council on Education.* https://www.equityinhighered.org/resources/ideas-and-insights/defining-servingness-at-hispanic-serving-institutions-hsis-practical-implications-for-hsi-leaders/
Gilbert, Helen, & Tiffin, Chris. (Eds.). (2008). *Burden or benefit? Imperial benevolence and its legacies.* Indiana University Press.
Gilmore, Ruth Wilson. (2017). In the shadow of the shadow state. In INCITE! Women of Color Against Violence (Eds.). *The revolution will not be funded: Beyond the non-profit industrial complex* (pp. 41-52). South End Press.
Gonzales, Laura. (2019). Teaching technical communication on the Mexico/US border: A brief case study. In Isabel Baca, Yndalecio Isaac Hinojosa, and Susan Wolff Murphy (Eds.), *Bordered writers: Latinx identities and literacy practices at Hispanic-serving institutions.* State University of New York Press.
Gonzales, Laura, & Baca, Isabel. (2017). Developing culturally and linguistically diverse online technical communication programs: Emerging frameworks at University of Texas at El Paso. *Technical Communication Quarterly, 26*(3), 273–286. https://doi.org/10.1080/10572252.2017.1339488
Gonzales, Laura; Leon, Kendall; & Shivers-McNair, Ann. (2020). Testimonios from faculty developing technical & professional writing programs at Hispanic-serving institutions. *Programmatic Perspectives, 11*(2), 67-92.
Gutiérrez, José Ángel. (2011). The chicano movement: Paths to power. *The Social Studies, 102*, 25–32. https://doi.org/10.1080/00377996.2011.533043
Hashlamon, Yanar, & Teston, Christa. (2021). Teaching participative justice in professional writing. *Technical Communication Quarterly, 31*(2), 159-174. https://doi.org/10.1080/10572252.2021.2000031
Hea, Amy C. Kimme, & Shah, Rachael Wendler. (2016) Silent partners: Developing a critical understanding of community partners in technical communication service-learning pedagogies. *Technical Communication Quarterly, 25*(1), https://doi.org/10.1080/10572252.2016.1113727

Hinojosa, Yndalecio Isaac, & Zepeda, Candace. (2018). The Coyolxauhqui imperative in developing comunidad-situated writing curricula at Hispanic-serving institutions. In Sara A. Ramirez, Larissa M. Mercaco-López, & Sonia Saldívar-Hull (Eds.), *El mundo zurdo 6: Selected works from the 2016 meeting of the Society for the Study of Gloria Anzaldúa* (pp. 57-72). Aunt Lute Books.

INCITE! Women of Color Against Violence (Eds.). (2017). *The revolution will not be funded: Beyond the non-profit industrial complex*. South End Press.

Jones, Natasha N. (2016). The technical communicator as advocate: Integrating a social justice approach in technical communication. *Journal of Technical Writing and Communication, 46*(3), 342–361. https://doi.org/10.1177/0047281616639472

Jones, Natasha N. & Walton, Rebecca. (2018). Using narratives to foster critical thinking about diversity and social justice. In M. F. Eble and A. M. Haas (Eds.), *Key theoretical frameworks: Teaching technical communication in the Twenty-First Century* (pp. 241-67). Utah State University Press.

Kells, Michelle Hall. (2007). Foreword: Lessons learned at Hispanic-serving institutions. In Cristina Kirklighter, Diana Cárdenas, & Susan Wolff Murphy (Eds.), *Teaching writing with Latino/a students: Lessons learned at Hispanic-serving institutions* (pp. vii-xiv). State University of New York Press.

Kivel, Paul. (2017). Social service or social change? In INCITE! Women of Color Against Violence (Eds.). *The revolution will not be funded: Beyond the non-profit industrial complex* (pp. 129-149). South End Press.

Leon, Kendall, & Enríquez-Loya, Aydé. (2019). Hispanic-serving institution as programmatic invention. In Isabel Baca, Yndalecio Isaac Hinojosa, and Susan Wolff Murphy (Eds.), *Bordered writers: Latinx identities and literacy practices at Hispanic-serving institutions* (pp. 157-174). State University of New York.

Mathieu, Paula. (2005). *Tactics of hope: The public turn in English composition*. Boynton/Cook.

Matveeva, Natalia. (2015). Teaching technical, scientific, or professional communication at Hispanic-serving institutions. *Programmatic Perspectives, 7*(1), 3-20.

Melonçon, Lisa. (2012). Current overview of academic certificates in technical and professional communication in the United States. *Technical Communication, 59*(3), 207–222.

Newman, Beatrice Méndez. (2007). Teaching writing at Hispanic-serving institutions. In Cristina Kirklighter, Diana Cárdenas, & Susan

Wolff Murphy (Eds.), *Teaching writing with Latino/a students: Lessons learned at Hispanic-serving institutions* (pp. 17-35). State University of New York Press.

Phelps, Johanna L. (2021). The transformative paradigm: Equipping technical communication researchers for socially just work. *Technical Communication Quarterly, 30*(2), 204–215. https://doi.org/10.1080/10572252.2020.1803412

Popham, Susan L. (2016). Disempowered minority students: The struggle for power and position in a graduate professional writing program. *Programmatic Perspectives, 8*(2), 72–95.

Reese, Stephen D.; Danielson, Wayne A.; Shoemaker, Pamela J.; Chang, Tsan-Kuo; & Hsu, Huei-Ling. (1986). Ethnicity-of-interviewer effects among Mexican-Americans and anglos. *The Public Opinion Quarterly, 50*(4), 563–572.

Sakellariou, Stacy. (2016, March 17). Make the Move: Reactive to Proactive Change Management. https://trustvip.com/from-reactive-to-proactive-break-free-from-firefighting-mode/

van Bochove, Marianne; Burgers, Jack; Geurts, Amber; de Koster, Willem; & van der Waal, Jeroen. (2015). Questioning ethnic identity: Interviewer effects in research about immigrants' self-definition and feelings of belonging. *Journal of Cross-Cultural Psychology, 46*(5), 652-666.

Walton, Rebecca, & Agboka, Godwin Y. (Eds.). (2021). *Equipping technical communicators for social justice work: Theories, methodologies, and pedagogies.* Utah State University Press.

Walton, Rebecca; Colton, Jared S.; Wheatley-Boxx, Rikki; & Gurko, Krista. (2016). Social justice across the curriculum: Research-based course design. *Programmatic Perspectives, 8*(2), 119.

Walton, Rebecca; Moore, Kristen; & Jones, Natasha N. (2019). *Technical Communication after the social justice turn: Building coalitions for action*. Taylor & Francis Group.

WIlliams, Miriam F., & Pimentel, Octavio. (2012) Introduction: Race, ethnicity, and technical communication. *Journal of Business and Technical Communication, 26*(3), 271-276.

Appendix

Semi-Structured Interview Script for 60-minute semi-structured interviews.

During this interview, an investigator will ask several questions in order to:

1. establish context for participants' experiences in the Writing for Non-Profits (WNPR) Certificate program,
2. gather details of participants' experiences in the WNPR Certificate program that relate in particular to sociocultural issues,
3. gather details of participants' experiences related to the online nature of the WNPR Certificate program.

At the beginning of each interview, the interviewer must provide the consent form and receive the participant's signature before continuing and before starting the recorder. The interviewer will point out sections on the consent form regarding the purpose and potential risks of participating, and will remind the participant that they can stop the interview at any time.

Section A: The following questions have to do with your general context and reasons for joining the WNPR program.

1. How would you self-identify in terms of ethnicity, gender, and/or socioeconomic status?
2. Are you originally from Corpus Christi or the Coastal Bend, or did you come here from somewhere else?
3. Along with the Writing for Non-Profits Certificate, what degree and major field of study were you seeking? (Major, minor, etc)
4. What drew you to the Writing for Non-Profits Certificate?

Section B: The following questions ask you to reflect on sociocultural aspects of the WNPR program

5. Could you tell me about a normal week for you while taking one of the online courses in the WNPR program? When or where did you normally do coursework? What sorts of things enabled your success? What impediments did you experience?
6. How connected did you feel to other students and faculty in the program? What encouraged or discouraged those connections for you?
7. To what extent—if any—were you able to draw on your cultural, personal, regional, or other identities and integrate them into your work in the program?

8. Have you ever felt as if your gender affected your experience in the program? These could be positive, negative, or other kinds of effects.
9. Have you ever felt as if your cultural or racial identity affected your experience in the program? These could be positive, negative, or other kinds of effects.
10. Have you ever felt as if your socioeconomic background affected your experience in the program? These could be positive, negative, or other kinds of effects

Section C: The following questions ask you to reflect on the WNPR program more generally

11. What did you feel were particular advantages or challenges of the online nature of the program?
12. Describe a learning experience you found most valuable in the program. Least valuable?
13. Did you develop skills that you felt would benefit you in your professional or personal life? What skills did you develop? What were skills you wish you had developed in the program?
14. How do you think the program could be improved to make it more useful?
15. Overall, what benefit did you derive from the courses you took in the WNPR certificate program?

Author Information

Christopher Andrews is an Assistant Professor of English at Texas A&M University—Corpus Christi, where he coordinates both the Technical and Professional Writing Minor and the Writing for Non-Profits Certificate programs. His research, teaching, and service work out from a crossroads of commitments to open access, critical theories of technology, and user-centered program development. His work has appeared in *IEEE:Transactions in Professional Communication*, *Computers & Composition: An International Journal*, and *Open Words: Access and English Studies*. He currently serves as a Managing Editor for *Kairos: A Journal of Rhetoric, Technology, and Pedagogy*.

Charles Etheridge received the B.A. degree in English from the University of Texas at El Paso, and an MA and Ph.D. from Texas Christian University. He is a Professor of English at Texas A&M University—Corpus Christi. His research focuses on professional and workplace writing, particularly on fundraising and other nonprofit-writing activities. With Dr. Diana Cárdenas, he developed the Writing for Nonprofit Certificate Program.

Student Technical Editors as Writing Consultants for Mechanical Engineering Capstone Design Teams: A Case Study in Interdisciplinary Curriculum Development

Russell Kirkscey
Anilchandra Attaluri
Penn State Harrisburg

Abstract. This case study describes the conditions, outcomes, and pedagogical implications of a project in which technical and professional communication (TPC) students worked as technical editing consultants for a mechanical engineering instructor to support the communication needs of five undergraduate mechanical engineering teams during the final semester of their client-driven capstone design projects. Study results revealed that the participants, including the instructor and internship advisor, thought the project was worthwhile as workplace preparation and as an undergraduate capstone experience that improved TPC competencies on ABET standards for professional communication. Additional themes developed from data analysis included insights on previous course preparation, editor-team communication and workflow, and leadership/power issues between editors and team members. Recommendations for further curriculum development included considering ways to integrate student editors more fully into the teams, increasing support for effective collaboration strategies, increasing client feedback, and providing a pedagogical structure for accountability to monitor team participation in the editorial process.

Keywords: Capstone Courses, Mechanical Engineering, Pedagogy, Technical Editing, Technical and Professional Communication, Team Communication

Contact author: trk82@psu.edu

The Accreditation Board for Engineering & Technology (ABET) for undergraduate education has mandated that engineering students should demonstrate "an ability to communicate effectively with a range of audiences" and "an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives" (Criteria, 2019, p. 4-5). These two outcome-based criteria, first outlined by ABET in 2000, have formed the foundations from which colleges and universities have begun to develop initiatives to integrate technical and professional communication (TPC) competencies into engineering curriculums.

However, the development of communication skills for engineering undergraduates remains an ongoing challenge as students move from the classroom to the workplace. A recent mapping review of 187 empirical research articles investigated professional competencies of engineers and found that the needs for formal and informal communication skills were "most common" in the scholarship:

> Despite…different methodologies and whether this question was asked for all engineers or a specific discipline, all these studies came to the same conclusions: among all the competencies that engineers need, professional competencies (e.g., team-work, communication skills) are as important, if not even more important, than technical competencies, and engineers tend to have not developed professional competencies during university as much as required for practice. (Mazzurco et al., 2021, p. 10)

Consequently, engineering instructors have been challenged in their efforts to increase effective pedagogies for teaching communication skills. For example, ABET criteria for communication and teamwork are not well assessed in capstone design courses (McKenzie et al., 2004). This problem may be explained in part by the need for instructors to balance many student learning objectives in these courses that showcase students' entire range of competencies while they work on a client-oriented final project. Thus, while engineering instructors understand the importance of writing skills, they find that constraints on time and resources decrease their ability to teach strategies for effective communication concurrently with technical content (Buswell et al., 2019).

This pedagogical dilemma may contribute to a dissociation between TPC programs and the engineering programs that may depend on them for curricular support. A survey of technical writing

instructors (n=70) from colleges and universities across the U.S. found that a large percentage of "technical communication programs provide a service course for engineering programs," though "there is virtually no collaboration between the two in terms of the design or teaching of that course" (House et al., 2007, p. 3). For example, Susan Conrad's (2017) comparison of engineering student writing with professional engineer writing revealed "less accurate word choice, more errors in grammar and punctuation, and less linear organization" in the student texts caused in part by student misperceptions about workplace writing (p. 191). Furthermore, a case study at a large research university found that writing assignments in engineering courses may not reflect effective strategies for writing instruction and that "departmental curricula do not distribute writing across the four-year programs" (Yoritomo et al., 2018, p. 1).

Marie Paretti (2008) called for further investigation of several research questions related to developing a robust communication curriculum in engineering design courses including best practices for oral and written assignments, faculty training and participation, and the role of interdisciplinarity in pedagogical initiatives (also refer to Goldberg et al., 2011; Paretti et al., 2019). In response, this study seeks to answer the following research question: How do undergraduate technical editing students and teams of mechanical engineering (ME) students work together to produce written and oral communication for industry clients in a capstone design course?

We explore this research question by reporting on a case study of an interdisciplinary undergraduate curriculum initiative in which two technical writing students served as interns for an instructor teaching five student teams (16 students) in one section of an ME capstone design course in a college of a large research university. The student editors (one English major and one public affairs major) were technical writing minors and had completed at least 18 credits in six or more courses that included technical editing, communication design and production, and rhetorical analysis. The editors' internship advisor was also their instructor for some courses in the technical writing minor curriculum. Keeping in mind William Zinsser's (2006) observation that "Writing is hard work. A clear sentence is no accident. Very few sentences come out right the first time, or even the third time" (p. 9), we had two major goals for the curriculum development project: (1) ensuring that the ME students engaged in writing, reviewing, and revising documents throughout the semester and (2) improving the quality of the final report to the client. This case study contributes to research about pedagogical strategies that may improve the

communication skills of undergraduate engineering students and the professional editing skills of undergraduate technical writing students in smaller or developing programs and departments.

We begin with a review of pertinent academic literature. Then we discuss our research methodology and methods. The case study follows with themes developed during interviews with the student editors, ME team members, the course instructor, and the internship advisor as well as assignment drafts. We conclude with observations and recommendations for continuing curriculum development.

Scholarly Background

TPC's inherent grounding in rhetoric invites interdisciplinary work with many other academic and professional areas, and the relationship between TPC and engineering has been strong for several decades (Harlow, 2010). This association parallels TPC's own development from its origins as a service field for teaching writing skills to undergraduate engineers to its broader contexts as an autonomous discipline (Schriver, 2012). Since Jack Selzer's (1983) study of a single professional engineer's communication strategies, scholars in TPC have researched the writing processes of engineers both in academia and in the workplace. Scholarship has expanded, for example, to analyzing document usage and revision among a group of engineers (Paradis et al., 1985), tracing knowledge and skill transfer from undergraduate programs to the professional office (Winsor, 1990), and reporting on communication competencies in project management (Wisniewski, 2018).

Writing in the Disciplines and Across the Curriculum

This interdisciplinary relationship between engineering and TPC has continued with an emphasis on improving the communication competencies of both undergraduate engineering majors and TPC students through curricular development in writing across the curriculum and writing in the disciplines (WAC/WID), interdisciplinary teams, client-oriented communication, and knowledge transfer. Efforts in curriculum development have produced several strategies that may benefit both engineering majors and students who are pursuing majors, minors, or certificates in TPC. Natasha Artemeva, Susan Logie, and Jennie St-Martin (1999) found that communication assignments in engineering that include oral and written components can increase understanding and improve rhetorical skills such as audience adaptation. David Russell (2007) reviewed research in business and technical communication that focused on WID and distilled several

themes that supported "engaging students in coconstructing knowledge" and "socializing students into their discipline" (p. 254-260). Paretti et al.'s (2019) study of engineering students, faculty, and administrators in a European university found that communication assignments increased understanding of engineering information, selecting important information for clients, and justifying design choices. The assignments generally improved student metacognition and strategies for problem-solving. Furthermore, Julie Ford (2012) detailed the development of an interdisciplinary relationship between the mechanical engineering and the TPC programs at New Mexico Tech in which faculty members worked together to design and evaluate client deliverables. This integrated approach foregrounded the need for engineering students to achieve both technical competencies and communication competencies simultaneously while supporting TPC students' practicum experiences.

Producing Client-Oriented Communication

In addressing the disparity of perceptions between academia and the professional engineering workplace about student writing competency and preparation, Jeffrey Donnell, Betsey Aller, Michael Alley, and April Kedrowicz (2011) advocated that universities and colleges continue to develop partnerships with industry clients that support opportunities for students to produce professional communication, especially in capstone design courses. The authors called for further research "to determine what important things about communication we are teaching well and what we are failing to teach, based on students' needs and professional activities beyond the classroom" (p. 22). Paretti (2011) reported that integrated assignments with an outside client as the primary audience were effective at replicating actual workplace genres and professional contexts (also refer to Kreppel & Rabiee, 2003). Rose Norman and Robert Frederick (2000) detailed variations of curriculum development initiatives in which integrated teams of engineering students and technical editing students worked on client-driven design projects. Technical editing students participated as full members of teams or as separate members of editorial teams that worked on deliverables with several engineering teams. Each configuration produced pedagogical benefits and drawbacks based on team dynamics and "positive interdependence" between technical editing students and engineering students (p. 186).

Transferring Knowledge from Academia to Industry

In discussing the need for building on previous report-writing assignments with ME students, Ford (2012) found that "Frequent reinforcement of writing a variety of related documents" is "key to promoting low-road transfer—application of knowledge to situations similar to the context in which they are learned" (para. 25). Knowledge transfer may work in at least two ways. In the broadest sense, instructors in interdisciplinary communication projects can support content and competencies that students can transfer to more than one discipline (Ford, 2012). For example, engineering students should understand and apply communication theory such as audience analysis and genre structures, while TPC students should understand and apply those competencies to specific engineering projects on which they work. This pedagogical strategy also supports transfer of skills and competencies developed in academia to applications in the professional workplace (Narayanan et al., 2010). More specifically, several studies have found that internships and practicums in TPC supported skills transfer from academia to the workplace (Cordiero & Sloan, 1996; Bourelle, 2015; Narayanan et al., 2010). For example, Elisabeth Kramer-Simpson, Julianne Newmark, and Julie Dyke Ford (2015) found that the knowledge gained in interdisciplinary undergraduate client projects transfers to workplace skills such as adapting to audiences, attention to deadlines, and reporting progress (also refer to Bourelle, 2015; Kramer-Simpson et al., 2015).

Methodological Framework

Harlow (2010) argued that "Interdisciplinary research straddles multiple bodies of knowledge, in the process circumventing conventional reasoning, employing, or constructing unfamiliar methodologies, or taking another philosophical path entirely" (p. 325). With this broad context in mind, the present study is informed by situated learning theory (Lave & Wenger, 1991; also refer to Vygotsky, 1978), which encourages instructors to introduce students to communities of practice/discourse communities (Henry, 2013) where participants communicate using genres that define the communities (Luzón, 2005).

Situated learning theory is manifest in WAC/WID initiatives (e.g., Bazerman & Russell, 2003; Mackiewicz, 2012) in which TPC instructors collaborate with colleagues in other disciplines to integrate curriculums, often with the goal of supporting transfer of communication competencies from academia to the workplace (Dyke & Wojan, 2000). Herrington (1985) observed that "writing can

serve in introducing students not only to the intellectual activities of a discipline, but also to the social roles and purposes of various disciplinary communities" (p. 331). Jeff Froyd, Anneliese Watt, and Julia Williams (2002) observed that "The purpose of a senior capstone design course is to provide students a situated learning experience that is relevant to their future professions as engineers" (p. 3). Jean Lave and Etienne Wenger (1991) extended situated learning to include legitimate peripheral participation such as the one addressed in the present study, which explores dimensions of editor and team communication among stakeholders in a capstone design project (also refer to Carter et al., 2007).

Method

Case studies offer robust descriptions of participants and research contexts using data collected from several sources (Eaton, 2010; Yin, 2018). Researchers used purposeful sampling to determine participants, who were recruited from students (n=16) enrolled in the second semester of a two-semester capstone design course for ME majors in their last undergraduate semester in a college of a large research university. Additional participants were two students minoring in technical writing in their final undergraduate semester and who were enrolled in a three-credit internship course. The instructor and internship advisor were also participants as well as researchers. Participants were recruited via email and class announcements by the ME instructor during early team meetings. The research was approved by the authors' institutional review board.

Researchers collected data from transcripts of participant interviews, project status memos from the student editors to the instructor, document drafts with editorial comments, and final versions of project reports and slide presentations from each team. Structured interviews with all participants were recorded using Zoom and were transcribed for analysis. Open-ended interview questions addressed topics such as preparation for professional communication, workflow, interactions between team members and editors, and ways to improve communication opportunities in the course. Following Yin's (2018) recommendation, researchers triangulated all qualitative themes to provide a robust data set. Researchers used thematic analysis (Braun et al., 2019) supported by NVivo 11 qualitative analysis software to interpret all documents, which were first open coded for salient themes based on the structured interview questions. Open codes were refined during axial coding to derive the final themes (i.e., selective coding).

Case Study Results

Five ME students (about 33 percent of the students enrolled in the course section), both student editors, the course instructor, and the internship advisor consented to participate in the research. Four of the five teams in the course were represented by at least one team member. All study participants reported varying degrees of satisfaction with the course processes and products and made recommendations for improving their experience. We begin the case study by describing the pedagogical context, including curriculum development and course workflow. Then we move to address themes related to scaffolding and course preparation, editor-team communication roles and workflow, improvement of technical communication competencies, and leadership/power issues. We conclude with recommendations for improving the next iteration of curriculum development and application.

Pedagogical Context

Penn State Harrisburg is a doctorate-granting college in Penn State University with an undergraduate population of about 5,000 in five schools that include Science, Engineering, and Technology (SET) and Humanities. The ME Program, in the School of SET, serves about 60-80 undergraduates. The Technical Writing Minor Program, in the School of Humanities, was recently founded and has produced 10 minors in its first four years. One author (Kirkscey) has research interests in undergraduate capstone experiences and is the director of the Technical Writing Minor Program. The other author (Attaluri) is the instructor for the ME capstone design experience, a two-semester course in which teams of ME students work with industry clients on research and development projects.

In a brief discussion with the director of the School of SET, Kirkscey inquired about a possible interdisciplinary collaboration on curriculum development. The SET director agreed, placed the topic on the agenda of a planning meeting for all engineering capstone experience instructors, and invited Kirkscey to attend. During the meeting, Attaluri requested writing support for teams in the second half of a two-semester ME capstone design course, and the two authors agreed to develop a curriculum initiative to provide writing support. After reviewing scholarly literature, course enrollment numbers, and scheduling constraints, the authors decided to adopt a writing consultant model as a workplace/internship structure for the student editors (e.g., Carnegie, 2018; Mackiewicz, 2012) rather than moving to integrate the student editors into the teams (e.g., Dyke &

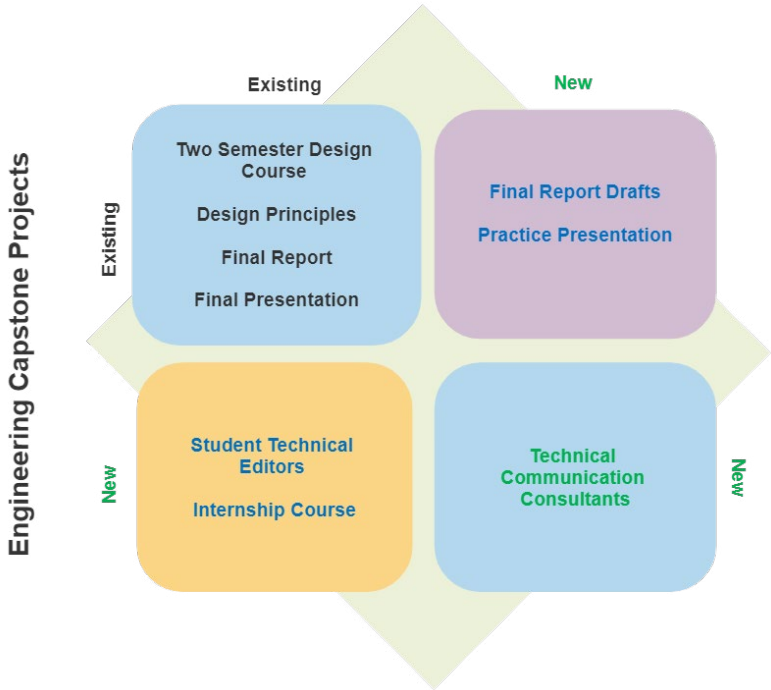
Wojan, 2000). Kirkscey served only as the technical editing students' internship advisor and did not communicate with Attaluri or the ME teams during the semester except to attend a rehearsal for each team's final presentation at the end of the semester. The project served as a capstone experience for the students, all of whom were in their last semester before receiving their baccalaureate degrees.

Curriculum Development

All students participated in an intertwined situated learning experience that would closely resemble a workplace context (e.g., Artemeva, 1998). The ME teams, as subject matter experts, worked with an editor outside their team organization in an iterative process to provide written and oral presentations to their project clients. Previous versions of the capstone design course required only the submission and grading of the final report and oral presentation for the client. Teams did not submit document drafts for instructor evaluation but instead produced brief update memos to report progress on the document and presentation. In the revised curriculum, the student editors as interns worked for the ME instructor to provide expertise to the ME teams. Furthermore, the revised curriculum required two drafts of the final report in four-week intervals during the 14-week semester. Teams also submitted one draft of the final presentation for instructor grading and feedback about halfway through the semester (refer to Figure 1 on the next page).

The instructor also requested that the student editors research and provide the teams digital links to instructional materials for formative assignments such as team project update memos to clients and to the instructor based on topics in Michael Alley's *The Craft of Scientific Writing* (2018) including formatting, figures, tables, equations, references, and writing style. Consequently, the student editors created and/or adapted templates and a style guide for the document genres and wrote memos to the instructor detailing progress on their work with the teams and on the instructional materials. Instructor grading for the written assignments and PowerPoint presentation was based on an assessment rubric developed by ABET representatives (Warnock & Rogers, 2018). Performance indicators included articulation of ideas, professionalism, organization, quality of work, and use of graphs/tables (provided in Appendix).

Figure 1. Existing vs Revised Curriculum Models for Task Roles and Assignments



Note: The curriculum initiative added two final report drafts and a presentation draft to the teams' deliverables in the semester.

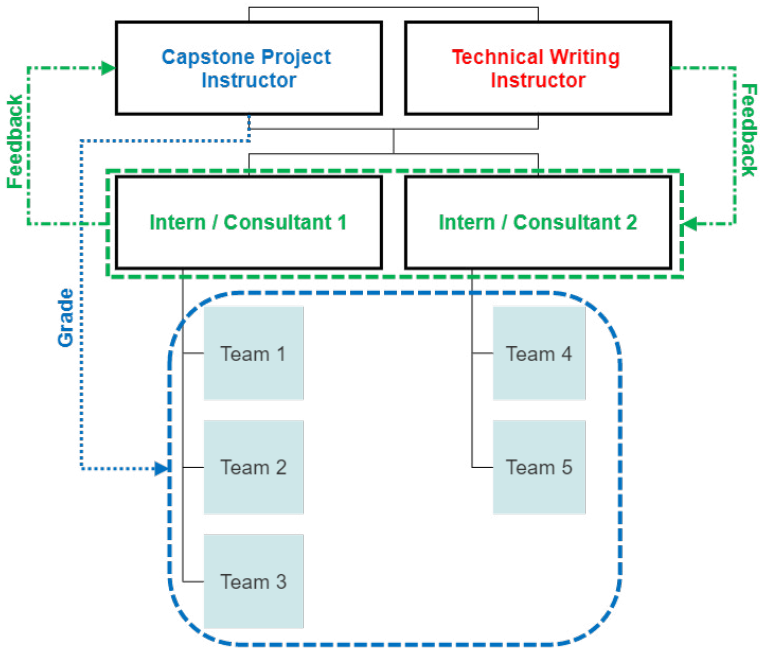
Course Workflow

In an initial meeting with the student editors, the instructor briefed them on their duties and reviewed the specific assignments and due dates. During the semester, the teams and student editors participated in an iterative process of drafting and revising all assignment submissions before submitting the final products to the instructor for evaluation and grading. The editors' and teams' primary goals in the course were to produce drafts and final versions of two summative assignments: a final project report for an industry client and slides for a multimodal presentation (i.e., voice-over PowerPoint talk on Zoom) for the client and a general audience of stakeholders including other possible clients, prospective employers, university administrators, friends, and relatives. Teams, with editorial support from the editors, produced two drafts of the final report that were due at the four- and eight-week points during the semester (refer to Figure 2).

To balance the student editors' workloads, the instructor

requested that one student editor work with three teams who had completed more substantial drafts of the project reports during the first semester of the capstone experience, while the other student editor worked with the two remaining teams, whose documents needed additional editorial attention. The instructor used Microsoft Teams as a communication tool with the teams and included their respective editors in the platform. All students also had access to an online course management system (Canvas) for the course materials, including assignment descriptions, due dates, and web links to sites about technical communication. The ME instructor requested that the editors work individually with their teams to create drafting and editing schedules based on the due dates of the drafts and final report. Student editors also created their own internal workflows for producing a style manual and finding other writing support materials (e.g., information on grammar, punctuation, syntax, and visual design) that the teams used during the semester (Figure 2).

Figure 2. Workflow for Project Participants



Note. Information about the drafting process and writing support materials circulated among the student editors (interns/consultants) and the instructor. The instructor provided graded feedback of assignment drafts to the teams. The technical writing instructor (internship advisor) interacted only with the technical editors during the semester.

Scaffolding and Previous Course Preparation

All team members and student editors had completed at least nine credit hours in required general education written and oral communication courses: first-year composition, public speaking, and a discipline-specific second-year technical writing course. Additionally, ME students had been introduced to professional workplace writing during a first year (cornerstone), three-credit engineering design course.

Student editors and team members in general felt that their preparation in previous technical communication courses supported the goals of the capstone course and enabled them to participate fully in developing the summative course documents. In addition to completing courses for the technical writing minor, one student editor had gained project management competencies during another internship. The other student editor had taken an introductory technical writing class designed for engineering and science majors, which contributed to a deeper understanding of style and content issues specific to the internship needs:

> This [internship] would have absolutely blindsided me had I not kind of been introduced to it…and then kind of used each of those courses as a steppingstone to get here. Those preliminary or prerequisite courses are absolutely vital from my experience. (Student Editor)

Team members also benefitted from the two required general education courses in technical writing for engineering students and in public speaking. Additionally, one team member reported some benefits from taking the cornerstone engineering design course for first-year engineering students. While at least two upper-level ME courses also required lab reports, they were graded on content alone and not as technical communication documents adapted to a particular audience other than the instructors.

Improvement of Technical Writing Competencies

Instructor perspective. The course instructor was generally satisfied with improvement of the teams' technical writing competencies during the curriculum development initiative. At the conclusion of the first semester of the course, all teams scored either *not acceptable* or *below expectations* on all ABET communication performance indicators (refer to Appendix) on a draft of the final report. In the revised curriculum, all teams demonstrated improvement on *Professionalism*, *Quality of Work,* and especially on *Use of Graphs/Tables*. In the latter performance indicator, two teams

exceeded expectations, two teams met expectations, and one team was below expectations. However, limited improvement was observed on *Organization* and *Articulation of Ideas*. Teams continued to struggle with writing clearly and concisely with coherent transitions; only two teams met expectations, while two teams were below expectations, and one team's work was not acceptable.

Student perspectives. Team members and student editors noted that their general technical writing competencies improved during the semester of situated learning. For example,

> When I took my technical writing class, it was very helpful for me to learn how to properly structure things and write in a technical manner. But then actually having to do it with this project and incorporating all the presentations and everything kind of really brought it together. So, I feel like now, I have the confidence to write a technical paper or give a technical presentation. (Team Member)

All students and the instructor especially saw improvement in the visual communication elements in the project reports and presentation slides. One student editor discovered a deeper understanding of the value of multimodal communication in a different discipline:

> I guess I never really thought about how important those graphics would be. In my mind, as an English major, they never come up anyway. This is math and science, and it's really cool to see how writing and those things come together. But it was also a culture shock in a lot of ways. (Student Editor)

Team members specifically noted progress in their final presentations because of the editorial work on the PowerPoint slides, which also improved their oral presentations.

Several team members also increased their understanding of audiences and the need to produce technical communication at a more general level while also including more detailed information for subject matter experts: "And if they want to ask more questions, you open the floor at the end, and you can answer in a more technical manner" (Team Member). The instructor agreed that the student editors embodied an excellent general audience for the team members that sensitized them to differing needs for explanation of the projects: "When someone steps in new that knew that insight, I keep telling them, did you think about the audience? But rather than telling, practicing helps them" (Instructor). Team members also realized that one of the audiences for their report and presentation

consisted of members of their own team, some of whom only understood the technical aspects of certain parts of the project (and thus, only specific sections of the project report and presentation). This context emphasized to teams that technical communication was more than just explaining engineering topics to non-experts. It also underscored the need to ensure that all team members had a working understanding of all parts of the project.

Editor-Team Communication Roles and Workflow

To grant autonomy for working within the schedules of each team and student editor, the instructor purposely under-defined the parameters for editor-team communication. However, the student editors would have preferred more defined roles and expectations to understand the communication and workflow needs of the teams in the scope of the assignments and deadlines.

> In the very beginning of this internship, I felt overwhelmed with the expectations laid before me. I was just expecting to have a few meetings with my teams and edit their work as needed. I had no idea we would be creating a style guide, let alone a comprehensive 12-page one that took a couple of months to complete, especially after initially being told it was to be completed during the second week of classes. (Student Editor)

This aspect was especially important during the iterative process of drafting and editing necessary for the final submissions of the summative documents (i.e., the final report and PowerPoint slides for the final presentation).

The instructor also suggested that editors only communicate with team leaders. However, the editors thought that at least initial meetings with all team members were important to establish communication roles, norms, and expectations in the first weeks of the course. There was some initial confusion about whom should be communicating since the Microsoft Teams platform allowed for both individual and group messaging, so the editors defaulted to posting all messages in the group chat platform so that all participants received all messages. Team members were satisfied with this decision: "I think it's important to make sure that everyone is held accountable for what it is that they're actually doing" (Team Member). The editors responded to all members who communicated, regardless of their leadership statuses on the teams

The student editors and teams settled into a negotiated process that improved as the course progressed. A student editor noted:

> I definitely felt all the groups maintained slightly better communication because they were more comfortable with my role in their projects and were more willing to implement my edits once they got to know me and understood my perspective for improving their work. (Student Editor)

Nevertheless, the editors and team members admitted that the iterative process was difficult:

> Some [members] of my team were good with communication; others weren't. And to me, it seemed like sometimes some of my group had seen the information or the questions going into the group chat but weren't responsive. So, I learned that it can be frustrating when getting no answers when there's a deadline to meet. (Team Member)

While the student editors felt that they were responsible for leadership on the editing processes for the assignments, their outlook remained positive:

> Almost every time I received communication from my teams, I was the one to initiate it. Even then, it would sometimes take days to get a response, and sometimes, I was altogether ignored. When they did reach out to me, though, it was meaningful. (Student Editor)

Turnaround time for document drafts was especially problematic for the editors. The editors and teams generally agreed that teams should give editors 48 hours to complete their work on a draft. While some teams provided their drafts in a timely manner, others asked the editors to provide feedback in as little as nine hours, and still other teams completely missed deadlines during the process.

Student editors attended few (virtual or in-person) meetings with the instructor and team members. When the instructor, teams, and editors did meet, one team member commented that the instructor consistently placed more emphasis on the project's subject matter without contextualizing the information in a discussion of how to present the information using appropriate technical communication strategies. Both student editors expressed a desire to become more familiar with their teams at the content level and at the interpersonal/team-building level. Additionally, the editors never met with the clients or discussed client needs with the teams.

The student editors also would have liked more specific instructions from the instructor on their roles as editing consultants. While the instructor had initial meetings with both student editors, the instructor determined that one of the student editors needed additional information because of an extended absence, so the

instructor chose to task one student editor to deliver messages to the other about course content, the iterative editing process, and communication strategies

Leadership and Power Issues: Defining Roles

The student editors felt that the instructor did not give them enough detailed guidance throughout the course. Their internship advisor explained to the student editors that part of their experience was to work within the constraints given to them by their employer, and that professional positions often entailed an increased need on their part to negotiate with the employer to better define their tasks. However, the student editors remained uncomfortable with this task during the semester. This discomfort with establishing the roles of the student editors in the writing process stemmed in part from the instructor's giving the student editors and teams the autonomy to create their own workflows for drafting the assignments. Except for the due dates for the two report drafts and the final report, the editor-team iterative process did not appear in the course schedule or assignments. While drafts of the reports were graded in part on the teams' incorporation of editor feedback, the editors did not have access to the instructor's comments to the teams and so did not know how to (or if they should) address workflow issues that could support improving the writing process.

The instructor's choice to give the student editors and teams autonomy to work out their own workflows revealed a liminal impasse (e.g., Jeyaraj, 2004) for the interns, who were neither part of a team nor an instructor and did not have the power to control the workflow:

> [The instructor's] notion that [we] should formally assign anything to our teams felt both unbalanced and unfair; we cannot simultaneously be their equals in this project and be given duties of an instructor. That felt too much like project management as opposed to technical editing. (Student Editor)

Though the instructor provided a schedule and grade for internal draft submission deadlines (i.e., grades for participation in the iterative work between the drafts), some teams did not respond in a timely manner (or at all) to student editor requests for drafts and revisions. And, because of the student editors' position in the liminal spaces among the teams and the instructor, they had no way to guarantee production of workflow drafts or to know whether the teams submitted the drafts.

Recommendations: Moving Forward

As we begin to formalize plans for future opportunities for student editors to work with engineering capstone design teams, we will consider several modifications. Providing effective pedagogy to the course experience will take additional planning and deployment, including increasing editors' participation on teams, supporting effective collaboration strategies, incorporating client feedback, monitoring team participation in the editorial process, and improve the scope and sequence for prerequisite courses that address TPC learning objectives. Moreover, to distribute TPC education and assessment across the typical ME undergraduate four-year program, we will further align and revise a scope and sequence for ABET TPC objectives in the first-year, three-credit cornerstone engineering design course, the general education course in technical writing for engineering, and the two-semester capstone course.

Increase Integration of Student Editors on Teams

The results of this study point to a need for student editors to become more integrated members of teams instead of serving as outside consultants. Several of the ME team interview participants and both student editors advocated that the technical editors should participate in both semesters of the capstone course instead of beginning only in the second semester. Furthermore, both editors reported that they spent an inordinate amount of time gaining the content knowledge necessary to support the communication of complex engineering topics to various stakeholders. This move to full participation from project inception will decrease the need for technical editors to catch up with invention and team norming processes that occur at the start of a project (Dyke & Wojahn, 2000). Through increasingly mediated collaboration, technical communicators in industry are revising their functions on teams to increase the flow and quality of communication (Conklin, 2007). Consequently, future versions of this capstone/internship experience should move past a narrow focus on writing and editing documents and toward a broader participation of student editors "working on teams and planning and facilitating communication processes, not just products" (Hart & Conklin, 2006, p. 395) and provide opportunities for editor-team relationship building (Gaitens, 2000). These communication opportunities play an essential role in the success of "interdisciplinary, capstone design courses" in engineering (Wojahn, 2004, p. 156). Working as part of integrated teams in project-based and/or service-learning activities with outside clients, TPC students and engineering students alike have benefitted

from increased opportunities for teamwork on oral and written communication products (Paretti et al., 2007; also refer to Mackiewicz, 2012).

Increase Support for Effective Collaboration Strategies

For more comprehensive participation on the teams, student editors and team members should be introduced to effective collaboration strategies that emphasize the relationships among the different stakeholders (including the instructor), client communication assignments, and professional workplace communication (Dyke & Wojahn, 2000; Ford & Riley, 2003). Cooperative learning involves, among other topics, "positive interdependence, individual accountability, face-to-face promotive interaction, social skills, and group processing" (Dzemidzic et al., 2019, para. 1; also refer to Johnson & Johnson, 2011). The team-building process also underscores the need for inter-team accountability. During the team-forming stage, members should review or identify their communication proclivities using a platform such as the Gallup organization's CliftonStrengths (Soliman & Al-Bahi, 2020). Team member evaluation tools such as the Comprehensive Assessment of Team Member Effectiveness (CATME) (Loughry et al., 2007; Ohland et al., 2013) can be used throughout the project to monitor internal and external communication competencies among students.

Incorporate Client Feedback

Though data from ME team study participants' interviews suggested that their clients were satisfied with their final communication products, the authors will encourage more structured and measurable feedback from clients by developing a rubric that clients can use to monitor and report on communication interactions with their teams (for example refer to Maleki, 2006; Rover et al., 2014).

Monitor Team Participation in the Editorial Process

Individual accountability is one of the foundational goals of cooperative learning (Johnson & Johnson, 2011), and finding ways to emphasize and measure individual participation should increase the accountability of all students as they participate in the editorial process (Norman & Frederick, 2000). The instructor, in collaboration with the TPC advisor, should clearly define assignment expectations and team roles as well as create strategies for holding all team members accountable throughout the editorial process. This move will decrease the undefined autonomy for planning and enacting

the writing process that teams and student editors encountered in the present study. Furthermore, grading of the draft reports will be changed to an incentive model (extra credit) instead of penalizing ME teams who choose not to work with the student editors. Integrating a more specific technical writing rubric into the final report should also provide additional control to the student editors. The rubric will also decrease the need for student editors to take on leadership duties that give them too much power over their peers.

Shift Model from Internships to Undergraduate Teaching Assistants

To give more control to the editors, the instructor plans to move from an internship model to an undergraduate teaching assistant (UTA) model. Using engineering UTAs for engineering capstone design courses has become more widespread in the last two decades (Schiano, 2012; MacNevin et al., 2016). Early research in using UTAs who are engineering majors trained in technical writing has shown promise for future curriculum development projects using this model (Jenkins, 2021; Kecskemety et al., 2015). Additionally, the emphasis on training to write appropriate feedback (Jenkins, 2021) may be reduced or eliminated when using undergraduates who are relatively more prepared than their engineering counterparts to engage in professional editing strategies. In the next iteration of curriculum development, students who are minoring in technical writing and have completed a technical editing course will become UTAs by enrolling in an independent studies course with a TPC faculty member who will provide pedagogical support to the students, work with the engineering instructor(s), and design reflection assignments to monitor team progress. The UTA designation will also allow the editors access to the instructor's feedback to the teams in the learning management system. This move will encourage the UTAs to give teams feedback that the instructor can view on the draft submissions. The next version of curriculum development should also better reflect the academic nature of the work while still providing some internship features such as independent work for clients.

Conclusion

This case study described the conditions, outcomes, and pedagogical implications of a project in which TPC students worked as technical editing consultants for a mechanical engineering instructor to support the communication needs of five undergraduate mechanical engineering teams during the final semester of their client-driven

capstone design projects. Though this curriculum development project was limited by a small sample size, the research methods and outcomes contributed to empirical scholarship that explores challenges and possible solutions for interdisciplinary undergraduate capstone experiences, especially ones at smaller or developing programs.

Study results revealed that the participants, including the instructor and internship advisor, thought the project was worthwhile as workplace preparation and as an undergraduate capstone experience that improved TPC competencies and met ABET standards. Moreover, several themes that emerged from the study data warranted reflection and curriculum revision before we attempt to move forward. Instructors and internship advisors should consider ways to fully integrate student editors into the teams. Furthermore, instructors should increase support for effective collaboration strategies and provide a pedagogical structure for accountability to monitor team and student editor participation in the editorial process.

References

Albers, Michael J., & Flanagan, Suzan. (2019). Editing in the modern classroom: An overview. In S. Flanagan & M. J. Albers (Eds.), *Editing in the modern classroom* (pp. 1–14). Routledge.

Alley, Michael. (2018). *The craft of scientific writing.* Springer. https://doi.org/10.1007/978-1-4419-8288-9

Artemeva, Natasha. (1998). The writing consultant as cultural interpreter: Bridging cultural perspectives on the genre of the periodic engineering report. *Technical Communication Quarterly, 7*(3), 285–299. https://doi.org/10.1080/10572259809364632

Artemeva, N.; Logie, Susan; & St-Martin, Jennie. (1999). From page to stage: How theories of genre and situated learning help introduce engineering students to discipline-specific communication. *Technical Communication Quarterly, 8*(3), 301.

Bazerman, Charles, & Russell, David R. (2003). Introduction. In Charles Bazerman & David R. Russell (Eds.), *Writing selves/writing societies: Research from activity perspectives* (pp. 1–6). WAC Clearinghouse.

Bourelle, Tiffany. (2015). Writing in the professions: An internship for interdisciplinary students. *Business and Professional Communication Quarterly, 78*(4), 407–427. https://doi.org/10.1177/2329490615589172

Braun, Virginia; Clarke, Victoria; Hayfield, Nikki; & Terry, Gareth (2019). Thematic analysis. In Pranee Liamputtong (Ed.), *Handbook of research methods in health social sciences* (pp. 843–860). Springer. https://doi.org/10.1007/978-981-10-5251-4_103

Buswell, Natascha T.; Jesiek, Brent K.; Troy, Cary D.; Essig, Rebecca R.; & Boyd, Joshua. (2019). Engineering instructors on writing: Perceptions, practices, and needs. *IEEE Transactions on Professional Communication, 62*(1), 55–74. https://doi.org/10.1109/TPC.2019.2893392

Carnegie, Teena A. M. (2018). Sustaining service learning in the service course. *Programmatic Perspectives, 10*(1), 110–141.

Carter, Michael; Ferzli, Miriam; & Wiebe, Eric N. (2007). Writing to learn by learning to write in the disciplines. *Journal of Business and Technical Communication, 21*(3), 278–302. https://doi.org/10.1177/1050651907300466

Conklin, James. (2007). From the structure of text to the dynamic of teams: The changing nature of technical communication practice. *Technical Communication, 54*(2), 210–231.

Conrad, Susan. (2017). A comparison of practitioner and student writing in civil engineering. *Journal of Engineering Education, 106*(2), 191–217. https://doi.org/10.1002/jee.20161

Criteria for accrediting engineering programs, 2020 – 2021. (2019). Accreditation Board for Engineering & Technology (ABET). https://www.abet.org/wp-content/uploads/2020/09/EAC-Criteria-2020-2021.pdf

Donnell, Jeffrey A.; Aller, Betsy M.; Alley, Michael; & Kedrowicz, April A. (2011). *Why industry says that engineering graduates have poor communication skills: What the literature says*. 22.1687.1-22.1687.13. https://peer.asee.org/why-industry-says-that-engineering-graduates-have-poor-communication-skills-what-the-literature-says

Dyke, Julie, & Wojahn, Patricia. (2000). Getting "dissed": Technical communicators in interdisciplinary engineering teams. *18th Annual Conference on Computer Documentation. IPCC SIGDOC 2000. Technology and Teamwork. Proceedings. IEEE Professional Communication Society International Professional Communication Conference*, 7–23. https://doi.org/10.1109/IPCC.2000.887257

Dzemidzic Kristiansen, Selma; Burner, Tony; & Johnsen, Berit H. (2019). Face-to-face promotive interaction leading to successful cooperative learning: A review study. *Cogent Education, 6*(1), 1674067. https://doi.org/10.1080/2331186X.2019.1674067

Eaton, Angela. (2010). Conducting research in technical editing. In Avon J. Murphy & Charles H. Sides (Eds.), *New perspectives on technical editing* (pp. 7–28). Routledge.

Ford, Julie D. (2012). Integrating communication into engineering curricula: An interdisciplinary approach to facilitating transfer at New Mexico Institute of Mining and Technology. *Composition Forum*, 26.

Ford, Julie D., & Riley, Linda A. (2003). Integrating communication and engineering education: A look at curricula, courses, and support systems. *Journal of Engineering Education, 92*(4), 325–328. https://doi.org/10.1002/j.2168-9830.2003.tb00776.x

Froyd, Jeff; Watt, Anneliese; & Williams, Julia (2002). Writing to design/designing to write: Using the correlations between communication and engineering to improve student reflection. *Proceedings of the 2002 American Society for Engineering Education Annual Conference & Exposition, 7*.1330.1-7.1330.11. https://peer.asee.org/writing-to-design-designing-to-write-using-the-correlations-between-communication-and-engineering-to-improve-student-reflection

Gaitens, Judi. (2000). Lessons from the field: Socialization issues in writing and editing internships. *Business Communication Quarterly, 63*(1), 64–76. https://doi.org/10.1177/108056990006300108

Goldberg, Richard; Caves, Kevin; & Reynolds, Julie A. (2011). Improving the quality of writing in a capstone engineering design course. *Proceedings of the ACEE Annual Conference and Exposition*. 22.843.1-22.843.11. https://peer.asee.org/improving-the-quality-of-writing-in-a-capstone-engineering-design-course

Harlow, Rachel M. (2010). The province of sophists: An argument for academic homelessness. *Technical Communication Quarterly, 19*(3), 318–333. https://doi.org/10.1080/10572252.2010.481530

Hart, Hillary, & Conklin, James. (2006). Toward a meaningful model of technical communication. *Technical Communication, 53*(4), 395–415.

Henry, Jim (2013). How can technical communicators fit into contemporary organizations?. In Johndan Johnson-Eilola & Stuart A. Selber (Eds.), *Solving problems in technical communication* (pp. 75–97). University of Chicago Press.

Herrington, Anne J. (1985). Writing in academic settings: A study of the contexts for writing in two college chemical engineering courses. *Research in the Teaching of English, 19*(4), 331–361.

House, Richard; Watt, Anneliese; & Williams, Julia M. (2007). Mapping the future of engineering communication: Report on a research study of engineering faculty and their teaching of writing as a function of the ABET/EAC criteria. *2007 IEEE International Professional Communication Conference*, 1–5. https://doi.org/10.1109/IPCC.2007.4464077

Jenkins, Connor. (2021). *Undergraduate teaching assistant written feedback: Coding synthesis, analysis and comparison* [Thesis, The Ohio State University]. https://kb.osu.edu/handle/1811/92973

Jeyaraj, Joseph. (2004). Liminality and othering: The issue of rhetorical authority in technical discourse. *Journal of Business and Technical Communication, 18*(1), 9–38. https://doi.org/10.1177/1050651903257958

Johnson, David W., & Johnson, Roger T. (2011). *Learning together and alone: Cooperative, competitive, and individualistic learning*. Allyn and Bacon.

Kecskemety, Krista. M.; Theiss, Andrew M.; & Kajfez, Rachel L. (2015). Enhancing TA grading of technical writing: A look back to better understand the future. *Proceedings of the 122nd ASEE Annual Con-*

ference & Exposition. 122nd ASEE Annual Conference & Exposition, Seattle, WA.

Kramer-Simpson, Elisabeth; Newmark, Julianne; & Ford, Julie D. (2015). Learning beyond the classroom and textbook: Client projects' role in helping students transition from school to work. *IEEE Transactions on Professional Communication, 58*(1), 106–122. https://doi.org/10.1109/TPC.2015.2423352

Kreppel, Maria C., & Rabiee, Max. (2013). University/community partnership through senior design projects. *Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition.*

Lave, Jean, & Wenger, Etienne. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge University Press.

Loughry, Misty L.; Ohland, Matthew W.; & Moore, D. DeWayne. (2007). Development of a theory-based assessment of team member effectiveness. *Educational and Psychological Measurement, 67*(3), 505–524. https://doi.org/10.1177/0013164406292085

Luzón, María. J. (2005). Genre analysis in technical communication. *IEEE Transactions on Professional Communication, 48*(3), 285–295. https://doi.org/10.1109/TPC.2005.853937

Mackiewicz, Jo. (2012). Relying on writing consultants: The design of a WID program for a college of business. *Journal of Business and Technical Communication, 26*(2), 229–258. https://doi.org/10.1177/1050651911429924

MacNevin, Wyatt N.; McCloskey, Bridget; & Osgood, Libby. (2016). More than marking: Experiences as undergraduate design teaching assistants. *Proceedings of the Canadian Engineering Education Association (CEEA)*. https://doi.org/10.24908/pceea.v0i0.6512

Maleki, Reza. (2006). Improving students learning through university/industry collaboration. *Proceedings of the 2006 IJME-INTERTECH International Conference*, 1–17. https://ijme.us/cd_06/PDF/ENG%20201-028.pdf

Mazzurco, Andrea; Crossin, Enda; Chandrasekaran, Siva; Daniel, Scott; & Sadewo, Giovanni R. P. (2021). Empirical research studies of practicing engineers: A mapping review of journal articles 2000–2018. *European Journal of Engineering Education, 46*(4), 479–502. https://doi.org/10.1080/03043797.2020.1818693

McKenzie, Larry; Trevisan, Michael; Davis, Denny; & Beyerlein, Steven. (2004). Capstone design courses and assessment: A national study. *ASEE Annual Conference Proceedings*, 1545–1562.

Narayanan, Vadake K.; Olk, Paul M.; & Fukami, Cynthia V. (2010). Determinants of internship effectiveness: An exploratory model. *Academy of Management Learning & Education, 9*(1), 61–80. https://doi.org/10.5465/amle.9.1.zqr61

Norman, Rose, & Frederick, Robert A. (2000). Integrating technical editing students into a multidisciplinary engineering project. *Technical Communication Quarterly, 9*(2), 163-189.

Ohland, Matthew W.; Loughry, Misty L.; Woehr, David J.; Bullard, Lisa G.; Felder, Richard M.; Finelli, Cynthia J.; Layton, Richard A.; Pomeranz, Hal R.; & Schmucker, Douglas G. (2013). The comprehensive assessment of team member effectiveness: Development of a behaviorally anchored rating scale for self- and peer evaluation. *Academy of Management Learning & Education*. https://doi.org/10.5465/amle.2010.0177

Paradis, James; Dobrin, David; & Miller, Richard. (1985). Writing at Exxon ITD: Notes on the writing environment of an R&D organization. In Lee Odell & Dixie Goswami (Eds.), *Writing in Nonacademic Settings* (pp. 281–307). Guilford Press.

Paretti, Marie C. (2011). Interdisciplinarity as a lens for theorizing language/content partnerships. *Across the Disciplines, 8*(3), 301–316.

Paretti, Marie C.; Eriksson, Andreas; & Gustafsson, Magnus. (2019). Faculty and student perceptions of the impacts of communication in the disciplines (CID) on students' development as engineers. *IEEE Transactions on Professional Communication, 62*(1), 27–42. https://doi.org/10.1109/TPC.2019.2893393

Paretti, Marie C.; McNair, Lisa D.; & Holloway-Attaway, Lissa. (2007). Teaching technical communication in an era of distributed work: A case study of collaboration between U.S. and Swedish students. *Technical Communication Quarterly, 16*(3), 327–352.

Rover, Diane; Ullerich, Curtis; Scheel, Ryan; Wegter, Julie; & Whipple, Cameron. (2014). Advantages of agile methodologies for software and product development in a capstone design project. *2014 IEEE Frontiers in Education Conference (FIE) Proceedings*, 1–9. https://doi.org/10.1109/FIE.2014.7044380

Russell, David R. (2007). Rethinking the articulation between business and technical communication and writing in the disciplines: Useful avenues for teaching and research. *Journal of Business and Technical Communication, 21*(3), 248–277. https://doi.org/10.1177/1050651907300452

Schiano, Jeffrey L. (2012). A four-year vertically integrated design sequence in electrical engineering. *Proceedings of the 2012 ASEE Annual Conference & Exposition*, 25.51.1-25.51.6. https://peer.asee.org/a-four-year-vertically-integrated-design-sequence-in-electrical-engineering

Schriver, Karen. (2012). What we know about expertise in professional communication. In Virginia W. Berninger (Ed.), *Past, present, and future contributions of cognitive writing research to cognitive psychology* (pp. 275-312). Psychology Press.

Selzer, Jack. (1983). The composing processes of an engineer. College *Composition and Communication, 34*(2), 178–187. https://doi.org/10.2307/357405

Soliman, Abdelfattah Y., & Al-Bahi, Ali M. (2020). Enhancing the psychological dimension of academic advising via implementing CliftonsStrengths themes. *2020 IEEE Global Engineering Education Conference (EDUCON)*, 120–126. https://doi.org/10.1109/EDUCON45650.2020.9125296

Vygotsky, Lev S. (1978). *Mind in society*. Harvard University Press.

Warnock, James, & Rogers, Gloria. (2018). ABET IDEAL: Institute for the Development of Excellence in Assessment Leadership. https://www.abet.org/wp-content/uploads/2018/08/IDEAL_January2018_FINAL.pdf

Winsor, Dorothy A. (1990). Engineering writing/writing engineering. *College Composition and Communication, 41*(1), 58–70. https://doi.org/10.2307/357883

Wisniewski, Elaine C. (2018). Novice engineers and project management communication in the workplace. *Technical Communication, 65*(2), 153–168.

Yin, Robert K. (2018). *Case study research and applications: Design and methods.* Sage.

Yoritomo, John Y.; Turnipseed, Nicole; Cooper, S. Lance; Elliott, Celia M.; Gallagher, John R.; Popovics, John S.; Prior, Paul; & Zilles, Julie L. (2018). Examining engineering writing instruction at a large research university through the lens of writing studies. *Conference Proceedings of ASEE Annual Conference and Exposition*. https://monolith.asee.org/public/conferences/106/papers/22453/view

Zinsser, William. (2006). *On writing well: The classic guide to writing nonfiction.* Harper Collins.

Appendix

Table A1. Rubric for Assessing ABET Written Communication Criteria (Warnock & Rogers, 2018, p. 70)

Performance Indicator	Not Acceptable	Below Expectations	Meets Expectations	Exceeds Expectations
Articulation of Ideas	Student does not articulate ideas at all	Text rambles, points made are only understood with repeated reading, and key points are not organized	Articulates ideas, but writing is somewhat disjointed and difficult to follow	Articulates ideas clearly and concisely
Professionalism	The writing style is inappropriate for the audience and for the assignment	Style is informal or inappropriate, jargon is used, improper voice, tense, etc.	Usually uses good professional writing style	Uses good professional writing style
Organization	Little or no structure or organization is used	Some structure and organization are used	Generally organized well, but paragraphs combine multiple thoughts or sections are not identified clearly	Organized written materials in a logical sequence to enhance the reader's comprehension
Quality of Work	Work is not presented neatly; spelling/ grammar errors present throughout more than 1/3rd of the paper	Work is not neatly presented throughout; one or two spelling/ grammar errors per page	Written work is usually presented neatly and professionally; grammar and spelling are usually correct	Written work is presented neatly and professionally; grammar and spelling are correct
Use of Graphs/ Tables/etc.	No Figures, Tables, or graphics are used at all	Figures, Tables, and Graphics are present but are flawed (axes mislabeled, no data points, etc.)	Use of Figures, Tables, and Graphics that are usually in the proper format	Use of Figures, Tables, and Graphics that are all in proper format

Author Information

Russell Kirkscey, PhD, is Assistant Professor of English and Technical and Professional Writing in the School of Humanities at Penn State Harrisburg. His research interests include programmatic development, capstone experiences, user experience, and the rhetoric of health and medicine.

Anilchandra Attaluri, PhD, is Assistant Professor of Mechanical Engineering in the School of Science, Engineering, and Technology at Penn State Harrisburg. His research interests include the field of theranostic technologies and systems with an emphasis on devices and image-based modeling. He teaches courses on capstone design, engineering simulations, and computational techniques for biomedical applications.

What do We Teach When We Say We Teach UX? A Study of the Practices of TPC Instructors

Heather Noel Turner
Santa Clara University
Emma J. Rose
University of Washington Tacoma

Abstract. Although programs in TPC are well positioned to prepare students for careers in user experience (UX), teaching UX can be challenging due to its breadth and complexity. Despite these challenges, many TPC instructors teach UX with little support or training. To understand and improve how TPC instructors teach UX, this article considers the research questions: 1) What do TPC teachers do when they say they teach UX? What are their definitions, approaches, and activities? 2) What are the structures or constraints that influence UX pedagogical choices? Triangulating data from 80 questionnaire responses, 22 interviews, and a corpus of 53 teaching artifacts, we respond to a long-standing call for pedagogical scholarship on UX with evidence-based practices for instructors and programs. Findings demonstrate the variability and flexibility of teaching practices including how instructors define UX, articulate their expertise, and embed UX into their assignments, courses, and programs. We also demonstrate and discuss the structures and constraints that influence UX pedagogical choices. We conclude with implications for instructors, programs, and the field.

Keywords: Curriculum, Pedagogy, Scholarship of Teaching and Learning, User experience, UX

Contact author: hturner@scu.edu

In the inaugural issue of *Programmatic Perspectives*, James Zappen and Cheryl Geisler (2009) identified the shift from delivering information to users to creating immersive user experiences. This shift requires not just a change in what we teach in technical and professional communication (TPC) programs, but how we teach. They ask if TPC programs can fully embrace this shift to "a design mandate" that places our students and faculty as an essential part of designing and creating new technologies (Zappen & Geisler, p. 25). As an aside, we use the term TPC in a similar way that other authors in *Programmatic Perspectives* do, as a broad term that encompasses the larger field which includes a vast diversity of programs that teach students to write, design, and create in ways that help other people get things done. So, that leads us to ask has TPC taken up the design mandate in the classroom, and, if so, in what way?

Over a decade after Zappen and Geisler's inquiry about shifting to a design mandate, research shows that user-centered design, usability, and/or UX are rarely accounted for in programmatic learning goals. For example, usability only appears as a learning goal in 11 out of 376 Student Learning Outcomes (Clegg et al., 2021). Some TPC programs include a usability course (Melonçon & Henschel, 2013), but a sole course in usability does not fully capture the iterative design process of UX (Zhou, 2014) because it only focuses on the evaluation stage, namely usability testing. Courses focused explicitly on UX design are less common and occur in a minority of TPC programs (Getto et al., 2013). There has been a long-standing call for TPC programs to focus more attention on expanding UX pedagogy (Zhou 2014; Getto et al., 2013) including practical challenges on teaching these topics, such as usability testing (Chong, 2016) and how UX practices are rhetorically situated (Rose & Tenenberg, 2017). This work is particularly relevant now because students in TPC are experiencing a growth in UX positions that include responsibilities traditionally found in job postings for technical communicators (Lauer & Brumberger, 2016). We acknowledge that TPC programs are highly diverse in terms of their structure, resources, curricula, and priorities. Not all TPC programs may be interested in or have the current capacity to shift to UX, but for those who are, there is a need for programmatic research to support this goal.

TPC instructors are engaged in teaching usability (the evaluation method) and UX (the process). Later in this article, we distinguish between these two terms, which makes for a rich discussion that reveals why focusing on UX in our programs is important. Although these differences seem granular in nature, the intersecting

terminology reveals larger conversations about UX, especially how the terms, techniques, and growth have made fundamental shifts in a relatively short amount of time. It is within these larger shifts that we situate this work.

While TPC programs and instructors are well positioned to help prepare students for UX careers and workplaces, teaching UX can be challenging. First, UX is highly interdisciplinary and draws from a variety of related fields, such as human-computer interaction and cognitive psychology. While interdisciplinarity is a strength of the field, it can be a challenge within the confines of higher education due to its structure. According to Karri Holley, because the university is "relying on a departmental structure to organize the basic functions of teaching and research, interdisciplinarity transgresses the organizational boundaries that have long defined American higher education" (2009, p.1). Second, UX includes a wide breadth and depth of content areas such as information architecture, user research, content strategy, visual design, interaction design, and accessibility and a wide range of methodologies and methods (Rose & Turner, 2020). Being able to teach the range of UX skills and competencies to students is a challenge, especially within a field like TPC where UX may just be a small part of the curriculum or an elective. Third, many TPC instructors receive little support or training to teach topics in UX such as usability (Chong, 2018). But despite these limitations and challenges, many TPC instructors do teach UX, including the authors of this article. However, there is little scholarship examining how and why TPC instructors teach UX in the way that they do, which is the primary motivation for this scholarly contribution.

We build on Felicia Chong's valuable work (2016, 2018) which considers to what extent usability is taught in TPC courses and programs. We extend Chong's work to focus on how UX is taught in TPC courses and programs. The research questions we explore in this article are:

1. What do TPC teachers do when they say they teach UX? What are their definitions, approaches, and activities?
2. What are the structures or constraints that influence UX pedagogical choices?

The article is structured as follows. First, we provide a background that differentiates the terms usability and UX, review work related to UX pedagogy in TPC, and identify the need for more programmatic research. Second, we describe the design of our study, including the methods, recruitment, data collection, and analysis. Third, in the results section, we present key qualitative findings and descriptive statistics

from our dataset, including salient characteristics of TPC courses that include UX and identify a list of tensions that UX instructors encounter. Finally, we discuss the key takeaways for instructors and programs.

Background

Differentiating Usability and User Experience

When we say user experience pedagogy or UX pedagogy we are referring to the teaching of theories, methods, and practices of UX. We are not referring to the ways students *experience* pedagogy and/or curricular materials (such as Opel & Rhodes, 2018; Bartolotta et al., 2017; Brizee et al., 2012). Although that scholarship is much needed, it is outside of the scope of this research.

First, it is helpful to look at the difference between two key terms: usability and user experience. Usability, according to the ISO definition, is "The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use." (International Standards for Organization, 2018, 3.1.1). According to Whitney Quesenbery (2014), usability has five dimensions she calls the 5Es, which include effective, efficient, engaging, error tolerant, easy to learn**.** These dimensions can be evaluated and measured through the research method usability testing, which, according to Carol Barnum, is "the activity that focuses on observing users working with a product, performing tasks that are real and meaningful to them." (2010, p. 12). Often the quality of usability can be conflated with the research method of usability testing but they are different. As quoted in Barnum, Ginny Redish differentiates the two terms: "*Big U Usability* is everything that goes into 'creating a product that works for people. It encompasses the entire process and includes all the techniques in the usability specialist's toolkit. *Little u usability* is associated with usability testing.'" (2010, p. 54, emphasis original).

As Redish and Barnum (2011) point out, "Over the last three decades, 'usability' has moved from a primary focus on usability testing, to user-centered design—a longer, broader, and deeper infusion of a usability approach and toolkit throughout design and development, [and] to UX—focusing even more broadly on the larger context of use" (p. 94). This shift from usability to UX has continued over the past decade to the extent that UX is now the standard term to refer both to the design process and the outcome of the design process.

The term user experience, or UX, can also be challenging to define because it functions in two ways. First, it refers to the full experience

that users have with a product, and "encompasses all aspects of the end-user's interaction with the company, its services, and its products." (Norman & Nielsen, n.d.). Second, UX has become a shorthand to refer to the user experience design process, sometimes also referred to as user-centered design. For the purpose of our work, we expand Leah Buley's (2013) definition of UX to: 1) interdisciplinary professional practice and field informed by a variety of disciplines; 2) iterative process that includes a flexible set of methods and techniques for researching what users want and need in order to design products, services, and experiences; and 3) outcome, or the overall effect and material impact created by the interactions and perceptions that someone has when using a product or service.

As mentioned earlier, there has been valuable research examining usability pedagogy (Chong, 2016, 2018). To understand how TPC addressed usability and user testing in textbooks, course syllabi and descriptions, and pedagogical texts, Chong (2016) reviewed generalist textbooks used in undergraduate and graduate courses at Michigan Technological University and openly accessible technical communication syllabi online. From this analysis Chong (2016) found that TPC teaching materials were

> still advocating for the need for usability implementation rather than describing successful (or unsuccessful) practice-level work that is involved in such efforts. Textbooks for introductory technical communication courses offer (some) usability methods, but they often lack in providing useful information on the process of, and the rhetorical strategies necessary for, enacting such Methods. (p. 21)

TPC addressed usability and user testing as an important, but unmet, area of focus that instructors and students should do.

When interviewing two TPC instructors and two students about their experiences with usability testing, Chong (2018) found this implementation gap created challenges for instructors at the classroom level. When learning about usability, students valued reading about usability and working hands-on with users in class. However, instructors had received little support or training in teaching usability and had trouble locating resources and having a standard language to talk about practical usability challenges with students (p. 201-203). In addition to calling for graduate programs to teach usability-focused classes, Chong (2018) called for pedagogical research in TPC to help bridge the gap between the value of usability to technical communicators and the implementation of usability

by technical communicators: researchers could conduct a larger, ethnographic study of diverse students and instructors. A larger study should include "interviews with the students about their experiences with usability testing and interviews with the instructors about their preparation to teach usability as well as what they teach, how they teach it, and how they assess students' work in usability techniques, including usability testing" (Chong, 2018, p. 204).

Chong's work deeply examines pedagogy through textbooks, course materials, and a small number of instructor interviews (2) at one institution. In our project, we extend the questions from Chong's work to consider the broader topic of UX and how it is taught in TPC courses and programs. Chong's scholarship aptly described the issues of teaching usability testing that become compounded when research like ours investigates how we teach different parts of the UX process and not just the evaluation methods. In this study, we build on Chong's work in two ways: we extend the unit of analysis (from usability to UX) and we extend the methods (from a study with two instructors at one institution to a programmatic study with instructors across different institutions). Many other disciplines have a stake in this conversation, but we focus on how it is taught in TPC because we believe that instructors in our field have a valuable point of view that foregrounds the humanistic traditions of TPC (Miller, 1979).

A Call for More Scholarship Related to UX Pedagogy

There has been a sustained call for more pedagogical research related to UX. After reviewing literature explicitly related to UX training, Guiseppe Getto and Fred Beecher (2016) found that

> though much UX education happens through on-the-job training and webinars, and as an introduction to professional theory and practice in university courses, there are few academic programs devoted specifically to training job ready UX designers, and still fewer articles and no books devoted to this topic. (p. 154)

When introducing their collection of theoretically grounded pedagogical approaches to TPC, Angela Haas and Michelle Eble (2018) identified the dissonance between a richly evolving disciplinary landscape and the lack of contemporary scholarship that reflects and connects emerging trends to programmatic, curricular, and pedagogical work:

> Not only are we presently in short supply of book-length projects focused on theoretical and methodological approaches to teaching but the texts we currently have do

> not fully theorize the implications of the cultural studies turn nor attempt to address the social justice turn in relation to technical communication curriculum design and pedagogy. (p. 6)

Similarly, we understand UX pedagogy as a rapidly evolving approach and locate ourselves within a growing scholarly conversation that calls for thoughtful, inclusive, and localized solutions within TPC classrooms. Below, we summarize some of that related work. First, we sketch the incongruity between the call for more sustained research on UX pedagogy and the limited responses in TPC, particularly in *Programmatic Perspectives*. Then, we summarize emerging research about UX pedagogy in TPC.

A Need for Additional Research on UX Pedagogy at the Programmatic Level

In this section, we consider if (and to what extent) the design mandate in general and UX specifically have been taken up in programmatic and pedagogical scholarship of the TPC field.

There are examples of scholarship that use techniques of UX and usability as a way to study an element of curricular implementation or programmatic assessment (refer to Bemer et al., 2009; Vealey & Hyde 2008; Balzhiser et al., 2015) and discussions of UX or usability labs being positioned as a way to enhance learning opportunities and support revenue generation (Howard, 2015).

There are helpful examples of programs that have shifted from a TPC focus to a UX focus. For example, Scott Kowalewski and Bill Williamson (2016) trace their assessment process and the program evolution to be more specifically focused on usability studies and UX. Tammy Rice-Bailey and Nadya Shalamova (2016) detail the shift from TC to UX at the Milwaukee School of Engineering. Rice-Bailey and Shalamova's impetus for shifting the program was due to declining enrollments and the threat of pending dissolution. A component of shifting from TC to UX was a deep connection to and engagement with local industry partners, which continues to be a key component of their program (Shalamova et al., 2021). Similarly, Mark Zachry and Jan Spyridakis (2016) discuss the transition of the Technical Communication program at the University of Washington-Seattle to the Department of Human Centered Design & Engineering within a broader conversation of the growing interest in human-centered design. As they detail, the shift was the result of the shift of faculty research interests coupled with institutional pressures to have a department name more in line with engineering due to their position

within a College of Engineering. The name change shift was intentional and informed by collaboration with internal and external stakeholders, including students, alumni, and advisory board members, in addition to industry demands and looking at competitor programs. These examples at Milwaukee and Seattle are notable for being situated in engineering schools and both appear to be thriving and successful after these changes.

Some scholars have taken up the different, disparate, and disconnected aspects of UX pedagogy to document the complexities of their own UX teaching, offering bespoke approaches to those issues, and requesting more systematic scholarship for best practices. For example, when sharing his redesign of a TC service course, Jason Tham (2021) frequently emphasized his need for an expanded model of technical communication pedagogy to account for "highly complex experience ecosystems." After interviewing industry practitioners, including some who self-identify as UX analysts, Tham expanded Stanford d.school's design thinking process, (a common model in UX practice) into a pedagogical framework that placed assignments within its sequence. As a result, Tham was able to redesign his curricula to guide students through more complex experiences rather than traditional task-based scenarios:

> A notable distinction between the initial phase in the design challenge compared to conventional academic research projects (which often begin with the researcher's point of view on particular problems) was the emphasis on empathy which led to user-centeredness in problem solving. It encouraged students to move from a designer/researcher centric approach to problems to a user-focused practice (p. 137).

When doing research about TPC practices, we wanted to go beyond solely just understanding course titles and instructor demographics. As Lisa Melonçon stated "what the field truly needs to understand is how these individuals do their work, the impacts our institutional structures have on their work lives, and how such factors impact student learning" (2018, p. 215). Our study is part of a larger effort to better understand and improve research related to UX pedagogy (Rose & Turner 2020, Rose & Turner 2021) that can both inform outcomes for programs and instructors alike.

Methods

The following section provides details on the methods for the study. The study design was reviewed, approved, and determined to be

exempt by both of our institutional review boards (Santa Clara University, Protocol ID #20-02-1429, Exempt; University of Washington Tacoma, #STUDY00009696, Exempt). The goal of the study was to gather data from multiple instructors across multiple institutions for the purpose of improving programs at the course and program level, including instruction and outcomes.

Project Origins and Reflections on Positionality

Good qualitative research includes transparency, self-reflexivity, and, when appropriate, disclosure about positionality (Liang et al., 2021). This project was conceived of when the two authors attended the 2019 ACM SIGDOC conference and ended up in a deep conversation about their teaching practices related to UX. We had a lot in common: industry experience in UX, tenure-track and tenured positions at mid-size universities, and developing new (and refashioning old) curriculum around UX. This initial conversation led to a shared belief that UX was clearly within the purview of TPC, but conversations about teaching UX happened informally and infrequently. As a result, we wrote a proposal for a CPTSC research grant, which was funded, and proposed a workshop at the 2020 ACM SIGDOC conference. The workshop was well attended and eye-opening. From that experience, we concluded that there was both a large interest and pressing need to support others in TPC to enhance their UX knowledge and pedagogical practice. We want to be transparent about our own paths to UX, which directly impacts our stance for this research: TPC has a clear historical connection to UX practice.

As a professor and internship director at a small liberal arts college (SLAC) in the heart of Silicon Valley, Heather has identified local realities within the Bay Area and developed curricula to support TPC students interested in UX internships and careers. For more than a decade, Heather has worked as a UX consultant and visual designer with community organizations, for-profit businesses in tech and finance sectors, stand-alone research centers, academic and/or university presses, national associations, college offices, and individual entrepreneurs.

Emma is a professor who has co-developed several programs on technical communication and design and has been teaching and practicing UX for over two decades. Her background working in the UX industry in a tech hub on the West coast brings with an embodied knowledge of practice. She focuses on inclusive design practices that welcome students from a variety of disciplines and is particularly interested in encouraging students from humanities and other non-

STEM disciplines to explore UX.

Sampling and Recruitment

We purposefully sampled participants who were associated with the field of TPC and expressed interest or expertise in teaching UX. Our sampling was intended to gather a broad range of instructors from different TPC programs in higher education so we could better understand how they teach UX in the courses and programs.

Screening Questionnaire

To understand how instructors from TPC approach teaching UX, we distributed a Qualtrics questionnaire. The goals of the questionnaire were to: gather information on how instructors define UX; collect artifacts for analysis; recruit and screen participants for in-depth artifact-based interviews; and to understand how instructors rate their proficiency and expertise in teaching UX.

Our goal was to recruit participants who identified as being part of the field of TPC and had an interest or expertise in teaching UX. We recruited participants in several ways. First, we directly invited individuals in the field of TPC who had a record of engaging in UX topics. We developed a list of names gathered from people who had published or participated in conferences in the field, including the last previous two years (2018-2020) of ACM SIGDOC, IEEE ProComm, the 2017 Sites of Translation User Experience Research Center Symposium, the Louisiana Tech Usability Studies Symposium, and from 1998-2018 of ATTW. From the list of attendees at these conferences, we identified individuals who used the following keywords in their title or abstract: user experience, usability, user-centered design, content strategy, and other topics closely related to UX. This initial list generated 200 names. We then searched for and located their emails via public records or websites and were able to identify 120 active emails. We directly emailed this list to invite them to complete the questionnaire. Second, we also distributed the questionnaire to listservs of three primary professional organizations in TPC (CPTSC, ATTW, ACM SIGDOC); these organizations were chosen because they are considered part of TPC and include individuals who may be interested in UX. We also posted to several Facebook groups, including "Technical Communication & Rhetoric Scholars" and "SIGDOC forum" in addition to distributing the questionnaire via Twitter with the hashtag #UX. The recruiting text for social media read "Do you teach #UX? We are looking for instructors from the field of Technical and Professional Communication to share their teaching strategies. Complete this 15 min questionnaire and

share your strategies!" We also posted the link to the questionnaire on our project website. Based on these recruitment efforts, 80 respondents completed the questionnaire and out of these 33 shared artifacts and 32 indicated interest in participating in a follow-up interview.

Interviews

We reached out to all 32 questionnaire respondents who expressed interest in participating in an interview. Out of these, 22 instructors responded and were scheduled for a 1 hour semi-structured, artifact-based interview via Zoom. Participants were asked to share and discuss curricular documents (broadly defined) that represent how they approach teaching UX. Out of 22 interviews, both authors conducted two interviews together and 10 each on their own. Each participant was asked to respond to a series of questions asking about their background, teaching practice, program, to share and explain their artifact, and to reflect on their practice. Participants were given a $25 gift card as an honorarium for participating in the study. Each interview was automatically transcribed via Zoom transcription. After automated transcription, research assistants corrected machine errors into quasi-verbatim transcripts. Refer to Appendix A for the list of interview questions.

While we did not collect demographic information about our participants, all 22 instructors who participated in the interviews taught at four-year institutions or extension programs of four-year institutions. In terms of rank, participants included graduate instructors, teaching stream (non-tenure track), and tenure track/tenured. Out of the 22 participants in the study, 20 were in North America, 1 was in South America, and 1 in the Middle East.

Artifact Corpus

During the screening questionnaire and the interviews, participants were asked to share curricular artifacts (broadly defined) that represent how they approach teaching UX. Participants shared a total of 53 artifacts, including syllabi and course schedules, assignment sheets/project guidelines, student work, in-class activities, lecture slides, program descriptions, lists of major courses, LMS modules, tool or technology demos, templates, and online teaching portfolios. Some participants shared multiple artifacts during the interview and in the questionnaire. Each artifact was categorized by type (syllabus, assignment, lecture notes) and associated with an interview or questionnaire participant.

Data Analysis

To broadly understand how TPC instructors approach teaching UX, our data analysis included multiple methods to triangulate the data sources. The sources for this study included a subset of the transcriptions of interviews, qualitative questionnaire responses, and exploratory content analysis of artifact corpus (Chong, 2018). For this study, we considered the interview data to be the primary source. We also analyzed the participants responses to the questionnaire and their artifacts to provide context and depth in addition to their self-report teaching practices. Because the purpose of our study is to understand how TPC instructors approach UX, our analysis focused less on the rhetorical genre features of the artifacts and more of the presence of concepts or themes and their frequency. When analyzed in this way, artifacts become "pattern-amplifying devices" that when viewed in a corpus may reveal "incomplete but nevertheless vital glimpses of an interconnected disciplinary domain focused on relationships that define and cohere widespread scholarly activity" (Mueller, 2017, p. xii). Because not every participant submitted a syllabus as their artifact, we analyzed the interview transcripts in which every participant was asked about their activities, assignments, and readings. For the qualitative questionnaire, we focused specifically on how participants defined UX for this analysis to inform our research questions. As we reviewed the data from the study, we first developed a series of questions, which are listed in Table 1. We then used the questions to drive the data analysis across of all three sources to triangulate the results.

Table 1. Data analysis questions and source data

Question	Questionnaire	Artifact corpus	Interviews
How do instructors describe their UX teaching expertise and how is UX integrated into their programs?	X		X
How do instructors define UX?	X	X	

How are classes and/or programs structured?		X	X
What activities and assignments do students do?	X		X
What textbooks or readings are assigned?			X

Immediately following each interview, the primary interviewer wrote a reflective memo to capture highlights and emerging themes from the interview. Memos have a variety of functions in qualitative research, in our study we used memos analytically and to better understand what was going on in the data. According to Melanie Birks et al. (2008), analytical memos are used to identify similarities and differences, explore relationships, and to generate "theoretical assertions that are grounded in raw data, yet possess the quality of conceptual abstraction" (p. 71).

After all of the interviews were conducted, other members of the research team (the other interviewer and two research assistants) read each transcript and created their own reflective memo. These memos were used to help provide a summary of the interview, create theoretical assertions, and to provide a space for researchers to notice and comment on differences within and across the interviews. In addition to memos, the research team read and re-read the interview transcripts and engaged in multiple rounds of generative coding and categorizing for each question, comparing and revising categories and generating a map of the categories that captured variables to organize the data for key characteristics and pedagogical choices. We did not pre-determine the categories because the nature of this study is not to test a predetermined hypothesis. Approaching the analysis through a constructivist paradigm, we chose to collaboratively code and negotiate differences in the coding through discussion, rather than deploy inter-rater reliability. The codes were used to identify themes which were also discussed and negotiated. We augmented the themes with qualitative quotes that provide context and rationale for the pedagogical choices instructors make. Quotes have been lightly edited for readability.

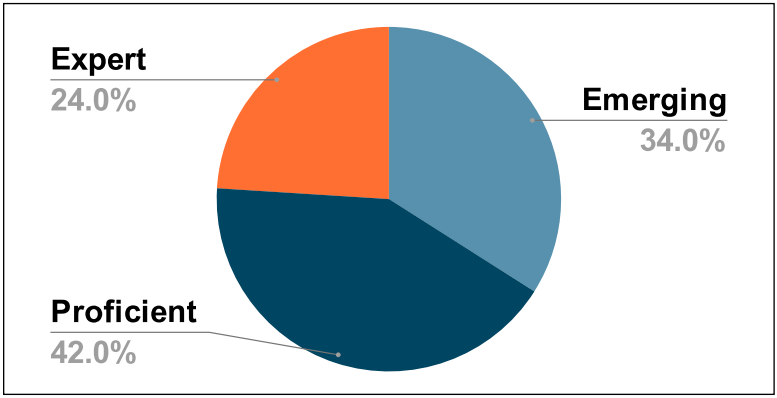
Results

In the following section, we share the results of our study organized into four main categories. The first, Describing UX Expertise and Program Implementation, explores how instructors defined their own UX expertise and how it is implemented in their programs, based on interview and questionnaire data. The second, Describing and Defining UX, presents data from interviews, the questionnaire, and artifacts, showing how instructors defined UX. The third, Course and Program Logistics, provides an overview of the salient characteristics of TPC courses with UX components based on interview data. The fourth, Assignments and Activities, describes what students do in class based on interviews and content analysis of syllabi and assignments. The fifth category, Texts and Materials, reports on what texts instructors assigned to students based on interview data and syllabi analysis.

Describing UX Expertise and Program Implementation

We were interested to understand how TPC instructors categorized their own practice in teaching UX and how they saw it represented in their programs. In the questionnaire, we asked instructors to describe their experience teaching UX by choosing one of three options: emerging—am interested in or just starting to teach UX and feel like I have much to learn; proficient—am teaching UX related topics and feel comfortable in my teaching; or expert—am teaching and iterating multiple UX topics or courses and feel highly confident in my teaching. The results (refer to Figure 1) show out of 64 responses, 17 (24%) rated themselves expert, 21 rated themselves emerging (34%), and 26 rated themselves proficient (42%).

Figure 1. Self-described expertise in UX pedagogy.



We also asked interview participants to reflect on what else they would like to learn about UX pedagogy and their responses provided a range of ways instructors would like to increase their existing knowledge and expertise when it comes to teaching UX. Several instructors mentioned they had limited background or training in UX. Others mentioned wanting to keep up with industry trends. Bringing these two ideas together, participants mentioned they did not feel like they had the embodied understanding of the practice of UX and hoped to find ways to supplement their perceived lack of knowledge.

P22 reflected on their lack of experience with specific UX methods:

> I know that I can talk about them in this scholarly way, but I'd like to do, like, the embodied experience of working with those methods and I think that'll be just like I try to tell students that when you have the embodied experience of giving a poster presentation you'll understand how to do it, I think if I get that kind of experience then I'll be able to supply it to my students.

P6 talked about how the lack of experience led to negative feelings related to their qualifications to teach UX:

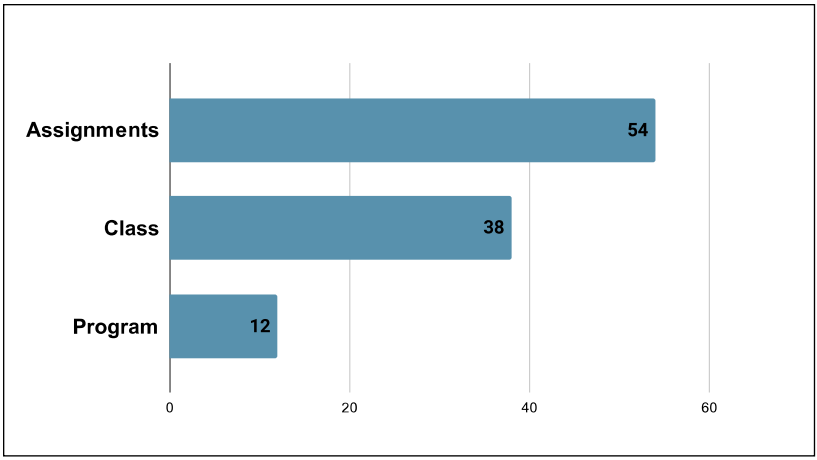
> I never took a class and … I haven't worked as a professional. I have no idea really like I'm not qualified to teach this so there's that, but then there's also like there's also both blessing and curse of how diffuse UX is our campus.

Other participants mentioned that they planned to or were in the process of taking online courses or other supplemental training to learn about UX. Still other participants stated that they wanted more community around UX pedagogy to discuss their practices and also access to share and use UX resources like lesson plans, assignments, and syllabi.

In addition to asking participants about their UX pedagogy expertise, we also asked them to assess how UX was integrated into their programs. In the questionnaire, we gave them three options and asked them to check all that apply. The options were: 1) teach elements of UX within specific assignments, which we called *assignments*; 2) teach a class dedicated to the end to end process of UX, which we called *class*; 3) teach in a program where UX is scaffolded across the entire program, which we called *program*. Of the 82 participants who completed the questionnaire, 62 answered this question. Figures 2, 3, and 4 below show how participants answered this question. When looking at all the responses to the check all that apply question (Figure 2), we found the most common answer was

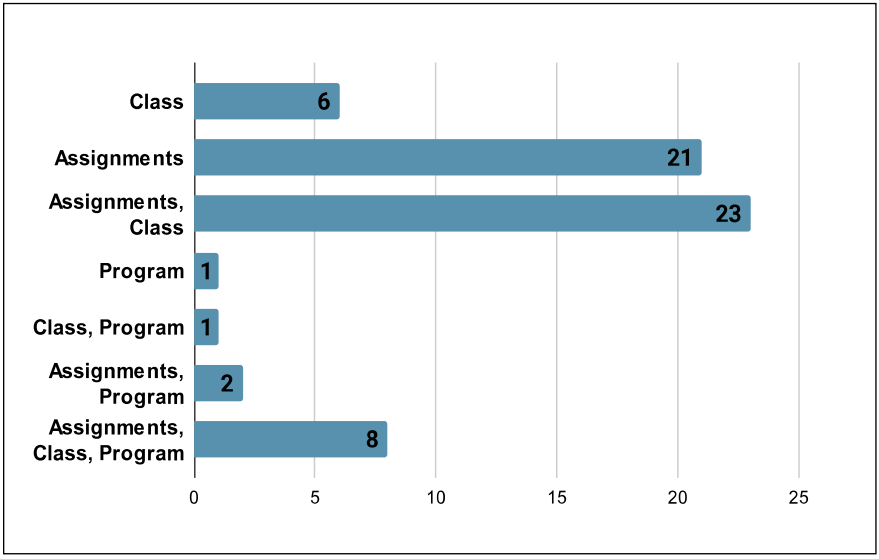
assignments with 54 selections, followed by class with 38 selections, and finally program with 12 selections.

Figure 2. UX teaching present in assignments, classes, and programs, in aggregate.



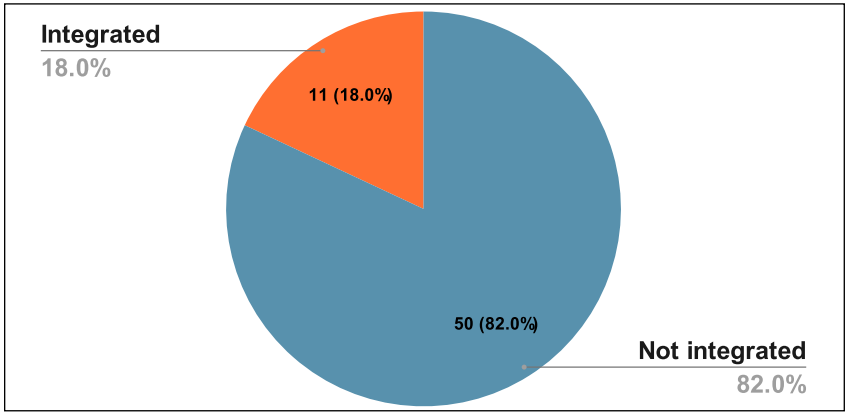
However, when looking at the individual responses to this question (Figure 3), we found most participants integrate UX either into an assignment (n=21), a class (n=6), or both (n=23). Having UX integrated fully into a program was chosen less frequently; participants selected program (n=1), class and program (n=1), assignments and program (n=2), or it is fully integrated into assignments, classes, program (n=8).

Figure 3. UX teaching present in assignments, classes, and programs, by response.



When looking closer at responses, we wanted to understand how many responses indicated that UX was integrated into the program (refer to Figure 4). We categorized the responses into two broad categories: responses that focus solely on UX at the assignment or class level were labeled not integrated (n=50, 82%), and responses that did include any indication of program integration were labeled as integrated (n=11, 18%).

Figure 4. UX program integration



This data suggests that most instructors who completed the questionnaire taught in programs that did not fully integrate UX into course offerings.

Describing and Defining UX for Students in TPC courses

When recruiting participants and designing an intake questionnaire, we developed a working definition of UX to be able to communicate what types of pedagogical activities and instructors we were investigating. As mentioned earlier, we used a definition based on Buley (2013) that includes three components: UX is a professional practice, a process, and an outcome. We provided a version of this definition in the preamble to the questionnaire to work as a screening criteria. It read:

> For the purpose of this project, we subscribe to Buley's definition (2013) of user experience: a professional practice: a set of methods and techniques for researching what users want and need, and to design products and services for them, an outcome: the overall effect created by the interactions and perceptions that someone has when using a product or service, interdisciplinary: includes visual design, content strategy, writing, business analysis,

product management, project management, analytics, and engineering. Given this definition and your understanding of UX, do you teach aspects of user experience in any of your courses?

Out of the 82 participants who completed the questionnaire, 73 (89%) responded yes, 2 (2%) responded no, and 7 (9%) did not respond. However, we were also interested in how instructors defined UX for their students.

How instructors define UX for their students. We asked participants who completed the questionnaire to respond to the question "How do you define and describe UX for your students?" in an open-ended text box and 54 (68%) participants responded. Their responses were compiled and categorized across three qualitative codes: outcome, process, and field (refer to Table 2). Responses that described the overall effect created by the interactions and perceptions that people have when using a product or service were coded as *outcome* (n=34/54, 63%). Responses that described an iterative and/or flexible set of methods and techniques for researching what users want and need to design products, services, and experiences were coded as *process* (n=35/54, 65%). Responses that described interdisciplinary professional practices and/or fields informed by a variety of disciplines were coded as *field* (n=10/54, 19%). A small number of responses (n=3/54, 5%) did not describe or define UX and were coded *N/A*. These results show references to processes and/or outcomes are present in a near equal majority of UX definitions within our sample, while references to disciplines or fields are present, but less frequent.

Table 2. Codes and example descriptions of UX

Code	Description of code	Example response	%
Outcome	References the overall effect created by the interactions and perceptions that someone has when using a product or service.	"The positive, negative and/or neutral experience(s) of interacting with a product. These factors are subjective and often emotional, psychological, and, sometimes, tactical. Positive user experiences are useful, usable and desirable."	34/54 (63%)

Process	References an iterative and/or flexible set of methods and techniques for researching what users want and need in order to design products, services, and experiences.	"Data-driven, inclusive research & design process that implements and adapts methods for connecting stakeholders, designers, and designs."	35/54 (65%)
Field	References interdisciplinary professional practice and field informed by a variety of disciplines.	"I am careful to differentiate between usability and UX when talking about user experience. Just because something is usable doesn't mean it is a positive user experience. I have also touched on design thinking and Experience Architecture when talking about UX."	10/54 (19%)
N/a	N/a	"Honestly, I am not sure that I do. We discuss (and practice, when possible) usability testing in an introductory tech writing course, but that is it."	3/54 (5%)

However, when analyzing the questionnaire responses, we found that participants would also describe multiple aspects of UX in relation to each other. Specifically, after calculating the percentage of our codes across the questionnaire subset, coded responses were analyzed to determine what parts of the definition co-occur.

A large segment of our sample (n=27/54) described UX in a singular manner: as an outcome only (n=14) or as a process only (n=13). An equally large segment of our sample (n=27/54) described UX in multiple, co-occurring ways: as an outcome and a process (n=14), as a process and an interdisciplinary field (2), or as an outcome and an interdisciplinary field (2). Only a few responses (n=6) described UX as an outcome, process, and field. These results show definitions within our sample rarely reference an interdisciplinary field(s) of study when describing UX to students. Most frequently, definitions within our sample reference UX as an outcome or design process separately, or reference together the overall effects of product use and iterative

methods of design when describing UX to students (refer to Table 3 below). While a few responses contain all three codes—the outcomes, processes, and fields of UX—these co-occurrences are less frequent.

Table 3. Co-occurrence example responses

Code	Example response	%
Outcome and process	"We spend a long time defining UX, but if a nutshell is necessary: UX is the degree to which humans enjoy interacting with products. Designers must learn about human needs and wants in relation to an artifact, iteratively produce those artifacts, and measure the ability of artifacts to meet human wants and needs."	14/54 (26%)
Process and field	"I teach UX from a user research and usability testing perspective. So, I teach UX research methods rather than design (others do that)."	2/54 (4%)
Outcome and field	"I use NNGs definition: 'User experience' encompasses all aspects of the end-user's interaction with the company, its services, and its products. The first requirement for an exemplary user experience is to meet the exact needs of the customer, without fuss or bother. Next comes simplicity and elegance that produce products that are a joy to own, a joy to use. True user experience goes far beyond giving customers what they say they want or provide checklist features. To achieve high-quality user experience in a company's offerings there must be a seamless merging of the services of multiple disciplines, including engineering, marketing, graphical and industrial design, and interface design."	2/54 (4%)
Outcome, process, and field	"I use Roto et al.'s (2011) definition: 'The field of UX deals with studying, designing for and evaluating the experiences that people have through the use of (or encounter with) a system. This use takes place in a specific context, which has an impact on, or contributes to, the UX. UX can be viewed from different perspectives: it can be seen as a phenomenon, as a field of study, or as a practice. To understand this distinction, consider the following analogy: health as a phenomenon, medicine as a field of study, and a doctor's work as a practice.'"	6/54 (11%)

How instructors use terms related to UX in their teaching artifacts. In addition to the self-described definitions that respondents provided in the questionnaire, we also conducted a computer assisted corpus search through all the submitted teaching artifacts (n=53) for the terms *user experience* or *UX* to triangulate how frequently these terms occur. Because a computer assisted corpus search does not use Boolean logic, we needed to conduct a separate search for the exact terms. *User experience* was present in 25/53 artifacts and UX was present in 21/52 artifacts.

Some participants seemed to conflate the term *UX* and *usability testing* in their questionnaire responses and their interviews. Although we distinguish UX from usability testing, we were curious to find out if our participants also used UX and usability testing interchangeably in their artifacts. As a result, we also searched for the term *usability. Usability* was present in 31/53 artifacts. *Usability* and *user experience* co-occurred in 18/53 artifacts. *Usability*, without the term *user experience*, was in 13/53 artifacts. *User experience*, without the term *usability*, was found in 7/53 artifacts. By conducting this analysis, we were able to determine the explicit presence of *UX* within our sample. The teaching artifact corpus contained 49,628 total word tokens. The results are shown in Table 4.

In the corpus analysis, we identified the most common words as *class* (n=651), *course* (n=635), *students* (n=474), *work* (n=459), and *design* (n=403). The key words of interest to this study related to UX, (e.g., *usability* [n=273]*, user experience* [n=86]*, UX* [n=358]) occur less frequently than the most common words. To evaluate the drastic difference in frequency between terms *user experience* (n=86) and its acronym *UX* (n=358), we looked at the context of use in individual artifacts within the corpus and found that *UX* is used in titles of recommended or required readings, which we discuss at length in a later section.

Table 4. UX-related keyword search in the teaching artifact corpus.

Keywords	Word Frequency	Appears in # of artifacts
class[a]	651	34/53
course[a]	635	34/53
students[a]	474	27/53
work[a]	459	39/53
design[a]	403	38/53

ux	358	21/53
usability	273	31/53
user experience	86	21/53

[a]These terms are the most frequent or common in the corpus.

Course and Program Logistics

The second research question asks what structures or constraints influence UX pedagogical choices. This section presents an overview of the salient characteristics of TPC courses with UX components based on data from 22 semi-structured artifact-based interviews with TPC instructors who self-identify as teaching UX.

After presenting an artifact that represents their approach to teaching UX, interview participants were asked follow-up questions about the program and course context of their artifact. The types of programs where these courses are taught are mostly discipline-specific departments including traditional English departments (n=14), a communication department (n=1) and a stand-alone writing department (n=1). Other participants described their programs as interdisciplinary college-level units (n=5) and as an extension program geared toward working professionals (n=1). For participants, programmatic locations presented some benefits such as cross-college or institutional collaboration. P3 reflected on the ways programs collaborate to supplement different aspects of UX content:

> The program allows people to take some elective courses that are coming out of [redacted], a different department, the art department there's courses, you can take specifically -- their electives -- on user interface design and then some tools-based courses in the Adobe suite.

However, many participants described tensions related to their location in a program, including disciplinary siloing and being housed within a traditional English Department. P16 reflects on institutional realities of UX as a multidisciplinary field: "And then there's the cross-institutional tensions regarding who owns it [UX] and where it should be."

P15 discusses the newness of UX concepts for English majors:

> So, concept of a user versus a read that's when I have to actually spend time or I took for granted. But it's only really since I've been at [university] that I have so many literature or traditional English majors. They have not though about users in any way...[In the] Writing for the Web [course] creative writers honestly come in and many of them think

> we're going to write blogs and that'll be the semester. So they're familiar with the genre of the web, but in terms of the larger picture of how the Web works, how you compose content, and how you evaluate content, that is all new.

Results show courses were primarily offered at the undergraduate level (n=13), one of which was a capstone course. There were also some at the graduate level (n=3), and several were cross listed across graduate and undergraduate (n=4). Of the 22 courses, 12 were required, 6 were electives and for the 4 remaining courses, it was unclear.

A majority of the courses (n=12) described by our participants were stand-alone UX courses, while advanced technical communication courses (n=4), service courses (n=5), and general education courses (n=2) were also present. Although two participants mentioned a sequence of stand-alone UX courses, most participants discussed fitting UX into one class and even one assignment. P15 discusses the amount of preparation needed to guide students: "I feel like there's so much scaffolding that goes into UX to do it well, that I am not able to do that when it's like a one-shot course."

Class sizes tended to be small (25 or fewer students) with one outlier of a 100-student course that fulfills a general education requirement for undergraduates. The smallest class (10 students) was a graduate level course. The average class size was 24.9, with a standard deviation of 23.25.

TPC classes within our sample varied widely in title and focus. Our participants described the titles or subjects of their classes (some participants referenced multiple courses within an interview) as Applied Design (n=1), Experience Architecture (n=1), Human Computer Interaction (n=1), Innovation and Impact (n=1), Introduction to Technical Writing and Professional Communication (n=5), Project Management (n=1), Rhetoric as User Experience Design (n=1), Research Methods (n=1), Usability and/or Usability Testing (n=2), User-Centered Design (n=3), User Experience (n=2), User Experience Research (n=2), User Experience Writing (n=1), and Writing for the Web (n=1).

Assignments and Activities

In this section, we provide an overview of what students are asked to do as part of their class. This is organized into four sections. The first two sections, Research and Defining and Designing, were derived from interview data (n=22). The next category, Genres/Reports, were

identified through assignment and syllabi analysis (n=53). The last category, Projects, were identified through interview data (n=22). The final category, Texts, describes what textbooks and materials are assigned and are derived from both syllabi analysis and interview data.

Research. We categorized research activities into two subcategories (refer to Table 5). The first subcategory, understanding the audience, was defined as activities that help students gain a better understanding of the audience they are designing for, their needs, and any requirements that need to be accounted for in the design. These activities were identified in 19/22 or 86% of instructor interviews. Several instructors mentioned that students do one or more activities and several mentioned that students are given a choice of which activity to engage in based on the project. The most common type of activity in this category is user interviews (n=12), followed by surveys (n=5), and heuristic evaluations (n=3). The second subcategory is Evaluating the Design, and these activities were identified in 17/22 or 77% of instructor interviews. The most common type of activity in this category is usability testing (n=10) and then critique or feedback from an expert, instructor, or peer. Taken together, these two categories show the range of diverse activities that students engage in during UX-focused courses in TPC.

Table 5. Types of research activities

Subcategory	**Understanding audience**	**Evaluating design**
Occurrence in instructors' interviews	n=19/22, 86%	n=17/22, 77%
Specific activities mentioned	User interviews - 12 Surveys - 5 Heuristic evaluations - 3 Competitor analysis - 3 Rhetorical analysis - 2 Stakeholder interviews - 1 Web analytics - 1 Content analysis - 1 User observation - 1 Strengths, Weakness, Opportunities, Threats (SWOT) - 1 Return on investment (ROI) - 1 Online user research - 1 Diary study - 1 Archival research - 1	Usability testing - 10 Critique or feedback (expert, instructor, peer) - 3 Type not specified - 2 Client feedback - 1 Surveys - 1

Defining and designing. In this section, we present activities related to defining audience and designing (refer to Table 6). The first subcategory is defining audience and requirements, which refers to activities where students are articulating their understanding of who they are designing for and what the design needs to do. These activities were identified in 15/22 interviews (79%). The most common activity is personas (n=11), followed by research reports (n=4), and then specifications and scoping documents (n=3), and scenarios or user stories (n=3). The second subcategory is designing, which includes activities related to creating content and designing information. In this subcategory, the most common activities are prototyping (n=9), wireframes (n=4), and drafting content (n=2).

Table 6. Activities related to defining audience and designing

Category	**Defining audience**	**Designing**
Occurrence in instructors' interviews	n=15/22, 79%	n=18/22, 82%
Specific activities mentioned	Personas - 11 Research report - 4 Specifications or scoping document - 3 Scenarios or user stories - 3 Journey maps - 2 Content audit - 1	Prototype - 9 Wireframe - 4 Drafting content - 2 Design rationales - 1 Storyboard - 1

Assignments and projects. During the interview we asked instructors to explain the assignments or projects that included elements of UX. There were wide variations in the kinds of projects participants designed within their courses such as creating new products, designing and testing graphical user interfaces (GUIs), drafting and testing instructions and/or procedures, redesigning existing products, and drafting UX writing or microcopy. The subject matter of such assignments also varied widely including content related to anti-child trafficking, information technology services, injury prevention, municipal events, scientific outreach programs, sexual

misconduct, sustainability, and many more student-selected subjects.

Across the 22 instructors, we categorized the types of projects in several ways.

- Client- or community-based project: a project that focused on working with a client or partner (n=8). Out of these projects, 4 were partnerships with on campus units and 4 were with off-campus organizations.
- Real-world projects: a project that focused on designing for a realistic situation, genre, circumstance, or audience (n=11).
- Hypothetical projects: a project that engages in an imagined circumstance that was designed primarily as an opportunity for learning (n=10).
- Student choice of topic: students choose the topic or idea for the focus on the project (n=12).
- Instructor-directed topic: instructors choose or direct the student to a specific topic (n=10).

A clear differentiation in the type of projects students were asked to do were the ones that engaged with a client on a real-world project. For those instructors who chose this type of project, the client-based aspect was key to their pedagogy. As one participant (P22) stated on the important of these types of projects:

> I wanted my students to experience that vagueness...all those things that are unknown and uncontrollable. And I wanted them to experience working with the user that they don't know necessarily. I haven't vetted and I haven't brought in, and I don't have all the controls around the scenario, and I wanted my students to be able to engage with that. ...still like in a low stakes way and still being very much guided through right, rather than just throwing them in there, so I was trying to find that balance between giving them an actual experience with users that they didn't know and still keeping it guided learning process.

We also saw instructors choose individual projects versus team projects. Out of 22 instructors:

- Individual projects - n=5
- Team projects - n=15 instructors currently used team projects prior to the disruption of the pandemic (3 instructors switched from team to individual projects during COVID)
- Student choice - n=1 instructor provided students with the option of team or individual
- Unclear - n=1

In addition to the types of projects, several instructors talked about

the importance of learning a process and working in collaboration with others as more important than the final product. As one participant (P1) stated:

> Because I have taught this many times I also really firmly believe that the process is just as important as the product. So if they create a really great product, but they've thrown everyone under the bus along the way, that's not acceptable for me in this class. I'd rather you have this really great process and to bring people along there together, but then maybe ultimately the product that came out of it was not as great as it could be, than if you maybe had more time or something.

Further, several mentions the role and importance of iteration and being able to have students experience that process. As one participant (P15) said:

> Different than even the writing process, which is like multiple drafts. They might know that but it [UX] is such an iterative process that they're not used to thinking of projects that take more time than 'Oh I have a paper due I'll write it the night before.' So I spend a lot of time...I don't know if it's project management or just orienting them to a different way in which the deliverables are created.

Texts and Materials

We asked interview participants what readings, texts, or learning materials they assign in their classes. While many assign textbooks, they almost all mentioned also assigning materials and sources from blogs, videos, and academic articles. Similarly to variation found in course titles, there is considerable variation in the texts that instructors assign (refer to Table 7, next page). All titles appearing were mentioned by one participant, with the exception of two titles (Norman, 2013; Barnum, 2010) which were each mentioned by three participants, and one title (Buley, 2012) which was mentioned twice.

Table 7. Book titles assigned by instructors, organized by topic

Topic	Title
Content and writing	Metts, M. & Welfie, A. (2020) *Writing is Designing: Words and the User Experience.* New York: Rosenfeld Media. Podmajersky, T. (2019) *Strategic Writing for UX: Drive Engagement, Conversation, and Retention with Every Word*. Boston: O'Reilly Media. Redish, J. (2012). *Letting Go of the Words: Writing Web Content that Works*. Netherlands: Elsevier Science. Wolfe, J. (2010). *Team Writing: A Guide to Working in Groups*. United States: Bedford/St. Martin's.
Project management	Watt, A. (2014) *Project Management.* BCcampus. https://opentextbc.ca/projectmanagement/
Design	Garrett, J. J. (2010). *Elements of User Experience: The User-Centered Design for the Web and Beyond.* Berkeley, CA: New Riders. Johnson, R. R. (1998). *User-centered technology: A rhetorical theory for computers and other mundane artifacts.* United States: State University of New York Press. Norman, D. (2013). *The Design of Everyday Things: Revised and Expanded Edition*. United States: Basic Books. Williams, R. (2015). *The Non-designer's Design Book: Design and Typographic Principles for the Visual Novice.* United Kingdom: Peachpit Press.
Research	Barnum, C. M. (2010). *Usability Testing Essentials: Ready, Set...Test!.* Netherlands: Elsevier Science. Portigal, S. (2013). *Interviewing Users: How to Uncover Compelling Insights.* United States: Rosenfeld Media.

UX Process	Field Guide for Equity Centered Community Design-Creative Reaction Lab. https://www.creativereactionlab.com/shop/p/field-guide-equity-centered-community-design Buley, L. (2013). *The User Experience Team of One: A Research and Design Survival Guide.* United States: Rosenfeld Media. Mara, A. (2020). *UX on the Go: A Flexible Guide to User Experience Design.* United Kingdom: Routledge. Still, B., & Crane, K. (2017). *Fundamentals of User-Centered Design: A Practical Approach.* United States: CRC Press.
Technical Communication	Lannon, J. and Gurak, L. (2020). *Technical Communication* (15th Edition). New York: Pearson. Johnson-Sheehan, R. (2017). *Technical Communication Strategies for Today* (3rd Edition). New York: Pearson

These different texts can be categorized into academic or industry texts, with instructors assigning more industry texts than academic texts (refer to Table 8).

Table 8. Types of texts assigned

Category	Number	Text
UX industry texts/ how-to	10	Barnum (2010), Buley (2013), Garrett (2010), Field Guide for ECCD, Metts & Welfie (2020), Norman (2013), Podmajersky (2019), Portigal (2013), Redish (2012), Williams (2015),
Textbooks or academic text	7	Lannon & Gurak (2020), Johnson (1998), Johnson-Sheehan (2017), Mara (2020), Still & Crane (2017), Wolfe, (2010), Watt (2014)

Limitations

There are several limitations to this study. First, all participants self-selected for the study, so while the data helps us understand the context and practice of instructors, it does not substitute for

a programmatic, field-wide study. Second, TPC and UX are global professions and fields, but our sample primarily represented views of TPC instructors in the United States. Although some of our participants (n=2) spoke about TPC courses outside of the United States, most (n=20) discussed courses within the US. Third, the interviews were conducted in February-April of 2021 where most instructors were grappling with changes to their typical practice due to COVID 19 and the move to emergency remote teaching. This complicated our data analysis in some cases, because instructors provided insights about what they did "before COVID" and what changes were due to the demands of the pandemic considerations. The focus of this article is not on the issues related to COVID's impact on teaching. However, we acknowledge that the shift to online teaching may have led to instructors being in a heightened state of awareness of their pedagogical choices due to the pandemic. Fourth, analysis of teaching artifacts through keyword searches only shows presence or absence of explicit terms and does not account for implicit or contextual presence.

Discussion

The purpose of this research is to investigate the pedagogical approaches and practices of TPC instructors who teach UX in order to document a fuller picture of curricular practice. By examining questionnaire responses, interview transcripts, and teaching artifacts we sketch a picture of how TPC instructors approach teaching UX. Data from this study can improve program outcomes, make arguments for faculty desiring additional training, and help hire qualified faculty to teach UX and TPC courses, etc. Usability and UX have changed significantly in recent years. There is a lot to know, and programs need to think about both how to better incorporate UX, and also how to build and maintain expertise. These are programmatic concerns that our study seeks to address. In this section, we return to our research questions and discuss how the data presented in the findings helped us learn more about UX pedagogy by TPC instructors.

1. What do TPC teachers do when they say they teach UX? What are their definitions, approaches, and activities?
2. What are the structures or constraints that influence UX pedagogical choices?

Variety and Flexibility of Teaching Practices

There is a broad range of strategies and approaches for teaching UX in TPC. These strategies are both enabled and constrained by programmatic commitments, individual motivations, and local

considerations. Given these factors, TPC instructors make a wide range of choices of how they incorporate UX into their courses, which is evident in how they define UX and implement it in their class through texts, assignments, and activities. Our first research question asks: What do TPC teachers do when they say they teach UX? What are their definitions, approaches, and activities? The findings provide a great deal of information to answer that question. Here we step back to discuss the implications of the variety and flexibility in the practice of teaching UX by instructors who align themselves with the field of TPC.

Definitions vary and point to a nascent field and practice. While the vast majority of participants to the questionnaire affirm they teach UX according to our definition, how they define UX for students varies. Some draw from specific definitions from the literature, others include components of a process, practice, or field, and yet others include a more narrow definition that touches on one aspect of UX. However, this phenomenon is not unique to instructors in UX. The discussion of what UX is and how to define it is not new.

Buley observes that defining UX is famously messy. As she states, "Talking about user experience (UX) can be a bit like looking at an inkblot test: whatever matters the most to you ends up being what you see" (2013 p. 4). This can be attributed to UX's relative youth as a field and practice, but it goes deeper. Law et al. (2009) name three factors that makes a universal definition of UX challenging. First, UX is associated with a broad range of variables that are included or excluded depending on the context and person doing the defining. Second, the unit of analysis within UX is malleable. Third, the landscape of UX research is fragmented and complicated by diverse theoretical models. In addition, Law, et al. (2009) argue that having a universal definition of UX is helpful for several reasons, importantly for this discussion, because it will help to teach UX with the "fundamental understanding of its nature and scope" (p. 720) While we agree that definitional work is important to UX, we do not argue that there is one universal definition of UX. Instead, we believe that TPC practitioners are well equipped to understand and describe UX work within our own disciplinary frame. It would be helpful to define and clearly articulate how the field of TPC is one of many that actively study UX and are involved in various aspects of any UX process. Communicating direct connections from TPC knowledge-making practices, theoretical frameworks, and professional competencies to UX as a field, process, and an outcome benefits programs, instructors, and students.

For TPC programs who want to emphasize or heighten their

connections to UX, having a clear and cohesive frame would be a helpful step in articulation. They can then scaffold this framing across courses and programs. Instructors within these programs can co-create this identity and can locate themselves as a part of a highly distributed network of learning, instead of the sole UX generalist, responsible for teaching all aspects of UX. As a result, instructors can shift their focus from teaching every part of UX and instead make TPC's place within the fields of UX visible to students. When instructors make these disciplinary positions visible, students can gain a meta-awareness of the broad range of what UX is and what it can be.

How UX does (and does not) show up in titles, assignments, and texts. When looking at how instructors incorporate UX in their teaching, we found they do all kinds of things, ranging from a sole assignment such as an instruction set with a usability test to a full UX process that includes highly complex and scaffolded, client-based projects. Further, some instructors explicitly use terms like UX and usability in their assignments, courses, and texts they select and others do not and instead embed UX activities into activities or courses with other names. We again see a wide range of activities and assignments that instructors consider related to UX.

At first blush, these disparate examples can seem overwhelming for instructors or programs considering their own approaches. However, we see the examples of variations as productive. They demonstrate how widely applicable UX concepts are to subjects in TPC courses and how they can be applied in a host of ways for students to gain knowledge in these areas. We are not advocating a one-size fits all approach to UX in TPC. That would be undesirable and also unlikely given the constraints at the program or institution level. We instead argue that UX can be embedded across a TPC curriculum in a strategic way. To do so, we again advocate for providing a clear framing of UX for students and connecting the definition to objectives and activities in coursework and across the program. There is no one size fits all solution for the connection between UX and TPC. It is highly situated and influenced by the localized conditions within the program, institution, geographic region, and local professional communities.

Structures or Constraints that Influence UX Pedagogical Choices

Our second research question asked what structures or constraints influence UX pedagogical choices. When triangulating the results of our questionnaire, interviews, and artifacts, we identified many localized constraints that have their own nuances but cluster around

two distinct challenges: UX programs of one and the durability of usability.

UX programs of one. Within our sample, instructors' expertise and institutional context both structured and constrained their pedagogical choices. Participants in our study rated their expertise across a spectrum of emerging, proficient, and expert, the majority indicated they were emerging or proficient. Many expressed a lack of confidence or uncertainty around teaching UX, echoing Chong (2017) that graduate programs do not adequately prepare students to teach usability, in her case, or UX, in this case. In addition, academic programs can be slow to change and often do not keep up with the faster changes in industry.

Most participants taught in programs (a majority being traditional English departments) where UX was only present in an assignment or a stand-alone course. Instructors use course titles, textbooks, and artifacts that may not include the term UX or User Experience making it difficult for these instructors to be identified as teachers of UX. The vast majority of participants in our study stated that UX was not embedded within the program but rather solely attended to at the assignment or class level. When UX topics are embedded at the assignment or course level, they lack visibility and a larger presence in a program. Individuals can be responsible for the assignment or class level implementations, but a lack of programmatic focus can lead to what feels like a one off or less focused treatment. As Zhou (2014) points out in his critique of the sole usability course, we need more of a programmatic approach to design and evaluation.

These factors contribute to making the instruction of UX within TPC a frequently unacknowledged and solo endeavor or as Buley calls it in her book of the same name a *UX team of one*. Although Buley is referring to UX practitioners, many of the challenges she identifies also surfaced across our dataset. First, instructors teach within institutional contexts that, at best, value UX but do not offer support to sustain a robust program or, at worst, see UX outside of the purview of their programs/belonging to other programs. At other end of this spectrum, instructors have to navigate challenges to have their expertise acknowledged and valued or to join communities of practice. Etienne Wenger (1999) and Etienne Wenger et. al. (2002) argue that communities of practice encourage a shared repertoire and mutual engagement. Second, instructors teach a variety of UX content (research, design, writing, testing) but frequently question if they ***are*** teaching UX or if they are qualified to teach UX. Participants described challenges in supplementing their own learning while

working (teaching), wanting to keep up with industry trends, wanting to integrate relevant texts and activities, and the self-identified need to take online courses or training. While some of our participants relied on typified genre exercises like writing instructions for peanut butter and jelly sandwiches, many instructors had rhetorically rich and integrated UX curricula but did not always identify or name their work as such. The dissonance between our participants' self-described expertise level and their teaching practices suggests the solitary nature of the work, a lack of confidence, and shows lack of community around the practice. Instructors are not naming and claiming their expertise for students or themselves. Again, this is complicated by the lack of visibility of UX within the program. Without having UX scaffolded across a program, these instructors become ad-hoc administrators, making visible curricular paths where few existed before. As a result, programmatic gaps become the individual responsibility of TPC instructors.

The durability of "little u" usability. The purpose of this research was to understand how TPC instructors approach UX pedagogy. However, "little u" *usability* (an evaluation method of UX) permeated our sample even though our consent forms, questionnaire, interview protocols, and requests for teaching artifacts only asked about UX. After reading a preamble that provided a definition of UX, participants had to self-identify that they taught UX as described in that definition. Although some participants were able to place usability as a method within a longer UX process ("Big U" usability), many participants conflated the two terms, using them interchangeably or only using *usability*. In these cases, we asked follow-up questions about the relationship between usability and UX, and participants frequently responded that they had never distinguished between the two or were sometimes unsure that there was a difference.

The results presented in this article suggest that instructors within our sample may not always be explicit with themselves or students that they are teaching usability as a part of UX, and in some cases might often be teaching usability alone. The traces of TPCs historical past with usability are durable; part of this is due to the fact that teachers are teaching usability testing as a method, not as a part of a larger design process. As a result, while instructor focus on "little u" usability alone has remained, the processes before and after usability testing have dramatically changed. Such durability frequently structured and constrained participants' UX pedagogies. For example, when asked to share a teaching artifact that represents their approach to UX, many participants shared instruction set assignments. In some

cases, these assignments did ask students to engage with usability as a part of a more complex UX process (e.g., conduct user research beforehand and design based on that research; test and iterate the instructions based on the test findings). However, more instruction set and usability assignments became a stand-alone exercise in genre and style (e.g. write instructions on how to make a peanut butter and jelly sandwich and do a self-study). When writing about the pedagogy of usability, Chong (2016, 2018) and Zhou (2014) identified that TPC courses with usability components need to move beyond "arhetorical" exercises that make usability the sole focus and instead consider iterative and user-centered processes.

Conclusion and Implications

Our impetus for this research was to respond to the call for more scholarship on UX pedagogy in TPC and help to bridge the gap between individual practice and programmatic insights to develop a better sense of what TPC instructors do when they say they teach UX. The data from the study provides insight into the variability of teaching practices related to UX in TPC and the tensions that result from that variability. One tension we see from this study is expertise: instructors shared sophisticated curriculum and teaching practices related to UX, however, just as many instructors felt a lack of preparation and support. Another tension is the value of UX: while TPC programs acknowledge the importance and value of UX, many individual instructors are solely responsible for teaching UX, either as an assignment or class, which is not scaffolded and incorporated throughout their program. We acknowledge the contextual circumstances that activate these tensions. UX as a field and profession continues to grow in popularity and is recognizable to students as a potential pathway to a career. Due to its interdisciplinarity, UX is claimed by many fields and many departments or programs on one campus. These tensions and circumstances ask us to consider what unique role TPC has to play in this context. These findings have implications for programs to consider a more robust and systematic approach to UX within TPC.

The data captured in this study show a rich and complex set of pedagogical practices, many of which are not a radical departure from what instructors do in many TPC programs. Client based projects, audience analysis, design, iteration, and usability evaluation are common and recognizable activities in TPC. However, we see that many instructors and the programs they reside in are hesitant to name and claim what they do as UX. We see an opportunity for TPC

programs to take a more committed stance and approach to UX.

First, by naming the activities related to UX *as* UX, instructors can help to draw attention to students to expand their understanding of what TPC is. Just as Lauer and Brumberger (2016) demonstrated in their job posting analysis, we can see that the discrete tasks, skills, and activities we teach in TPC overlap with UX. However, that understanding may not be clear to students. The skills and concepts students learn in TPC courses are UX, but we need to name them as such. Second, TPC programs would benefit from more explicitly naming courses and programs in ways that are recognizable to both students and future employers alike. Third, naming our interest in UX as a field allows TPC to continue to grow and occupy space in the competitive landscape of UX education.

But naming in name only is not enough, the field of TPC must also claim UX as a central area of expertise and move away from the narrow definition of usability. Claiming UX involves more clearly articulating how TPC has unique contributions to offer the teaching and practice of UX. As evidenced from this research, instructors in TPC bring a unique and nuanced perspective of audience, imbued with rhetorical awareness, and for many, a commitment to social justice. How does TPC frame our approach to UX that is distinguished from other programs such as Human-Computer Interaction or Information Science? What might we bring to interdisciplinary programs that is unique? How do we claim our space?

Rose and Schreiber (2021) ask similar questions, specifically will TPC acquiesce to the other fields who overlap with UX. We say no. Instead TPC programs interested in UX just need to come to terms *with the term* UX and boldly claim our space as educators of the next generation of UX designers with our unique expertise that focuses on people, rhetoric, advocacy, and social justice.

We see the results of this study as the beginning of a broader conversation in the field of TPC. What is unique about TPC's approach to UX? What is the role of UX in the TPC service course? Is the UX process taught in TPC classes? If so, what steps and sequencing are included? How does TPC scholarship describe and define UX? We look forward to continuing and contributing to this conversation.

References

Balzhiser, Deb, Sawyer, Paul, Womack-Smith, Shen, & Smith, J. A. (2015). Participatory design research for curriculum development of graduate programs for workplace professionals. *Programmatic Perspectives*, 7(2), 79-133.

Bartolotta, Joseph; Bourelle, Tiffany; & Newmark, Julianne. (2017). Revising the online classroom: Usability testing for training online technical communication instructors. *Technical Communication Quarterly*, *26*(3), 287-299.

Bemer, Amanda M.; Moeller, Ryan. M.; & Ball, Cheryl. E. (2009). Designing collaborative learning spaces. *Programmatic Perspectives,* 1(2), 139-166.

Birks, Melanie; Chapman, Ysanne; & Francis, Karen. (2008). Memoing in qualitative research: Probing data and processes. *Journal of Research in Nursing*, *13*(1), 68-75.

Brizee, Allen; Sousa, Morgan; & Driscoll, Dana L. (2012). Writing centers and students with disabilities: The user-centered approach, participatory design, and empirical research as collaborative methodologies. *Computers and Composition*, *29*(4), 341-366.

Buley, Leah. (2013). *The user experience team of one: A research and design survival guide*. Rosenfeld Media.

Chong, Felicia. (2016). The pedagogy of usability: An analysis of technical communication textbooks, anthologies, and course syllabi and descriptions. *Technical Communication Quarterly*, *25*(1), 12-28.

Chong, Felicia. (2018). Implementing usability testing in introductory technical communication service courses: Results and lessons from a local study. *IEEE Transactions on Professional Communication*, *61*(2), 196-205.

Clegg, Geoffrey; Lauer, Jessica; Phelps, Johanna; & Melonçon, Lisa. (2021). Programmatic outcomes in undergraduate technical and professional communication programs. *Technical Communication Quarterly*, *30*(1), 19-33.

Getto, Guiseppe; Potts, Liza; Salvo, Michael J.; & Gossett, Kathie. (2013). Teaching UX: Designing programs to train the next generation of UX experts. In *Proceedings of the 31st ACM International Conference on Design of Communication*. 65-70.

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

Haas, Angela M., & Eble, Michelle F. (Eds.). (2018). *Key theoretical frameworks: Teaching technical communication in the twenty-first century*. University Press of Colorado.

Holley, Karri. (2009). The challenge of an interdisciplinary curriculum: A cultural analysis of a doctoral-degree program in neuroscience. *Higher Education*, *58*(2), 241-255.

Howard, Tharon W. (2015). Building usability and user-experience testing facilities in professional and technical communication programs. *Programmatic Perspectives*, 7(2), 134-152.

International Standards for Organization. (2018). *Ergonomics of human-system interaction — Part 11: Usability: Definitions and concepts* (ISO/DIS Standard No. 9241-11). Retrieved from https://www.iso.org/obp/ui/#iso:std:iso:9241:-11:ed-2:v1:en

Kowalewski, Scott J., & Williamson, Bill. (2016). Strategic assessment and usability studies: Tracing the evolution of identity and community engagement in an undergraduate professional and technical writing program. *Programmatic Perspectives, 8*(2), 96-118.

Lauer, Claire, & Brumberger, Eva. (2016). Technical communication as user experience in a broadening industry landscape. *Technical Communication,63*(3), 248–264.

Law, Effie L. C.; Roto, Virpi; Hassenzahl, Marc; Vermeeren, Arnold P.; & Kort, Joke. (2009, April). Understanding, scoping and defining user experience: A survey approach. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 719-728).

Liang, Calvin A.; Munson, Sean A.; & Kientz, Julie A. (2021). Embracing four tensions in human-computer interaction research with marginalized people. *ACM Transactions on Computer-Human Interaction (TOCHI)*, *28*(2), 1-47.

Miller, Carolyn. R. (1979). A humanistic rationale for technical writing. *College English, 40*(6), 610-617.

Melonçon, Lisa., & Henschel, Sally. (2013). Current state of US undergraduate degree programs in technical and professional communication. *Technical Communication*, *60*(1), 45-64.

Melonçon, Lisa. (2018). Critical postscript: On the future of the service course in technical and professional communication. *Programmatic Perspectives, 10*(1), 202-230.

Mueller, Derek N. (2017). *Network sense: Methods for visualizing a discipline*. WAC Clearinghouse.

Norman, D., & Nielsen, J. (n.d.). *The definition of user experience (UX)*. Nielsen Norman Group. Retrieved January 25, 2022, from https://www.nngroup.com/articles/definition-user-experience/

Opel, Dawn S., & Rhodes, Jacqueline (2018). Beyond student as user:

Rhetoric, multimodality, and user-centered design. *Computers and Composition*, *49*, 71-81.

Quesenbury, Whitney. (2014). Dimensions of usability. In Albers, Michael J., & Mazur, Beth (Eds.). *Content and complexity: Information design in technical communication*. Routledge.

Rice-Bailey, Tammy, & Shalamova, Nadya. (2016). Transitioning from technical communication to user experience (UX): A case study of a collaborative curriculum redesign. *International Journal of Sociotechnology and Knowledge Development (IJSKD)*, *8*(3), 1-14.

Redish, Janice G., & Barnum, Carol. (2011). Overlap, influence, intertwining: The interplay of UX and technical communication. *Journal of Usability Studies*, *6*(3). 90-101.

Rose, Emma J., & Schreiber, Joanna. (2021). User experience and technical communication: Beyond intertwining. *Journal of Technical Writing and Communication, 51*(4), 343–349. https://doi.org/10.1177/00472816211044497

Rose, Emma J., & Turner, Heather N. (2020, October). The pedagogy of user experience: Methods, tools, and approaches. In *Proceedings of the 38th ACM International Conference on Design of Communication* (pp. 1-2).

Rose, Emma, & Turner, Heather N. (2021, December 3). About UX pedagogy. *UX Pedagogy: The Art and Science of Teaching User Experience.* https://sites.uw.edu/uxpedagogy/about-ux-pedagogy/

Rose, Emma, & Tenenberg, Josh. (2017). Making practice-level struggles visible: Researching UX practice to inform pedagogy. *Communication Design Quarterly Review*, *5*(1), 89-97.

Shalamova, Nadya N.; LaPointe, Amii K.; Nero, Rob R.; & Delgaudio, Michael. (2021). Shaping UX academia-industry alignment: A strategic partnership through an industrial advisory board. *EduCHI 2021: Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems.*

Tham, Jason C. K. (2021). *Design thinking in technical communication: Solving problems through making and collaboration.* Routledge.

Vealey, Kyle P., & Hyde, Charlotte. (2008). Extending participatory assessment to STEM, community, and industry stakeholders: Rhetorical work and ethical considerations. *Programmatic Perspectives, 7*(2), 4-24.

Wenger, Etienne. (1999). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.

Wenger, Etienne; McDermott, Richard A.; & Snyder, William. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business Press.

Zachry, Mark, & Spyridakis, Jan H. (2016). Human-centered design and the field of technical communication. *Journal of Technical Writing and Communication*, *46*(4), 392-401.

Zappen, James P., & Geisler, Cheryl. (2009). Designing the total user experience: Implications for research and program development. *Programmatic Perspectives*, *1*(1), 3-28.

Zhou, Quan. (2014). "That usability course": What technical communication programs get wrong about usability and how to fix it. *Communication Design Quarterly Review*, *2*(3), 25-27.

Appendix A. Interview questions

Background

1. Tell us your title and where are you situated in your institution (rank/program)? (English dept, stand alone, etc).
2. What do you consider your home discipline or field?

Teaching UX

3. We are interested in learning more about how you teach UX and how it's incorporated in your program.
   - What best describes how UX is taught in your program?
   - UX is incorporated throughout the program (go to program)
   - UX is taught as a specific or standalone class (go to artifact)
   - UX is incorporated into assignments in class or different classes (go to artifact)

Program

4. Tell us more about how UX is integrated throughout the program?
5. What are the defining features of your program?
6. What is your role in your program? Are you involved in making decisions in your program?
7. Where does your program have room for growth?
8. Does your program track alumni? Do you have any data on if students go on to work in the field of UX?

Artifact

9. Can you share an example of an "artifact" that represents how you approach teaching UX. Perhaps a program description, a syllabus, or an assignment
   - Tell me about this class: grad/undergrad, upper level/lower, requirement, how many students?
   - What is this artifact? How does this fit into your class/ program?
   - Step me through how this represents how you teach UX
   - What are your motivations, what influences do you draw on?
   - What challenges or obstacles do you or students face with this particular learning experience?
   - What do you hope that students learn in this ux assignment/course?
   - How do you know if you've successfully taught the topic?

Reflecting on your practice

10. What is most challenging about teaching UX?
11. What is unique about how you teach UX?

12. How would you like to deepen your expertise?
13. There has been an increased focus on inclusive teaching practices in the field. Can you give us some examples of how inclusivity shows up when you teach UX?

Final reflections

14. Stepping back from the specific example you shared, can you talk more broadly about your UX teaching practice.
15. What do you think TPC has to offer over other fields when it comes to teaching UX?
16. What would teaching UX inclusively look like in our field?
17. Is there anything else you would like to share with us?
18. Do you have any questions for us about this research or things you'd like to learn more about?

Author Information

Heather Noel Turner is an Assistant Professor and Director of Internships in the Department of English at Santa Clara University (SCU). Her research interests include User Experience (UX), pedagogy, design methodologies, and rhetorical approaches for data visualization. At SCU, Dr. Turner serves as founder and director of the User-Experience Research and Writing Lab and as a member of the Digital Humanities Working Group Advisory Council.

Emma J. Rose is an Associate Professor in Writing Studies and a core faculty member in the Global Innovation and Design Lab at the University of Washington Tacoma she also holds an adjunct appointment in Human-Centered Design & Engineering at University of Washington Seattle. Her research is motivated by a commitment to social justice to engage in questions about how technologies are designed and who is doing the designing. Prior to her academic career, she spent over a decade working as a user experience consultant. Her current research focuses on UX pedagogy.

Acknowledgements

The authors wish to thank the instructors who participated in our interviews and surveys. You were candid, enthusiastic, generous, and supportive. This work would not be possible without you. We would also like to thank Jia Seow and Teresa Contino for their work as research assistants on this project. Finally, thank you to CPTSC for the 2020 research grant and their support of this work.

FOCUS Preview
Volume 13, Issue 1

Joseph Jeyaraj
New York City College of Technology

This edition of FOCUS offers articles on technical and professional communication pedagogy. They bring together theory and practice and make visible connections between theories underlying civic concerns and social justice with curricular and pedagogical practices for applying those theories. Stephen Carradini's "Civic Social Media: A Detailed Case for Classroom Use" offers insightful ideas on how to make pedagogical connections with the outside in the context of new media work his students completed in the workplace for a technical writing course. He examines a service-learning project involving social media and gives readers various insights for applying these ideas in TPC courses in the domains of client analysis, content development, and managing projects. Isidore Dorpenyo and Lourdes Fernandez, on the other hand, in their piece "Towards a Social Justice Agenda: Learning Outcomes as a Site for Coalition Building" demonstrate through curricular and pedagogical actions from the inside how to make these connections. They examine the lack of social justice-related learning outcomes in technical writing course syllabi, and in an effort at building coalitions they have created such outcomes for inclusion in course syllabi and would like to do the same with program descriptions as well. Their essay will be a resource for TPC faculty and programs wishing to visibly emphasize social justice in learning outcomes for programs. Both pieces complement each other in how they explore these topics.

Contact editor: jjeyaraj@citytech.cuny.edu

Civic Social Media: A Detailed Case for Classroom Use

Stephen Carradini
Arizona State University

Abstract. This paper discusses a complex case built from a semester-long, multi-section, online, civic social media service learning project. Due to the case's detail, this case can be used in multiple types of TPC courses, such as content management, translation, policy, introductory technical communication, and more.

Keywords: Case, Content, Pedagogy, Service Learning, Social Media

In Fall 2018, I partnered with the City of Glendale (AZ) via a university-wide initiative named Project Cities to conduct a semester-long service-learning project in two sections of a Social Media in the Workplace course. Students created social media policies and plans for a city government. The students learned much about working in a real-world environment. This article describes a pedagogical case developed from the experience to use in future classes. TPC programs with courses such as Introduction to Technical Communication, Content Management, Translation in Technical Communication, and Civic/Public Technical Communication could employ this detailed, open-ended case.

While "case" and "case study" have many uses in research and teaching, case is used throughout this article to mean an activity where a teacher gives "students problems in real-world communica-

Contact author: stephen.carradini@asu.edu

tion set in organizational contexts that replicate in detail their technical and professional roles" (Couture & Goldstein, 1984, p. v). Thus, I will use the terms "pedagogical case" formally and "case" informally.

Civic Service Learning

This pedagogical case particularly concerns social media use in a civic environment. Social media has become part and parcel of technical communication work, being more often mentioned in technical communication job listings studied by Eva Brumberger and Claire Lauer (2015) than medical writer and grant/proposal writer. Research on social media in technical communication reflects this development (refer to Miller et al. (2020) for an overview).

One of the many roles of professional technical communicators in social media is sending information of civic importance (Potts, 2013; Richards, 2018). Civic concerns in the technical communication classroom have grown as "technical communication instructors increasingly seek to supplement and balance their focus on teaching pragmatic documents and institutionally expressive genres like feasibility reports with learning about critical citizenship" (Mara, 2006, p. 216).

Technical communication students can interact with civic spaces through service-learning projects, where students work with a partner organization (Sapp & Crabtree, 2002). Online classes can participate in these opportunities as well (Soria & Weiner, 2013). Service learning provides students with experience outside the classroom and external motivation. However, coordinating service-learning projects can be difficult for the teacher to handle and sustain logistically (Cushman, 2002), while "high-risk and unpredictable" community-based projects may fail (Brizee, 2020, p. 346).

Case Context

While a pedagogical case cannot replace the value of a service-learning project, pedagogical cases can offer a detailed context for work when the instructor identifies that a semester is not right for service learning.

I developed this detailed pedagogical case regarding social media in a civic organization for future classes after the successful, complex logistical experience of running a two-course, online service-learning project in Fall 2018. The case offers a way for students to produce work for a real context that previously existed, without the needs and risks of a service-learning project. The case is described below, speaking directly to students. The quotes from the director are real and used with permission.

The Pedagogical Case: City Social Media

Social media faces a seeming lack of policies, rules, or regulations for people and organizations. However, rules and regulations regarding social media have begun to appear since the public emergence of Facebook in 2006. These policies, rules, and regulations are not uniform. Local, state, and federal jurisdictions vary and sometimes contradict. Some rules are passed down from court cases but are not yet enshrined in law. Rules are rarely collected into a single list. Coming up with a comprehensive set of policies, rules, and procedures that follow applicable laws takes research.

Organizations developing professional social media must respect these rules as they communicate with multiple online audiences to reach the organization's goals. Speaking to diverse audiences requires taking into account content, tone, timing, context, and more. As a result, writing a social media plan is a complex effort.

The City of Glendale is aware of these policy and implementation difficulties. Amid these concerns, they seek to hire a social media manager. In preparation for hiring that social media manager, they have hired you to help them address policy and implementation issues in advance. There is strong buy-in from all levels of the city. They are aware of what they don't know, and want to learn.

Policy Needs

The City of Glendale is particularly concerned with policies surrounding:

- Hate speech vs free speech
- Legal obligations surrounding retention of social media records
- Emerging legal concerns that the city may not know about

In particular, the Public Affairs Director is concerned about hate speech: "I know there are laws surrounding this, but am not sure if they have been clear enough. What one person may consider hate speech just because it's negative may still be protected under free speech." (Public Affairs Director, personal communication, May 30, 2018)

The City also wants suggestions for best practices in social media management. The City would like to be informed on which best practices should be implemented as pre-existing rules for the incoming social media manager and which ones should be left up to the incoming social media manager to decide on.

Implementation Needs

The City of Glendale wants a plan that covers four goals:

1. The City wants to be able to have purposeful communication.
2. The City wants to bring news and information directly to the people rather than going through the media or others.
3. The City wants to engage with citizens and answer their questions on a platform they are already at to do other things.
4. The City wants to reach the maximum amount of people possible.

Glendale is a diverse city with many populations. While the City wants to reach the maximum amount of people possible, the Public Affairs Director identified four demographics of particular focus for the city: the Hispanic community, the retired community, the business community, and visitors. Reaching these audiences may require different strategies. The business and visitor communities are heavy internet users with strong amounts of internet access, while the retired community (10% of Glendale's population is over the age of 65) and the Hispanic community (37% of the Glendale population) may have less internet access and/or use the internet less.

In addition to specific demographic groups, the City is interested in a particular psychographic group: "The day to day resident who has no interaction with their local government." The Director describes this type of citizen via their activities: "Pays their bills online, doesn't come to city hall, isn't engaged with the city because they don't know how to or where to go for official information." This psychographic group is contrasted with a well-served population: "those individuals who have taken the time to subscribe to the various newsletters offered by separate divisions within the city, like Councilmembers newsletter, parks and rec newsletters, public works, transportation, etc." (Public Affairs Director, personal communication, May 30, 2018)

The Public Affairs Director is ready to cover the necessary financial elements of the implementation plan, as well: "The social media manager will be provided with the technology and resources they need to do their job. We have the budget to cover initial startup costs as well as ongoing costs" (Public Affairs Director, personal communication, May 30, 2018). The city currently uses Facebook, Twitter, Instagram, and YouTube but does not have a systematic plan for using any of them.

For more detailed information about what the City of Glendale needs, see the Interview with the Public Affairs Director. This interview with the Director will allow you to get a better sense of what the City is looking for and how to plan your work.

Interview with the Public Affairs Director

1. Three approaches to social media are tight, moderate, or loose. The tight approach avoids controversy at all costs, to the point of non-engagement with and the deleting of user posts. The moderate approach allows the social media manager to carefully engage users in certain situations once the boss has been informed of the situation. The loose approach gives the social media manager discretion to handle situations and engage constituents within the bounds of the rules. Which approach would the city like?

   While there are plusses and minuses of each of those strategies, I would like our strategy to be one of looser engagement. I feel comfortable with this approach because we will have a dedicated staff person assigned to monitor and engage as their full-time job. If this responsibility was just a side project added onto someone's full time job I would be leaning more moderate. However, I think I am open to the input from you and the students on this approach.

2. Who will the social media manager report to?

   The position will report directly to me, the Public Affairs Director. I report directly to the City Manager.

3. How much oversight will the social media manager have? How much freedom to choose when and what to post?

   They will be coordinating the short and long-term strategy directly with me, but will have the flexibility and discretion to post and respond as they see necessary on a day to day basis.

4. What areas of content should be vetted through the administration (if any)?

   If there are major announcements, emergency situations and PR crises situations, they will need to be vetted.

5. How will the social media manager receive content to post? Will it come direct from one source or from many sources?

   The content will be generated from multiple departments. However, the idea for the content will have to come from the social media manager.

6. What concerns does the City of Glendale have about social media? Any apprehensions or areas that need to be addressed? This document can serve to answer outstanding questions any of the team may have; if there are any of those, please list them here.

   Our biggest concern today is that we are not utilizing the mediums. I don't think we have enough experience to know exactly what concerns or issues we could come across. Perhaps the students in studying

other government or private social media accounts who have been at this for a while may be able to gather some info like this for consideration from those people or groups running those accounts.

7. What does the City currently do on social media?

   We try to promote a comprehensive list of things. We promote our own city festival and events. We try to promote all of the good work that is being done for the residents by city departments. We would also like to promote our private sector partners and any non-city event going on downtown, at Westgate, at the arena or at the stadium. We want to promote the services that are available and the facilities that residents can use like parks, libraries, pools, open spaces, funding, assistance etc. (Public Affairs Director, personal communication, May 30, 2018)

Course Logistics: Levels, Lengths, and Modes

TPC instructors can employ this pedagogical case in semesters of different levels, lengths, and modes that correspond to the diversity of teaching arrangements in TPC programs.

This case can work for undergraduate students in a 15-week face-to-face course. In the case's original context, undergraduates in a Social Media in the Workplace course delivered a social media plan that included audience analysis, content ideas, schedules, timelines, budgets, and other practical details. The project began early in the semester, with aspects of the project distributed over a long period of time. Given that this is designed as a one-semester project, students still had to do fairly quick turnarounds on the project deliverables.

To offer students grounding in strategy and planning, instructors can assign chapters 4 (Social Media Marketing Strategy), 5 (Tactical Planning and Execution), 10 (Social Media Analytics), and 11 (Social Media Metrics) in Social Media Marketing by Tracy L. Tuten and Michael R. Solomon (2017). Articles such as Hootsuite's "How to Create a Social Media Plan in 9 Easy Steps" (Newberry & Lepage, 2021), Buffer's "How to Create an Extraordinary Social Media Plan for 2018" (Lanoue, 2017), and Hootsuite's "20 Social Media Templates to Save You Hours of Work" (Aynsley & Tien, 2021) can augment the text.

Beyond this face-to-face programmatic context, many TPC programs offer courses via multiple online modalities (synchronous, asynchronous, hybrid, and flexible) of variable length. This case can be used in these classes as well. In the case's original context, graduates

in a Social Media in the Workplace course produced a policy, rules and procedures document that covered legal, technical, and best-practices aspects of social media management in a 7.5-week online asynchronous course. The graduate project began in Week 1 and employed just-in-time learning to fill in the gaps in student knowledge. While this method allowed the case to run in the 7.5 weeks allotted, some students would have preferred to learn the concepts first and then put them into use later.

Instructors can assign "The City that Incorporated Social Media into Everything" (Newcombe, 2015), "Social Media in Smart Cities: An Exploratory Research in Mexican Municipalities" (Sandoval-Almazan et al., 2015), and "Usage of Social Media in City Marketing: A Research on 30 Metropolitan Municipalities in Turkey" (Gümüş, 2016) to ground the class in governmental use of social media. The OpenGov blog (OpenGov.com/blog) provided further research on the topic.

Programmatic Fit: Assigning the Case

In addition to fitting with the diversity of teaching arrangements in TPC programs, this pedagogical case can respond to various classes in TPC programs. This flexibility is valuable for programs that address social media by distributing the topic across a variety of program courses.

The natural home of the case would be a Civic Technical Communication or Public Technical Communication course, as concepts learned can be applied to the case throughout the course. In Introduction to Technical Communication, the case could demonstrate how real-world scenarios call for many aspects of technical communication practice. Content Management students may assess strategies for social media content planning and maintenance. Because the City asked for a plan to reach Hispanic audiences, a multi-lingual plan could fit in a Translating Technical Communication course. Dealing with the unusual style and grammar of social media could make for a unique case in a Technical Editing course.

With a few modifications, students in User Experience courses could do interviews to determine what type of user experience and content would be desirable for the various audiences mentioned in the case. Visual Communication courses could make informative graphics for social media, while multimedia courses could make videos and/or podcasts for inclusion in Glendale's social media. Accessibility in Technical Communication students could investigate how to make social media posts accessible to the varieties of audiences suggested. All courses could integrate viewpoints from social justice to discuss

how to create content equitably and sensitively for multiple distinctive audiences with disparate needs and wants. The detailed nature of the case provides many different entry points for classes throughout the TPC curriculum.

For programs that include service learning in their curriculum, this case could provide an early experience for students to become acquainted with the process of client projects. Building use of this case into an early course on the curricular map may help develop student knowledge in advance of later projects with clients.

This pedagogical case's flexibility allows TPC programs and instructors to employ it in various classes, teaching modalities, schedules, and teaching levels. Programs and instructors can use the case as a standalone learning experience or as an on-ramp to introduce students to client project experiences. While nothing can replace the experience of a service-learning opportunity, this case provides a detailed approximation of a civic scenario for use in technical communication programs and classrooms.

References

Aynsley, Michael & Tien, Shannon. (2021). 20 social media templates to save you hours of work. *Hootsuite Blog*. https://blog.hootsuite.com/social-media-templates/

Brizee, Allen. (2020). What happens when we fail? Building resilient community-based research. *Journal of Technical Writing and Communication, 50*(4), 339–375. https://doi.org/10.1177/0047281619876292

Brumberger, Eva & Lauer, Claire. (2015). An evolution of technical communication: An analysis of industry job postings. *Technical Communication, 62*(4), 224–243.

Couture, Barbara & Goldstein, Jone R. (1984). *Cases for technical and professional writing*. Little, Brown.

Cushman, Ellen. (2002). Sustainable service learning programs. *College Composition and Communication, 54*(1), 40–65.

Gümüş, Niyazi. (2016). Usage of social media in city marketing: A research on 30 metropolitan municipalities in Turkey. *EMAJ: Emerging Markets Journal, 6*(2), 30-37. https://doi.org/10.5195/emaj.2016.114

Lanoue, Spencer. (2017). How to create an extraordinary social media strategy for 2018. *Buffer Blog*. https://buffer.com/resources/social-media-strategy-2017/

Mara, Andrew. (2006). Pedagogical approaches: Using charettes to perform civic engagement in technical communication classrooms and workplaces. *Technical Communication Quarterly, 15*(2), 215–236. https://doi.org/10.1207/s15427625tcq1502_5

Miller, Jennifer R.; Dieterle, Brandy; deWinter, Jennifer; & Vie, Stephanie. (2020). Social media in professional, technical, and scientific communication programs: A heuristic to guide future use. *Communication Design Quarterly, 8*(1), 19–34. https://doi.org/10.1145/3375134.3375136

Newberry, Christina & LePage, Evan. (2021). How to create a social media strategy in 9 easy steps. *Hootsuite Blog*. https://blog.hootsuite.com/how-to-create-a-social-media-marketing-plan/

Newcombe, Tod. (2015). The city that incorporated social media into everything. *Governing*. https://www.governing.com/archive/gov-integrating-social-media-roanoke.html

Ornatowski, Cezar M. & Bekins, Linn K. (2004). What's civic about technical communication? Technical communication and the rhetoric of "community." *Technical Communication Quarterly, 13*(3), 251–269. https://doi.org/10.1207/s15427625tcq1303_2

Potts, Liza. (2013). *Social media in disaster response: How experience architects can build for participation*. Routledge.

Richards, Daniel P. (2018). Not a cape, but a life preserver: The importance of designer localization in interactive sea level rise viewers. *Communication Design Quarterly, 6*(57–69).

Sandoval-Almazan, Rodrigo; Valle Cruz, David; & Nunez Armas, Juan Carlos. (2015). Social media in smart cities: An exploratory research in Mexican municipalities. *48th Hawaii International Conference on System Sciences*. https://doi.org/10.1109/HICSS.2015.284

Sapp, David Alan & Crabtree, Robbin D. (2002). A laboratory in citizenship: Service learning in the technical communication classroom. *Technical Communication Quarterly, 11*(4), 411–432. https://doi.org/10.1207/s15427625tcq1104_3

Soria, Krista M. & Weiner, Brad. (2013). A "virtual fieldtrip": Service learning in distance education technical writing courses. *Journal of Technical Writing and Communication, 43*(2), 181–200. https://doi.org/10.2190/TW.43.2.e

Tuten, Tracy L. & Solomon, Michael R. (2017). *Social media marketing* (3rd ed.). Sage.

Author Information

Stephen Carradini is an assistant professor of technical communication at Arizona State University – Polytechnic Campus. His research focuses on social media in the workplace, the impact of emerging technologies on professional communication, and inter/disciplinarity. *IEEE Transactions on Professional Communication*, *Business and Professional Communication Quarterly*, and *New Media and Society* have published his work.

Towards a Social Justice Agenda: Learning Outcomes as a Site for Coalition Building

Isidore Kafui Dorpenyo
Lourdes Fernandez
George Mason University

Abstract. In this short article we share initial efforts made by faculty in the professional and technical writing concentration at George Mason University to redesign the professional and technical writing minor curriculum to equip students with the tools to dismantle unjust and oppressive practices. We provide our three-pronged approach as: a) beginning the conversation through content analysis; b) strategizing revisions to align with social justice goals; and 3) coalition building.

Keywords: Coalition Building, Curricular Change, Learning Outcomes, Programmatic Administration, Professional and Technical Writing, Social Justice

In this short article we share initial efforts made by faculty in the professional and technical writing concentration at George Mason University to redesign the professional and technical writing (PTW) minor curriculum to equip students with the tools to recognize, reveal, reject, and replace unjust and oppressive practices that are produced, reproduced, and maintained by communication practices and our various institutions (Walton et al., 2019). This exigence to redesign the curriculum was influenced by internal (local) and external (global) forces.

Internally, the president of George Mason, Gregory Washington, the first Black president of the university, recognized the need for institutional reforms. On July 23, 2021, he announced a taskforce on

Contact author: idorpeny@gmu.edu

antiracism and inclusive excellence that will take actionable steps to "address racial inequities" (Washington, 2020) at George Mason University. The taskforce is to reflect on six broad areas: Training and Development; Campus and Community Engagement; University Policies and Practices; Curriculum and Pedagogy; Student Voice; and Research. The taskforce is expected to come up with practices that will amplify the agency of marginalized or underrepresented groups.

The president's initiative aligns with the current upsurge of conversations about social justice in technical and professional communication. Thus, the second force that informed our decision to redesign the curriculum was our disciplinary knowledge about the uptick in research in social justice. Although scholarship in social justice is on the increase, much of those conversations have not influenced pedagogical or curriculum design (Agboka & Dorpenyo, 2022). In other words, while we have seen numerous publications on social justice, curriculum design has yet to keep up with the pace of scholarly conversations in social justice. Agboka and Dorpenyo (2022) documented this development when they analyzed 231 technical communication program websites and found out that only 23 had courses that explicitly discuss social justice.

We wanted curricular change for the PTW minor to be coalitional, so we decided to focus on the learning outcomes of a 300-level course as a productive site to begin this conversation. Our curricular work has been informed by the notion that social justice "explicitly seek[s] to redistribute and reassemble—or otherwise redress—power imbalances that systematically disenfranchise some stakeholders while privileging others" (Haas & Eble, 2018, p. 3) and that social justice works from the assumption "that we are all complicit in injustices and that our only recourse is to engage these injustices overtly, purposefully" (Walton et al., 2019, p. 2). Focusing on the learning outcomes first has allowed us to begin wider curricular change intentionally and deliberately for the PTW minor, while allowing for conversations about social justice to begin through the learning outcomes.

Therefore, our revision responds in part to George Mason University's president's initiative, and in part to the social justice turn in technical communication. We believe that the president's initiative and calls for technical communicators to explicitly address social justice issues are steps towards actions that will fulfill both local and global concerns aimed at uprooting systemic injustice, racism, discrimination, and white supremacy. We believe that we need to develop a curriculum that not only prepares professional and technical communicators to understand or know how to write, but also a curriculum that prepares

students to:

1. understand and address systemic racism and values in a multicultural world;
2. intentionally include diverse scholars and voices that contribute to the academy; and
3. help prepare future engineers, technical professionals, and managers to create more inclusive and equitable workplaces/designs.

In subsequent paragraphs, we describe how we have begun to build coalitions that allow us to make incremental changes that can then cascade into broader initiatives, keeping in mind the different institutional mechanisms available to us. We reflected on these questions: How can learning outcomes help us begin the conversation and coalitional support needed to more explicitly address issues of diversity, equity, and inclusion? How do we strategically engage with current institutional mechanisms to advance this conversation?

Step 1: Beginning the Conversation - Content Analysis of the 300-level Course

At Mason, the PTW minor has gone through several revisions in the last few years, mostly focused on increasing student participation. More recently, we began discussing the PTW minor as a productive site for centering social justice concerns, which align to the external and internal exigencies named above. In our conversations, we soon realized that rather than begin with the minor, which requires extensive coordination within the institution, we could begin by focusing on one 300-level course, ENGH 388 Professional and Technical Writing. The ENGH 388 professional and technical writing course is a requirement for students who seek to graduate with a PTW minor, but it is also a required course for psychology and computer science majors, so it includes students from a variety of disciplines. This course is a hub for students in engineering, psychology, computer science, writing and rhetoric, film and media studies, business, sciences, literature, and accounting. The course has an online template, assignment sheets, and PhD TAs often teach it and use those resources, which has helped somewhat in standardizing course content and delivery. Depending on the number of TAs available and needs of students, we offer about five sections every semester. In the summer, we offer about four sections. Table 1 below indicates the syllabi we collected and the dates the course was taught. The class helps students to meet these outcomes:

- Be familiar with the major genres of the workplace, including memos, email, proposals, and white papers;
- Be familiar with the basic elements of document design, including principles of accessibility;
- Be familiar with basic visual communication principles;
- Have developed audience awareness and techniques for addressing multiple workplace audiences;
- Be able to work collaboratively and complete projects within deadlines.

Thus, we thought it was important to review syllabi from this class because of the broader outreach work it does at Mason. We also bore in mind the claim Lisa Melonçon (2018) made in "A Critical Postscript on the Future of the Service Course in Technical and Professional Communication," which notes that the service course "ought to be the touchstone from which we improve as a field—particularly in our programmatic research and development" (p. 202). Because of its broad impact on students and visibility in the university, the course could be a site where we can produce lasting impact and transformation toward equity and inclusion (Bay, 2022; Shelton, 2020).

To see how the learning outcomes reflected current field practices, we performed a content analysis on fifteen ENGH 388 syllabi from courses taught between 2014 and 2021 to see if instructors explicitly included social justice issues, including race and diversity, systemic injustice, marginalization, diversity, and privileging of one world order over the other, disability, translation, multilingualism, access, advocacy, and activism. We sought to look at syllabi from 2014 because it was the year the course was introduced in the department. Unfortunately, as Table 1 shows, we did not receive any document from 2014. This is probably because most of the TAs who taught the class had graduated and faculty had relocated to other universities. We followed the GRAM framework proposed by Schreiber & Melonçon (2019) as we collected the data. That is, we *gathered* documents, *read*, *analyzed*, and *made* sense of our data through content analysis. Content analysis is a highly flexible but systematic, inductive, and rigorous approach researchers use to analyze documents obtained or generated during research. In this process, the researcher uses analytic constructs, or "rules of inference to move from the text to the answers to the research question" (White & Marsh, 2006, p. 27). Following Geoffrey Clegg et al. (2021), we created an initial list of descriptive codes based on three primary criteria: (1) an inductive reading of the program outcomes; (2) considerations of existing literature; and (3) our own situatedness within the field and our home programs. We each analyzed the syllabi separately

and met to discuss our findings. Lourdes' initial content analysis yielded 235 codes while Isidore's yielded 225 codes. For the second round of coding, we met to discuss our findings and we noticed we had to merge some of the codes. Before we merged our codes, we separately generated a word cloud of our codes to identify recurring patterns. To generate the word cloud, we copied and pasted our codes into the word cloud generator. Figures 1 and 2 indicate our separately generated clouds, Table 2 captures the codes and outcomes from Lourdes' analysis, and table 3 captures codes and outcomes from Isidore. Table 4 captures our merged codes and outcomes.

Table 1. ENGH 388: PTW course offerings between 2016 and 2021

Semester	**Year**	**Number of syllabi**
Fall	2016	1
Fall	2017	1
Fall	2018	1
Spring	2018	1
Summer	2018	1
Spring	2019	2
Summer	2019	1
Summer	2020	3
Spring	2021	4
Total		15

Figure 1. Word Cloud from Isidore's codes

Figure 2. Word Cloud from Lourdes' codes

Table 2. Codes with Lourdes' analysis

Code	Outcome
Professional and technical writing/ communication	28
Rhetoric	21
Writing/writing process	8
Design/document design	22
Oral communication/presentation	2
Professionalization	23
Genres	36
Audience/audience awareness	27
User	4
Technology/tools	3
Scholarly inquiry/research	6
Collaboration	4
Communication	3
Context	6
International	1
usability	9
Visual communication	4
innovation	2
Entrepreneur	2
accessibility	3
Problem solving	2
Grammar	4
Project	1
Planning	1
multimodal	2
Practical/practice	9

Table 3. Codes from Isidore's analysis

Code	Outcome
Writing/write/writing process	12
Communication	14
Context and situations	14
Rhetoric	13
Scholarly inquiry/research	6
Design/document design	16
Present/oral presentation	2
Practice/practical experience	17
Professionalism	10
Genres/professional genres/genre knowledge	32
Professional and technical writing	5
Audience	25
Technology use/technical knowledge	11
Workplace/workplace writing	14
Purpose	1
Social justice	1
International/cultural diversity/global sensitivity	7
Problem solving	2
Collaborative writing/skills	4
Usability/user test	5
Innovation	1
Entrepreneur	1
Accessibility	4
Visual communication	4
Grammar	4

Table 4. Merged codes from Lourdes' and Isidore's analysis

Merged Code	Outcome
Professional and technical writing/ communication	33
Rhetoric	34

Writing/writing process/write	20
Design/document design	38
Oral communication/presentation	4
Professionalization	33
Genres/genre knowledge	68
Audience/audience awareness	52
User/user test/usability	18
Technology/tools/technology use/technical knowledge	14
Practical/practice	26
Scholarly inquiry/research	12
Collaboration/collaborative writing or skills	8
Communication	17
Context and situations	20
International/cultural diversity/global sensitivity	8
Visual communication	8
innovation	3
Entrepreneur	3
Accessibility	7
Problem solving	4
Grammar	8
Project	1
Planning	1
multimodal	2
Workplace writing	14
Purpose	1
Social justice	1

As the codes in Tables 2 and 3 and the figures show, ENGH 388 was structured around the six layered literacies for technical writers which was proposed by Kelli Cargile Cook (2002) in her TCQ article "Layered Literacies: A theoretical frame for technical communication pedagogy." The six literacies Cargile Cook proposed include basic, rhetorical, social, technological, ethical, and critical. This framework shows how techni-

cal communicators are trained to learn: the basic skills to communicate well and write clearly; rhetorical skills which help students to appreciate the needs of audiences; collaboration skills; a working knowledge of the technologies that technical and professional communicators use at the workplace and in the classroom; a consideration of stakeholders in a writing situation; and a consideration of how ideological stances and power structures shape the writing situation (Cargile Cook, 2002).

Coming into this research we wanted to see if assignments and readings currently in use aligned with concerns raised by the social justice turn. Specifically, we hoped to see outlines that explicitly addressed one or several of the 4R heuristics proposed by Walton et al. (2019), namely:

- Recognizing injustices, systems of oppression, and our own complicities in them
- Revealing these injustices, systemic oppressions, and complicities to others as a call-to-action and (organization/social/political) change
- Rejecting injustices, systemic oppressions, and opportunities to perpetuate them
- Replacing unjust and oppressive practices with intersectional, coalition-led practices

Although the 4R's framework became operational in the field in 2019, conversations about social justice and diversity were being advanced by numerous scholars (Agboka, 2013; Jones et al., 2014; Popham, 2016) and the expectation was that we would see an orientation towards social justice, even if it was not the focus of the class. Also, while social justice topics may be taught without the learning outcomes explicitly saying so, learning outcomes often impact content for the graduate pedagogy course, the professional development of graduate assistants, and the expectations of faculty new to the course.

From the two diagrams and tables above, one can see that the learning outcomes of ENGH 388 focus on: writing, genre, audience, rhetoric, workplace, design, documents, professionalism, oral presentation, communication, practice, and usability. These terms, we believe, maintain the traditional conversations that enculturate or prepare technical communicators to be good writers or designers at the workplace. To be clear, the social justice turn calls for technical communicators to be able to recognize and openly have conversations about injustice, inequity, racism, marginalization, and activism. The word clouds clearly show a disjuncture between training technical communicators to be mere scribes or translators and technical communicators as critically engaged citizens who are ready to dismantle

unjust practices. We did not see any direct or indirect references to the 4Rs framework, and that is a conversation our program needs to have as we modify the learning outcomes.

Our findings are not specific to George Mason University. They align with findings from Clegg et al.'s (2021) project which analyzed programmatic outcomes from the field of technical communication and identified "rhetoric," "writing," "technology," and "design" as the top four occurrences of their analysis (p. 24). The fact that our analysis reveals a similar trend shows the professional and technical writing course is in tune with broader practices in the field. What is worrying is that a social justice focus is not reflected in any of the codes we have above (only two faculty included readings in social justice, and one assignment was adapted to center diversity and equity concerns but the learning outcomes did not reflect this orientation). And neither does social justice show up in Clegg et al.'s (2021) findings. Findings from our analysis confirm Agboka and Dorpenyo's (2022) claim that our curricular practices are not in tune with the upsurge of social justice scholarship. We believe that research and scholarship must shape pedagogy and curricular practices and vice versa but it appears that is not the case now. We call on programs to make conscious efforts to introduce social justice conversations in their pedagogical practices.

Step 2: Strategizing Revisions to Align with Social Justice Goals

From our analysis of the 300-level course, we have drafted updated learning outcomes which do not require department approval. This allows us to revise the readings and assignments to align them more closely to the revised learning outcomes, and it allows us to talk about the updated learning outcomes, build consensus, and argue for wider changes that require institutional approval. We also analyzed the website description of the PTW minor and noted that it did not include an orientation to social justice. Hence, we proceeded to revise the description of the minor on the website as well as the catalogue description. The catalogue description has been approved by the Undergraduate Committee and it has been updated in the University's system. Revisions to course outlines and assignment goals do not need approval from the Undergraduate Committee so we went ahead and implemented those changes. These new descriptions continue our programmatic work to align the minor more closely to current social justice concerns, while at the same time we continue to build relationships that will allow us to make changes through broader institutional

channels. The next goal is to change the course description and make it more explicitly oriented towards social justice concerns.[1]

Step 3: Coalition Building - Changing the Minor

As we prepare to discuss our findings from the analysis of ENGH 388 syllabi, we are keeping in mind that several recent decisions impact the discussion, and that the discussion will also impact others. The Writing and Rhetoric doctoral program recently hired two new faculty whose expertise includes social justice in technical communication, which will likely impact how the faculty-wide conversation progresses. Our institution is responding to President Washington's call for change, and a new Quality Enhancement Plan is being developed to center community engagement and antiracism, so there is an institutional exigence for change.

At the same time, changes to the service course impact the pedagogy class taught at the doctoral level, the professional development graduate students receive, and the current online templates. These changes are labor intensive, and generally fall to marginalized populations within the program. One important aspect of building coalition and consensus is to ensure that the labor these changes generate are distributed in equitable ways. As Natasha Jones et al. (2021) suggest, the work must be coalitional, iterative, and it should harness the labor of those with more privilege and power (p. 33; refer to Jones et al., 2021, for a comprehensive framework for building social justice initiatives that are pro-Black and antiracist).

The revised description is the first step in a long process. The course is part of the PTW minor, and other courses will have to be revised to orient the minor more explicitly towards social justice concerns. Some of this work is already being done, but we are beginning to recognize the importance of making visible this work. For example, ENGH 380, an introduction to rhetoric and writing course, was taught in fall 2020 with an orientation towards social justice. The course's learning outcomes allowed for the readings to encompass robust theoretical discussion about social justice in writing studies and rhetoric. The next step is to consider how the course may shift more overtly towards these concerns.

Lessons Learned

As we build coalitions and consensus, we have learned that:

[1] Refer to the Appendix for course descriptions being implemented by one instructor after our conversations.

- Local initiatives are very important in intervening for equitable outcomes. It takes political will to make a shift to a more inclusive curriculum. In our case, the drive for change was amplified by George Mason's president's call to action and a discipline-wide call for a more inclusive curriculum.
- Learning outcomes in a 300-level course with some institutional visibility is a good site for a conversation about curricular impact, given its position in the university and how change may generate productive conversations about other courses in the concentration and across programs.
- Balancing the lengthy process of official approval with coalitional building at lower levels of the institutional structure can generate short-term and long-term ideas and increase potential impact.
- Labor conditions need to be part of any conversation about social justice, particularly when change impacts courses taught by graduate students and contingent faculty.
- TAs and faculty should be provided with resources that prepare them to take on the arduous task of teaching social justice courses and make them meaningful to students. (To this end, we have started putting together social justice pedagogy resources for students, we invited Dr. Natasha Jones to talk about social justice in technical communication with our community in October 2020, and we intend to put together a workshop and invite resource persons to provide practical ways on teaching social justice.)

Revising a curriculum to meet social justice needs is challenging, but the change can happen if local and global contexts provide the needed atmosphere and resources. We can eventually enact policies or redesign curriculums that provide the next generation of students the tools to uproot and identify racism, inequality, and systemic injustice.

References

Agboka, Godwin Y. (2013). Participatory localization: A social justice approach to navigating unenfranchised/disenfranchised cultural sites. *Technical Communication Quarterly, 22*(1), 28-49.

Agboka, Godwin Y., & Dorpenyo, Isidore K. (2022). Curricular efforts in technical communication after the social justice turn. *Journal of Business and Technical Communication, 36*(1), 38-70. https://doi.org/10.1177%2F10506519211044195

Bay, Jennifer. (2022). Fostering diversity, equity, and inclusion in the technical and professional communication service course. *IEEE Transactions on Professional Communication, 65*(1), 213-225.

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

Clegg, Geoffrey; Lauer, Jessica; Phelps, Johanna; & Melonçon, Lisa. (2021). Programmatic outcomes in undergraduate technical and professional communication programs. *Technical Communication Quarterly, 30*(1), 19-33.

Haas, Angela M. & Eble, Michelle F. (Eds.). (2018). *Key theoretical frameworks: Teaching technical communication in the twenty-first century.* University Press of Colorado.

Jones, Natasha N.; Gonzales, Laura; & Haas, Angela M. (2021). So you think you're ready to build new social justice initiatives?: Intentional and coalitional pro-Black programmatic and organizational leadership in writing studies. *Writing Program Administration, 44*(3), 29-35.

Melonçon, Lisa. (2018). Critical postscript: On the future of the service course in technical and professional communication. *Programmatic Perspectives, 10*(1), 202-230.

Schreiber, Joanna, & Melonçon, Lisa. (2019). Creating a continuous improvement model for sustaining programs in technical and professional communication. *Journal of Technical Writing and Communication, 49*(3), 252-278.

Shelton, Cecilia. (2020). Shifting out of neutral: Centering difference, bias, and social justice in a business writing course. *Technical Communication Quarterly, 29*(1), 18-32.

Walton, Rebecca; Moore, Kristen R.; & Jones, Natasha N. (2019). *Technical communication after the social justice turn: Building coalitions for action.* Routledge.

Washington, G. (2020, July 23). President Washington announces task force on anti-racism and inclusive excellence. George Mason University. Retrieved June 10, 2022, from https://www.gmu.edu/news/2020-07/president-washington-announces-task-force-anti-racism-and-inclusive-excellence

White, Marilyn Domas & Marsh, Emily E. (2006). Content analysis: A flexible methodology. *Library Trends, 55*(1), 22–45.

Appendix

Description of ENGH 388 and course outcomes

Professional and technical writing or technical communication is the process of presenting technical, scientific, professional, complex, and civic information in ways that enable people to take clear action to dismantle systems of oppression while centering the voices of multiply marginalized or vulnerable populations. According to the Society for Technical Communication, professional and technical writing is broadly concerned with any form of communication that exhibits any or all of these characteristics:

- Communication about technical and specialized topics, such as health information, vaccines, computer applications, COVID-19, social justice, and antiracism,
- Communication by means of technology, such as through social media, webpages, and help files
- Instructions and procedures about how to do something, such as how to cast a ballot, how to code, how to fix everyday technology breakdowns

In this course, you will learn how to communicate effectively and efficiently in scientific and technical workplaces. You will also learn how to be an innovator and even an entrepreneur, whether you want to work for yourself or work for a company.

This semester, you will learn how to write a variety of workplace documents, including technical descriptions, letters, memos, formal reports, and proposals. You will also learn how to confidently present information in public. To sharpen your communication skills, you will learn how to interpret situations in the workplace; then, you will learn how to use techniques of reader-analysis, organization, style, and page layout to develop documents that address those workplace situations. Whenever possible, you will have the option to compose documents that suit your major and your future career.

Course Learning Objectives

By the end of the course, students should be able:

- Recognize, reveal, reject, and replace unjust and oppressive practices
- Identify how your positionality, privilege, and power influence the way you communicate
- Design documents with an awareness of the human needs of

users, paying special attention to accessibility, cultural diversity, and global sensitivity

- Interpret, contextualize, explain, and visualize data sets in specific rhetorical contexts or problems
- Apply a problem-solving approach to any communication task, identifying purpose, audience, and an appropriate production and delivery plan to achieve your goals
- Reveal the organization of their communications by using forecasting and transitional statements, headings, and effective page and document design.
- Arrange material to raise and satisfy readers' expectations, using both conventional and rhetorical patterns of organization.

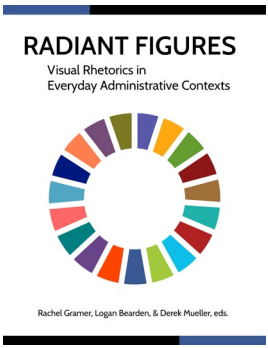
Author Information

Isidore K. Dorpenyo is associate professor of professional writing and rhetoric at George Mason University. His research focuses on election technology, international technical communication, social justice, and localization. He is the author of the book: *User-localization Strategies in the Face of Technological Breakdown*. He is currently co-guest editing a special issue on "Enacting Social Justice" for IEEE Transactions on Professional Communication. He also co-guest edited a special issue on technical communication and election technologies for Technical Communication. He has published in *Technical Communication Quarterly*, *Community Literacy Journal*, the *Journal of Business and Technical Communication*, *Technical Communication*, *IEEE Transactions on Professional Communication*, and the *Journal of Technical Writing and Communication*.

Lourdes Fernandez is assistant director for composition at George Mason University. Her research interests include hybrid course design and pedagogy, program administration, workplace communication, and rhetorics of sexual assault. Her work has been published in *Technical Communication Quarterly*, *Rhetoric Review*, *Academic Labor: Research and Artistry*, and *Reflections: A Journal of Community-Engaged Writing and Rhetoric*.

Book Review Editor

Russell Kirkscey, *Penn State Harrisburg*



Radiant Figures: Visual Rhetorics in Everyday Administrative Contexts

Rachel Gramer, Logan Bearden, and Derek Mueller, Editors

Logan, UT

Computers and Composition Digital Press/ Utah State University Press

2021. Digital text.

Reviewed by Morgan D. Beers

The Ohio State University

Radiant Figures: Visual Rhetorics in Everyday Administrative Contexts presents various approaches to the use of multimodality within the context of Writing Program Administration (WPA). Throughout the volume, scholars make a case for moving from purely textual approaches in program design toward embracing visual representations. Available in a digital format on the press's website, the twelve-chapter book utilizes text, images, color, and design to organize information for readers. Furthermore, the editors divide the chapters into seven "paths" to create a dynamic reading experience that can be linear or dictated by reader interest.

Chapter One, "Thinking Through Data Visualization: Leveraging the Exploratory Power of Figures to Create WPA Knowledge" by Julia Voss and Heather Noel Turner, challenges nihilistic views of programmatic data collection, urging administrators to be proactive in collecting and displaying data to push programmatic agendas. In Chapter Two, "Silhouette of DFWI: Census Pictographs as

Contact author: beers.79@osu.edu

Social Justice Heuristic," Derek Mueller critiques current institutional treatment of data about D, F, Withdraw, or Incomplete (DFWI) students. Infographics, Mueller explains, create more humanistic representations of DFWI students by providing depth to the connections between people and their data.

Ryan J. Dippre examines visuals as counterstory in Chapter Three, "Visualizing the Role of Small, Stubborn Facts: Changing Stories of Writers and Writing," engaging the pervasive story that "students can't write" (para. 2). Relying on Latour's Actor-Network Theory, Dippre discusses "small, stubborn facts" that stand up in the face of dominant narratives (para. 4). Dippre recognizes visuals as a translation of the program's work, recognizing how images productively challenge dominant stories. In Chapter Four, "WPA Responsive Genre Change: Using Holographic Thinking to Unflatten a Celebration of Student Writing," Kate Pantelides, Jacie Castle, and Katherine Thach Musick examine map usage during a writing event using holographic thinking and the concept of occluded genres to challenge the flatness of identities in 2D maps. In Chapter Five, "Diagram as Boundary Object: Incorporating Visuals into WPA Practice" David Swiencicki Martins describes implementing a comprehensive Writing Across the Curriculum program. Martins turned to visual representations of data as a form of "boundary encounter," creating two diagrams that demonstrate the current and proposed models of curriculum to inform and persuade administrative stakeholders (para. 10). Chapter Six, "Designing to See, Mean, and Act: Giving Shapes to Programmatic Goals," by Laurence José follows the author's use of visual programmatic representation to promote a new minor in Digital Studies. José views design as integral to administrative work, using Saussure's theory of semiotics to describe how visual programmatic materials function.

Chapter Seven, "Is Teaching Just a List? Toward Feminist-Humanistic Visual Representations of Being a Writing Teacher," by Rachel Gramer, critiques limitations within visual representations. Gramer explores methods of humanizing graphical visualizations to represent pedagogy more accurately to graduate students. In Chapter Eight, "An Ecological Heuristic for Programmatic Curricular Revision and Transformation," Natalie Szymanski adopts a scientific image to illustrate writing programs' complex ecologies through interconnectedness, fluctuation, complexity, and emergence. Szymanski connects a program's assessment practices to decomposition, suggesting assessment practices should nourish the program's future. In Chapter Nine, "Networks of Discourse: Using

Network Mapping to Examine the Influence of Institutional Histories and Program Missions on Students' Writing Development," Jacob W. Craig and Chris Warnick explore how the Charleston Bridge Program impacted student perceptions of writing. The authors practice mapping-as-analysis to address a disconnect between the programs and the importance of visuals as institutional critique.

Chapter Ten, Jamie White-Farnham's "Visualizing Fairness: A Critique and Revision of Placement Practices for International ESL Students," critiques placement practices within her program which led to an overrepresentation of international ESL students in basic writing. White-Farnham draws on Norbert Elliot's heuristics to create a graphical representation of the current placement process to alter assessment and placement practices. In Chapter Eleven, "Maps, Stamps and Plans: Using Visual, Interactive Course Documents to Promote Student Autonomy and Engagement," Andrew Lucchesi brings gamification into the writing classroom through his game board syllabus that allows students the agency to create their own success paths. In Chapter Twelve, "Graphic Re-Imaginings: Curricular Revision With/in/Through Programmatic Representations," Logan Bearden discusses design, curricular revision, and programmatic representations. Bearden mobilizes Anne Beaufort's domains of writing knowledge and spiral curriculum to reimagine her institution's first-year composition curriculum as overlapping, interconnected, and continual.

The editors organize the twelve chapters into seven paths through which readers can navigate the text. Each path engages a theme, highlighting potential points of interest for administrators and other program faculty. The editors invited prominent scholars within the field of writing program administration to read and respond to each path's theme. The paths provide methods for utilizing multimodal data visualization of particular relevance to administrators and faculty in technical writing programs interested in creating more humanistic visualizations of programmatic/classroom data or engaging in reflective curricular revision. While not new to visual data representation, those within technical, professional, and scientific writing will find new, critical, and reflexive ways to present data to those in- and outside the discipline.

The first path, "Mapping in/as Administration," explores how three chapters (Four, Five, and Nine) utilize mapping to "re-think, re-see, and re-envision" the complexity of writing program administration (para 1). Featuring a response by Louise Wetherbee Phelps, Path One is pertinent to readers interested in utilizing multimodal data

representations to conceptualize their current program, move toward curricular or programmatic revisions, or translate programmatic knowledge to stakeholders.

Path Two, "Visualizing Complexity and Simplicity" (Chapters One, Three, Seven, Eight, Nine, and Ten), featuring a response from Diana George, examines the use of visualizations to express the complexity of writing programs and provides strategies to simplify program needs to communicate with stakeholders. Path Two caters to readers interested in multimodality as a tool for curricular revision and to better visualize complex programmatic data, including making the implicit relationships between program actors explicit.

In Path Three, "Visualizing Change," the chapters (Three, Five, Six, Eleven, and Twelve) consider the potential for visualizations to represent and enact change. Featuring a response from Kathleen Blake Yancey, Path Three provides useful information for readers interested in employing visual representations to challenge the status quo of existing program structures, including curriculum and placement practices.

Path Four, "Visualizing Program Data," (Chapters One, Two, and Nine) demonstrates how humanistic data visualization can positively impact students, instructors, and programs. With a response from Amy Ferdinandt Stolley, Path Four provides beneficial information for program administrators who value social justice and creating more equitable connections between data and program faculty, students, and stakeholders.

Path Five (Chapters Two, Four, Eight, Eleven, and Twelve), "Visualizing Inventive Play," and respondent Jason Palmeri, discuss the potential for visuals to invoke "generative, inventive, and even playful" engagements with programmatic data through reflection, revaluation, and invention (para 1). Readers interested in engaging with the visual to re-examine their current programmatic and curricular practices and imagine new ones should follow Path Five.

Path Six, "Visualizing Advocacy," (Chapters Two, Seven, and Ten) demonstrates how WPAs can utilize visuals to advocate for those within their programs. Featuring a response from Heidi Estrem, Path Six assists readers dedicated to humanistic, equitable approaches to program administration, curriculum, and data visualization.

Path Seven, "Program Visibility," (Chapters Four, Five, Six, and Twelve) features a response from Annette Vee and discusses how program administrators can use visuals to represent their program to stakeholders. Readers interested in using visuals to better translate programmatic information to outside stakeholders will find Path Seven

useful.

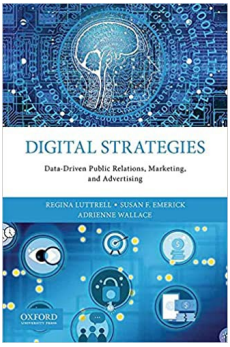
Radiant Figures presents a worthwhile glimpse into relationships between program administration and visual representation. The heuristics and suggestions put forth throughout provide valuable tools for critically examining aspects of technical writing programs, including curricular revision, humanistic data representation, programmatic representation, and the presentation of crucial information to stakeholders.

Author Information

Morgan D. Beers is a second-year PhD student in Rhetoric, Composition and Literacy at The Ohio State University. Her research areas include digital rhetoric, digital media studies, social media studies, and technical communication. Her research explores the circulation and rhetorical effect of COVID-19 misinformation on social media and the impact of inequity on marginalized communities in digital spaces.

Book Review Editor

Russell Kirkscey, *Penn State Harrisburg*



Digital Strategies: Data-Driven Public Relations, Marketing, and Advertising

Regina Luttrell, Susan F. Emerick, and Adrienne Wallace, Authors

New York, NY

Oxford University Press
2022, 249 pp.

Reviewed by Laurence José

Grand Valley State University

Digital Strategies examines emerging technologies and their role for building data-driven decisions in the fields of public relations, marketing, and advertising. The content is resolutely tailored to pedagogical contexts and alternates between general explanations and definitions, case studies, and reflections. Designed explicitly as a means "to improve the readiness of students entering the fields of public relations and marketing" (p. ix), the book has also a lot to offer to technical communication curricula through its focus on topics such as risk communication, design and visual storytelling, social media writing and influencers, corporation and activism, user-generated content and crowdsourcing, search engine optimization, social customer experience, and geofencing and audience targeting.

From a teaching and program administration perspective, one of the book's most appealing characteristics is its organization and attention to keeping the content accessible and practice-based with a clear focus on explaining through current real-life examples and connecting concepts to professional contexts. In other words, the book

Contact author: josel@gvsu.edu

is designed for teaching and, specifically, for encouraging students to connect what they learn in the classroom to their civic and future professional lives. The idea of 'bridge' between academia and industry invoked by the authors to frame their work in the introduction is visible throughout the whole book. For instance, each of the 12 chapters is bookended with a list of key learning outcomes and application exercises, discussion questions, key terms, and notes with references, thereby making it easy to incorporate all or specific chapters into a classroom.

The book's pedagogical relevance is further amplified by the chapter distribution into two main sections that basically correspond to a move from theory to practice. The first section, Chapters 1–3, provides a general framework with an overview of the role of artificial intelligence (AI) technology and data in today's marketing, communications, and public relations landscape. The second section, Chapters 4–12, is a collection of case studies showing concrete illustrations of the strategies described in part one, with examples from a range of companies (e.g., Facebook, Patagonia, Starbucks). Besides their overall relevance and timeliness, some of these examples offer interesting ways to (re) think and connect marketing campaigns to topics such as rhetorical listening (e.g., The "Life Alive" campaign and the role of media influencers). It is worth noting that the final chapter, Chapter 12, shifts the book's perspective from recent past and present toward the more long-term future with questions and insights from 10 professionals from industry and higher education regarding the role and implications of big data analytics in marketing, advertising, and public relation initiatives. This intertwining of scholarship, educators' perspectives, and industry experience is one of the book's most compelling qualities.

Even though its explicit targeting of advertising and public relations curricula may make it easy for technical and scientific communication teachers and program administrators to overlook it, this book presents an in-depth examination of what rhetoric in action is, and can be, in the age of digital communication, AI, and big data analytics. From questions surrounding the role of technology and digital data in communication design to issues regarding audience reach and profiling, participatory design and listening, user experience, ethics, algorithms, privacy, or AI and the automatization of writing, just to name a few, *Digital Strategies* raises a plethora of relevant questions and offers creative ways to highlight intersections with current debates in technical communication. As such, it can easily have a place in a technical communication curriculum, as a whole or through select chapters, including in courses such as business communication, introduction

to professional communication, data design, or visual rhetoric and design. In addition to the case studies that make it a great resource for finding current examples, the style and language are a perfect illustration of what technical communication should be, with a conscious effort to keep the language accessible while encouraging readers to reflect on the larger ramifications of the different discussion points.

Beyond illustrating the fluidity of disciplinary borders, the relevance of *Digital Strategies* for a technical communication audience also serves as a reminder of the necessity for teachers and program administrators alike to account for the impact of (big) data-driven decisions on the field. In a 2017 article, Jordan Frith contended that the field "must reflect on the epistemological and theoretical consequences of the big data hype" and that "recognizing the ways in which big data discourses render invisible the necessary levels of communication helps us identify how technical communication skills fit within these projects" (p. 183). In this regard, *Digital Strategies* can also be read as a means to explore the significance of big data and data-driven decisions for the role of technical communicators. As Frith notes, "[if] the data in big data approaches could truly represent the world completely and remove human bias and interpretation from the equation, technical communicators would be less important. Companies would no longer need anyone to turn data into accessible narratives because the findings would be self-explanatory" (2017, p. 175). Where *Digital Strategies* concludes with a call for marketing, public relations, and advertising professionals to keep developing skills for ongoing developments in data analytics and the use of AI, technical communication readers can draw from this argument to continue and feed a much needed discussion about the impact of big data on the changing needs for technical communication skills in the workplace. If Luttrell et al. mainly emphasize in *Digital Strategies* ways for future public relations and advertising professionals to strategize data-driven insights, their comments on "businesses and social responsibility" (Chapter 7) and their concluding call for attending to the ethical dilemmas raised by AI (Chapter 12) make the book a good fit for any curriculum and program focused on the reality of what it means to be a professional communicator in today's digital landscape.

References

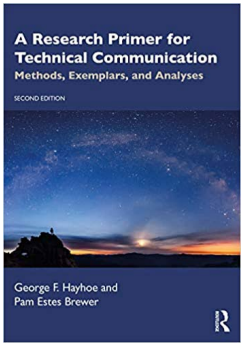
Frith, Jordan. (2017). Big data, technical communication, and the smart city. *Journal of Business and Technical Communication, 31*(2), 168–187.

Author Information

Laurence José is an Associate Professor of Writing and the Director of the Digital Studies minor at Grand Valley State University where she teaches classes in professional writing, visual rhetoric, and digital studies. Her research interests include data design, cross-cultural communication, writing pedagogy, and program administration. Her work has appeared in journals in the US and France, and different edited collections. Between 2008 and 2015, she contributed to *Programmatic Perspectives* in different ways, including as the book review editor and as an assistant and associate editor.

Book Review Editor

Russell Kirkscey, *Penn State Harrisburg*



A Research Primer for Technical Communication: Methods, Exemplars, and Analyses (2nd Edition)

George F. Hayhoe and Pam Estes Brewer, Authors

New York, NY

Routledge
2021, 316 pp.

Reviewed by Jennifer Wilhite

El Paso Community College
Burges Early College High School

George F. Hayhoe and Pam Estes Brewer's (2021) second edition of *A Research Primer for Technical Communication: Methods, Exemplars, and Analyses* addresses research approaches and potential cognitive-emotional stresses with two goals: (1) to introduce how to critically read and carefully write research-based technical communication and (2) to analyze technical writing in such a way that the reader learns how to judge validity of texts. Hayhoe and Brewer's primer achieves its objectives for its broad audiences, which include those reading research and/or preparing to conduct industrial projects, students in classes/programs that require research projects, and professors teaching classes and/or directing graduate students in designing, conducting, and reporting technical communication research.

Hayhoe and Brewer divide their 12-chapter text into two parts. Part I: "Methods" includes seven chapters that situate the role of research in the field of technical communication, instruct researchers in the comprehensive processes of conducting and

Contact author: jwilhite@miners.utep.edu

reporting research, and explain quantitative and qualitative methods. Instructors will find Part I invaluable when introducing beginners to essential terms, and veteran researchers will appreciate the concise refresher. Each chapter introduces its purpose and objectives, directs the student/writer through content with examples and scaffolded exercises that review skills and reinforce concepts, then concludes with a comprehensive yet succinct summary. Part II: "Exemplars and Analyses" consists of five chapters that center a collection of timely research articles as examples of the methods introduced in Part I. The subsequent commentary sections analyze how well each article follows the processes described in Part I. Experienced researchers will find the commentary sections valuable guides to drafting clear research publications; beginning researchers can follow the mentor texts as they structure their work. Part II also includes practice exercises that scaffold students beyond academic drills with sections called "For Further Study," which ask readers to apply concepts and skills to suggested journal articles.

Instructors can use Chapter One, "Research: Why We Do It and Why We Read It," to describe the purpose and types of research found in technical communication. The authors begin their primer by encouraging the reader to "apply the research of others to your own practice" (p. 4), which is vital to understanding how researchers approach projects. Chapter Two, "The Research Phases and Getting Started," guides readers through a research report and provides a worksheet that breaks down how to articulate research goals and craft research questions. Directors of graduate projects will especially appreciate the step-by-step guide for creating research questions, and writers in industry will find the worksheet helpful in articulating goals for research proposals as well as project design. One of the most important aspects of research, "gaining the informed consent of the participants," (p. 19) is also introduced.

Chapter Three, "Reviewing the Literature," navigates the differences and purposes of primary and secondary research. Students may struggle with these concepts, so the authors offer a discussion about the "reasons for doing secondary research as part of a primary research project" (p. 38) and carefully guide the reader through the process of reading/writing an annotated bibliography as a preparatory step before reading/writing a literature review. Chapter Four, "Analyzing Quantitative Data," provides a guide for evaluating and planning viable quantitative research. The authors limit their discussion to a "statistical analysis of hypothesis testing" (p. 56) that does not overwhelm the beginning writer with mathematical formulas. In addition, they discuss

quantitative designs commonly found in technical communication publications. To ensure even the newest writer's ability to utilize software for data analysis, the authors provide a step-by-step guide with figures that are screenshots from actual Excel and Jamovi worksheets. While invaluable for those just beginning with programs like Excel, the speed at which software is updated might leave the figures outdated before the third edition of this book is printed.

Chapter Five, "Conducting a Qualitative Study," compares quantitative research with research based on qualitative studies. Instructors will find the focus on evaluating rigor by establishing parameters for credibility, transferability, and dependability an important foundation, and their students will find the guide through coding, categorization, and research easy to apply to their projects. Chapter Six, "Conducting Surveys," introduces a process a novice researcher could follow when designing, implementing, and analyzing surveys. Surveys are used in both qualitative and quantitative research and, while a single chapter cannot provide complete steps to mastery, it does introduce enough content for a beginner "to conduct a valid survey and to understand what limitations might constrain its reliability" (p. 117). Chapter Seven, "Conducting Usability Studies" defines and historically situates usability studies in technical writing. The discussion will help academic and industry writers decide if a usability study fits their project. As there are myriad potential methods employed in usability studies, the authors provide concise and precise overviews of the most common methods and define "five characteristics of usability" (p. 150) to guide consumers of research in ascertaining the rigor of a usability study.

Each chapter in Part II begins with a review of its corresponding chapter from Part I and then provides context for a mentor text, a detailed commentary, meticulous analyses, authentic exercises, and a "For Further Study" section. This structure supports instructors as they move their students from theory to practice. For example, Chapter Eight "Analyzing a Literature Review," provides the context and text of a literature review followed by commentary that applies the skills from Chapter Three in a rhetorical analysis of the purpose, audience, organization, and hypotheses of the review. Chapter Eight's exercises build on those in Chapter Three and scaffold beginning researchers towards independently writing and analyzing literature reviews in the "For Further Study" section. Instructors can use Chapter Nine, "Analyzing a Quantitative Research Report" to remind students of the skills presented in Chapter Four, which provides further context for—and the full text of—the article introduced in Chapter Eight. The

rhetorical analysis adheres to the pattern established in Chapter Eight. Chapter Ten, "Analyzing A Qualitative Research Report" reviews the skills from Chapter Five, then provides a context for the mentor text: an IEEE-style article. The commentary section evaluates the article's style, purpose, audience, and organization. Then the analysis section deconstructs the qualitative report's findings to demonstrate how a student or experienced research can ascertain the codes/processes by which the writers arrived at their conclusions and the rigor of those conclusions. Chapter Eleven, "Analyzing a Report on the Results of a Survey" continues to build on skills presented in Chapter Six and with an APA-style article, complete with appendix, which contains the survey from which the article's conclusions are drawn. Instructors can use the commentary to explain what makes the article "an excellent example of a report of survey results" (p. 255) and then use the exercises to ask students to emulate the design of the mentor text to craft viable survey questions and address population/sample issues. The final chapter, Chapter Twelve, "Analyzing a Report on the Results of a Usability Study," is an accumulation of the skills and concepts introduced throughout the book. The chapter points out "some minor flaws" of a 2018 usability study but focuses on the mentor text's "rigorous investigation of user preference using industry-standard tools" (p. 290). Experienced researchers will appreciate the detail with which commentary and analysis explain how the authors address their purpose and audience, how the organization of the text reflects its purpose, and how the article's authors' methods achieve and fall short of validity and reliability. Invaluable to the beginner researcher, the book concludes with an appendix consisting of instruction and practice exercises that introduce APA and IEEE citation styles and reviews the merits of citation managers. Unfortunately, the book does not include a glossary, but it does contain an index that will guide readers to definitions of key terms.

Instructors with classes of beginning researchers, as well as professors directing graduate writing projects, can use Hayhoe and Brewer's text to successfully scaffold key complex research concepts. The book also serves as a refresher for veteran researchers. Academic and industry writers can complete complex projects by following this detailed, but uncomplicated, guide from the beginning stages of understanding research to the ending stages of publishing results.

Author Information

Jennifer Wilhite holds a graduate certificate in Technical Writing and a PhD in Rhetoric and Composition Studies. She teaches Senior Practical Writing and Dual Credit English Composition classes at Burges Early College High School and El Paso Community College in El Paso, Texas. Her research centers graduate writing supports offered at the university level.